

High Quality Meetings for up to 10,000 Simultaneous Users with Skype Meeting Broadcast and Kollective SD ECDN



Video is one of the most powerful forms of communication, and one that is increasingly used by leading global companies. Today, many companies count on video to help engage their distributed workforce. Using video is a very effective way to conduct a range of on-line events from small meetings with several hundred viewers to large meetings with thousands of viewers.

While appealing content is important in facilitating employee engagement, it is only one success factor. The other is the viewing experience. If the content is appealing but the viewing experience is poor or the content cannot reach its intended audience, the communication effort will fail. In order to create a truly engaging experience, the video delivery method needs to scale to ensure high quality video delivery across the entire organization. Broadcast meetings where employees are geographically distributed present a common video delivery challenge.

Solving the Video Delivery Challenge

As more business technologies become IP-based, demands on the corporate network increase to the point where it's a constraining resource. One particularly problematic scenario is an all-hands webcast featuring a key executive. This generates substantial network traffic from the backbone out to the edge, which can easily result in saturated WAN links and the disruption of critical business functions. This practice often requires purchasing and deploying expensive hardware caches, WAN optimizers, streaming-server repeaters and other devices that can be prohibitively expensive. In order to overcome these video delivery challenges, video application software has to be optimized to deliver high quality video and accommodate large meetings.

Microsoft is meeting these video delivery challenges by migrating to Skype Meeting Broadcast, a technology specifically designed for the unique needs of video broadcasting. Built to scale online meetings to audiences with thousands of concurrent viewers, Skype Meeting Broadcast enables high-quality, adaptive video streaming to any device on any major operating system, without the need for plug-ins or downloads. Cloud-based technologies from Microsoft Azure provide vital technical infrastructure to deliver robust performance for Skype Meeting Broadcast. These technologies include Azure Media Services for live streaming and Azure Content Delivery Network (CDN) to support any device that viewers might be using. But Content Delivery Network architectures can't always overcome the congestion issues that come with hosting large employee meetings for up to 10,000 viewers. To solve the large scale video delivery challenge, Microsoft has partnered with Kollektive to integrate an alternative video delivery network - a Software Defined Enterprise Content Delivery Network (SD ECDN).

SD ECDN is a software-based network that orchestrates both an enterprise's network infrastructure and its end-user devices into an adaptive, continuously optimizing, fully distributed content cache and delivery system. Its formation and operation are fully software-defined, providing the flexibility, agility, and central control commonly afforded by software-defined systems. The key benefits of the Kollektive SD ECDN that solve the video delivery challenge are:

Congestion Reduction	Stream a high quality, live video All Hands meeting to all employees reliably, without impacting the network.
Network Intelligence	Every computer is a content server.
Network Control	Network becomes highly configurable: characteristics of the network functions are configured via software to determine the key attributes of the network's function.
Adaptive Response	Guaranteed most efficient, timely, and complete delivery; dynamically redistributes load based on network changes within the guidelines set by the Kollektive SD ECDN Controller.

Integrating Best of Breed: Microsoft Skype Meeting Broadcast and Kollektive SD ECDN

By default, Skype Meeting Broadcast generates video sessions through the Azure CDN and delivers the video experience through the Azure Media Player running in a web browser. In order to scale meetings from 1,000 to 10,000 users, IT support teams provision the tightly integrated Kollektive SD ECDN, comprised of server and agent components. The availability of the SD ECDN delivery path is transparent to individual users, and the Kollektive SD ECDN is activated as needed. The high-level architecture of the Kollektive SD ECDN integration with Skype Meeting Broadcast is described in Figure 1.

Skype Meeting Broadcast and the Kollektive SD ECDN agent that is integrated directly into Azure Media Player use either installed or web-based Skype for Business applications. When Azure Media Player detects the Kollektive SD ECDN agent running on the end-user device, the Player will stream live video directly from the agent. If an agent is not found, the video stream is sourced from the Azure CDN.

