

The Kollective Software Defined Enterprise Content Delivery Network (SD ECDN)

FOR LIVE AND ON-DEMAND VIDEO VIA OFFICE 365 TOOLS

Corporate networks that span the globe and serve large, distributed workforces can support both high-quality live video for webcasts and extensive on-demand video streaming using the Kollective SD ECDN.

As video becomes an increasingly important communications vehicle in the workplace, network professionals and video event teams require an all-encompassing enterprise content delivery solution to support the primary use cases in this category:

- Live video streaming or webcasting via Skype Meeting Broadcast (SMB)
- Video on Demand (VoD) via Office 365 Video or Stream
- Background video delivery

SMB events rarely exist as one-time occurrences. A leadership town hall event with one or more presenters and tens of thousands of simultaneous real-time viewers is typically archived and made available as a VoD for later viewing via Office 365 Video/Stream. Fortunately, Kollective's software-defined enterprise content delivery network (SD ECDN) solution provides dramatic bandwidth savings for all phases of the video content life-cycle.

SD ECDN technology

SD ECDN employs cloud-based, peer-assisted delivery technology that leverages an enterprise's existing physical network infrastructure, requiring no costly hardware build-outs or architectural changes. It efficiently delivers video across the corporate network by dynamically building a smart grid of end-user machines to support each other in distributing the SMB event.

A small software agent is installed on end-user machines, enabling them to participate in the self-scaling delivery network. End-points cooperate with a central controller and peer with nearby end-user machines to collectively minimize duplicate traffic across wide area network (WAN) and Internet gateway links, and exchange content over fast local area network (LAN) links instead.

Because agents exchange content over fast LAN links, only one copy of a live or VoD stream comes across the shared links. Using the smart grid to build a cache of previously-delivered VoD items, SD ECDN eliminates the need for future requestors to pull that stream or file across the WAN.

Leverage the Kollective SD ECDN to deliver excellent user experiences with SMB and Office 365 Video/Stream.

SMB live video delivery

Live video inside the enterprise involves a high level of business risk, especially when a CEO or other senior executive wishes to communicate critical, time-sensitive information to all employees. End-users and business stakeholders alike expect a seamless viewing experience, leaving no room for suboptimal quality.

SD ECDN integrates seamlessly into SMB through the Producer interface and includes specific features that allow for complete control over the formation of the smart grid during an SMB event, including:

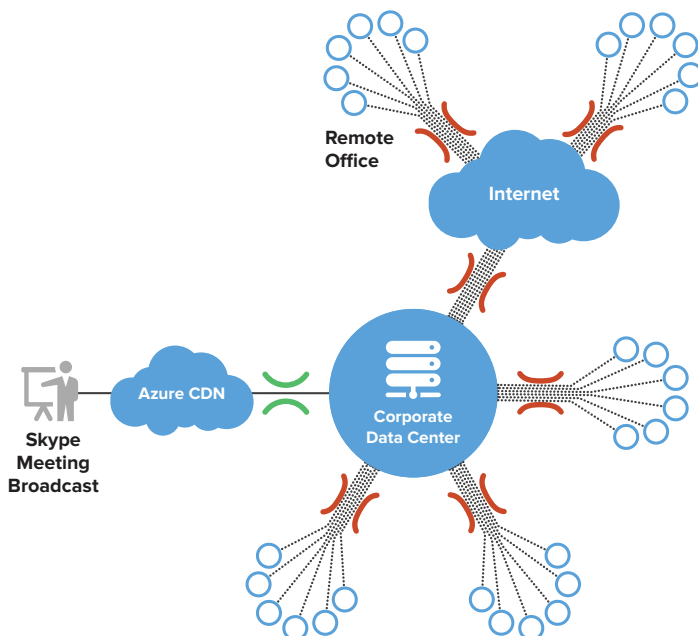
- Grid formation and traffic pattern controls
- Bandwidth, disk and CPU utilization caps for individual end-user devices
- Speed test algorithm for optimized bitrate selection
- Support for specific smart grid behavior rules based on use case
- Locality-based smart grid management

The SD ECDN becomes increasingly efficient when more users join the smart grid to participate in a live broadcast. The more agents that join, the more robust the grid becomes as stronger peers surface to help distribute the live stream across the enterprise. Large concentrations of participants in specific sites drives the leverage from the SD ECDN into its highest range (over 95% bandwidth savings). Even small locations with only two users can experience a 50% bandwidth savings across the WAN or Internet gateway.

