

## Introduction

In a properly designed corporate network, IP Multicast can be used to very efficiently distribute video. This technology, coupled with Cobalt's openGear **9990-ENC-H264-IP** or standalone **BBG-1099-ENC-H264** encoders, can be used to create a very compelling corporate video distribution infrastructure.

## Multicast Video Distribution

Nowadays, most corporate networks are built using managed layer-3 switches from vendors such as Cisco, Juniper, Extreme or others. Most modern layer-3 switches have multicast support built-in, and ready to be turned on. What this means is:

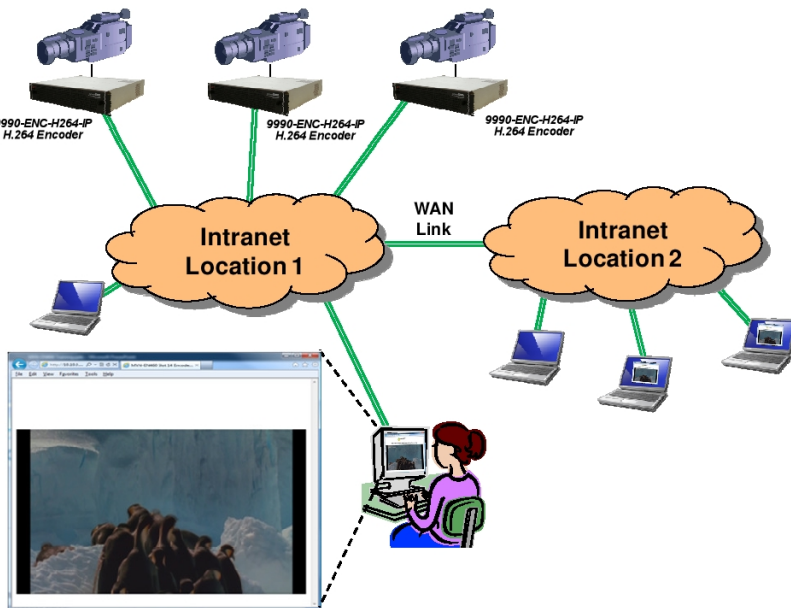
- Multicast video only goes where it is needed. In other words, it is only delivered to a given network port (user) when requested.
- If the network spans multiple locations, only one copy of each stream is ever transmitted on the WAN link, and only if there are viewers in the remote location. This is far more efficient than using unicast, where one copy is transmitted per viewer. This way, WAN link bandwidth is conserved.

All modern PCs have the CPU capability to decode at least Standard Definition H.264 video; most will be capable of decoding also High Definition H.264 video. In addition, all modern desktop Operating Systems (Windows, Linux, MacOS) have appropriate support for IP multicast. The bottom line is that the average modern corporate network is likely to be ready for IP Multicast video, with little or no investment; moreover, the ubiquitous PC platforms make suitable decoders.

To make matters even simpler, the video should be layable in a web page, thus using a tool (web browser) in which users are already very familiar.

## Video Distribution Network

An example of a corporate video distribution network is shown below. The highlights are:



- Cobalt 9990-ENC-H264-IP and BBG-1099-ENC-H264 encoders are used to ingest the content and convert them into H.264 Video/Audio streams, transmitted into the network over IP Multicast.
- Users access the content via web pages automatically generated by the encoders. These web pages take care of all the low-level configuration details, such as multicast addresses, streaming protocols, and UDP ports. If desired, the IT department can make a static web page on one of the intranet servers with a "channel list", pointing to the individual encoder web pages.
- The network infrastructure only transmits the multicast to PCs that have requested it. In particular, only one copy of each requested stream will be transmitted over the WAN Link, regardless of how many users are watching it in Location 2. The stream replication for Location 2 users happens at the layer-3 switches deployed at that site.