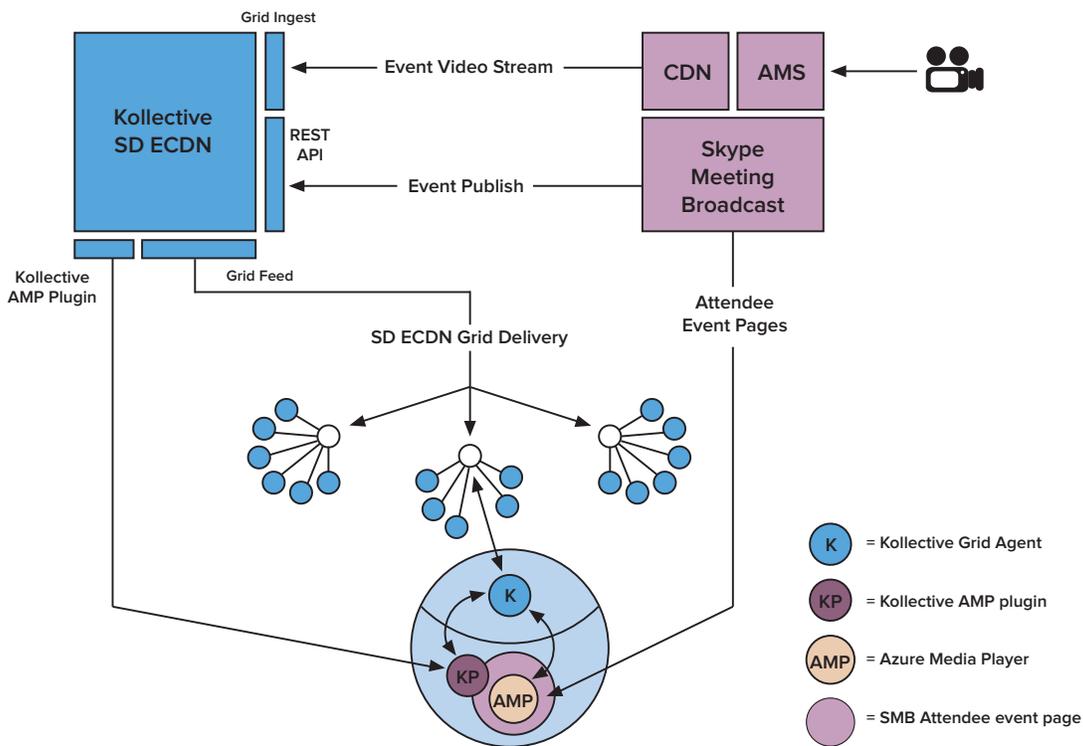


Figure 1: Kollektive SD ECDN and Skype Meeting Broadcast

Kollective SD ECDN boasts robust security measures and authentication mechanisms. When integrated with Skype Meeting Broadcast, Kollective SD ECDN also includes these significant enhancements:

- Delivering video streams in a tunneled fashion which does not require decrypting the streams on transit. This guarantees the utmost level of security, having encrypted streams flow uninterrupted through the Kollective delivery network end to end.
- Agent detection is done over SSL (Secure Socket Layer), removing the reliance on Adobe Flash that is now considered unsafe by many organizations.

Once installed and configured, Kollective's delivery solution for Skype Meeting Broadcast is extremely easy to use. Skype Meeting Broadcast publishes live events into Kollective SD ECDN, which in turn delivers the stream to all attendees. The tight integration between Kollective and Skype Meeting Broadcast takes care of everything, without putting any additional load on the user.

Attendees have an identical user experience whether or not Kollective delivery is engaged, with one major difference: with Kollective, up to 10,000 attendees are able to watch the broadcast simultaneously, at high quality and without buffering or stuttering and without placing undue load on the enterprise's network.

Summary

Reaching thousands of attendees is a key function of Skype Meeting Broadcast, and Microsoft is partnering with Kollective to solve the video delivery challenge that is inherent in scaling large meetings. Kollective solves enterprise video delivery challenges by routing secure, high quality live video streams on the existing network infrastructure. It orchestrates both an enterprise's network infrastructure and its end-user devices into an adaptive, continuously optimizing, fully distributed content delivery and edge-caching system. By sharing the video stream among end-user devices, and intelligently adjusting network bandwidth, a higher video quality and reduced network congestion results. Hosted on Microsoft Azure and integrated with Skype Meeting Broadcast, Kollective delivers live video for up to 10,000 employees simultaneously.

Contact Kollective