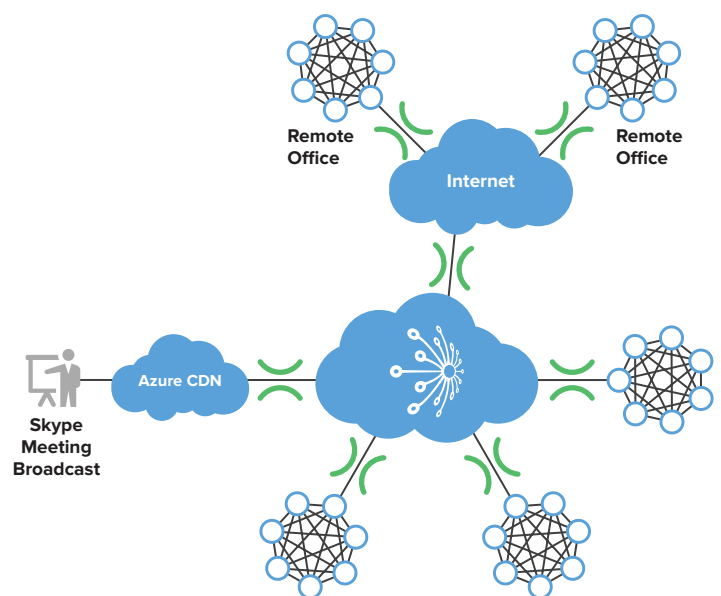
By eliminating the need for each live participant to connect over the WAN to the video source, SD ECDN makes broadcasting real-time, high-definition (HD) video to thousands or tens of thousands of users highly reliable and advantageous from a network standpoint.

Live video delivery before and after SD ECDN

Before



After



VoD delivery via O365 Video or Stream portals

SD ECDN provides significant bandwidth savings when used in conjunction with O365 Video/Stream or other means of accessing VoD content like SharePoint. In these cases, the system can be used in a slightly different way than for live video delivery, but leverages the same integration with Azure Media Player as it does with SMB.

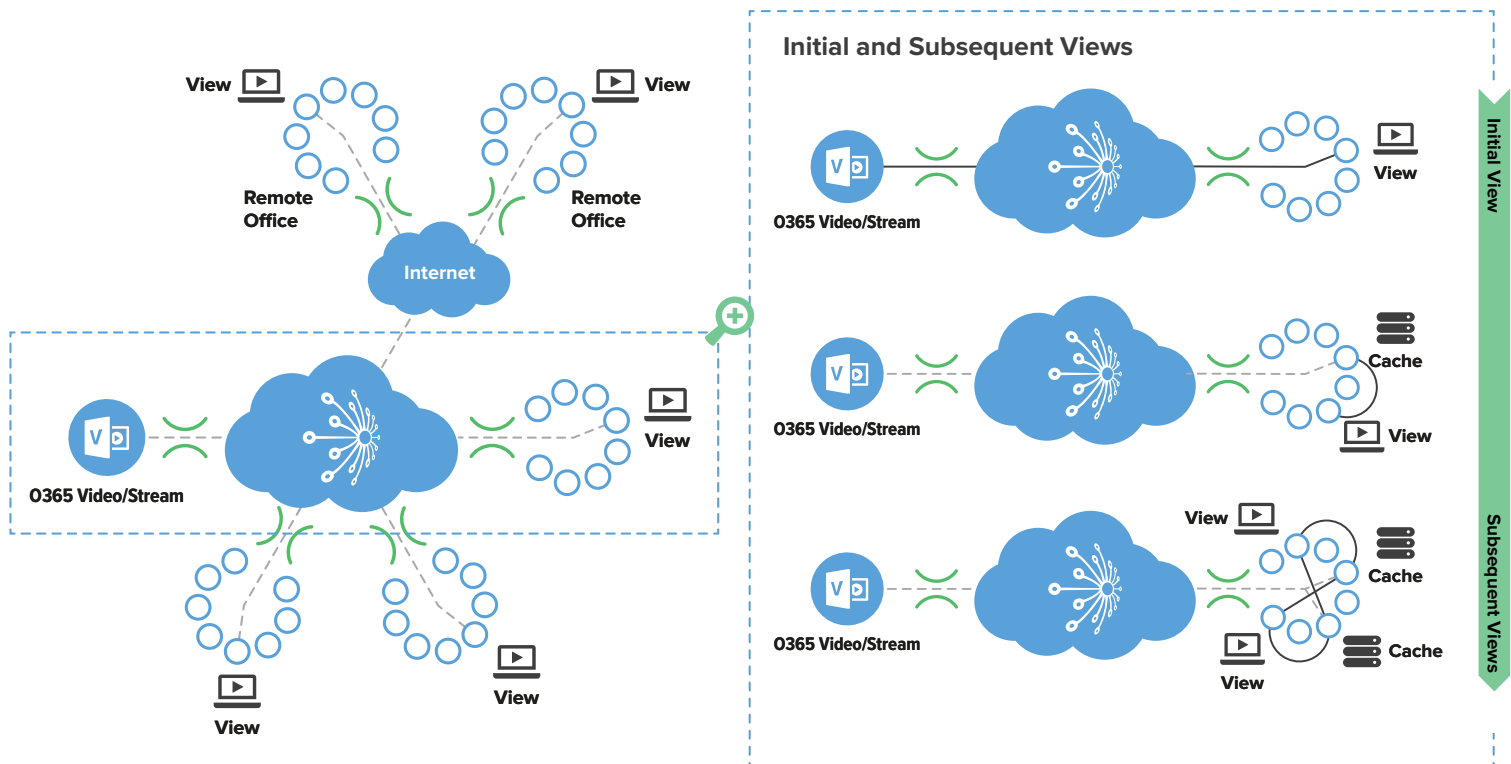
When a user initiates a request to view VoD content, the video is downloaded over the existing network and cached on their device. The next time someone requests that same video, the smart grid identifies other users within peering range who are storing parts of that file in their cache. If there are local copies of the video, the smart grid will deliver it via a combination of local peers.

SD ECDN's ability to deliver content through the smart grid rather than from origin servers saves significant amounts of bandwidth across the WAN and/or Internet gateway connections. Once a video or other content item has been downloaded, the next users can often get that content delivered locally, saving 100% of the WAN/Internet gateway traffic load.

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VoD delivery with SD ECDN



Background video delivery

The background video delivery method is essential for distributing content that is expected to be popular. This method allows content to be embargoed and unlocked for viewing at preset times.

With SD ECDN, content may be pre-delivered to users by subscription or through target lists, allowing it to be sent during off-hours with conservative use of existing network bandwidth. Configuring the smart grid to be mostly self-reliant, combined with off-hours transmission, can deliver impressive results even with very large files.

Background delivery is a highly efficient use of SD ECDN. Many Kollektive customers adopt this method to distribute critical communications to audiences as large as 255,000 users and, as a result, observe bandwidth savings of 95-98%.

Summary

SD ECDN's central management and intelligent control mechanisms give network professionals the ability to succeed in delivery situations where conventional bandwidth reservation techniques or prioritization alone falls short.

As the most popular, secure, and viable software-only solution for enterprise video on a large scale, SD ECDN is powerful in its ability to attain a desired balance of network performance and load for all video use cases.

WHY KOLLECTIVE?

The largest, most successful, global companies trust Kollektive Technology to power their Enterprise Live and On-Demand video delivery, serving millions of users worldwide. From its software defined enterprise content delivery network (SD ECDN) to edge related IT tools like Network Readiness Testing and Network Analytics, Kollektive drives a powerful ROI and makes the flexibility of software defined networking a reality.

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