MediaPlatform Solutions

Technical Playbook

Version 1.4.0
Thursday, February 21, 2019

Contents

1. About this document

This document summarizes the technical aspects of the different MediaPlatform solutions.

If you have any questions or feedback about this document, please contact info@mediaplatform.com

Streaming and content management solution capabilities aligned to latest released versions of relevant products at time of writing.

This document will be periodically reviewed and updated, based on new or planned feature releases.

2. Company Overview

MediaPlatform (a private venture backed company headquartered in North Hollywood, CA) was founded in 2005, continues to renew contracts with several Fortune 500 companies and has acquired several new Fortune 500 customers in 2017. In Q3 of 2012, MediaPlatform acquired VCall, a leading webcasting services company, to expand our ability to offer full service corporate communications events and to broaden our customer support staff. This division is headquartered in Richmond, VA. MediaPlatform is focused on enterprise video software including portal and live webcasting.

Our Mission

MediaPlatform is the leading live streaming and on-demand video platform with customers that include Abbott Laboratories, ConocoPhillips, EY and Sprint. MediaPlatform combines a robust video portal with fully integrated interactive webcasting, to help medium and large organizations improve corporate communications and training.

MediaPlatform helps businesses leverage on-demand and live video to be become more social enterprises, improve employee engagement and enable collaboration. With integrations for Microsoft SharePoint, Skype for Business and Webex, MediaPlatform software can serve as the backbone for your entire video communications strategy. MediaPlatform offers organizations the ability to take advantage of scalable cloud-based computing, as well as on-premises deployment, to present and manage rich media.

www.mediaplatform.com

www.twitter.com/mediaplatform

https://www.linkedin.com/company/mediaplatform-inc-

CEO, Mike Newman

Mike Newman is Chief Executive Officer of MediaPlatform. Prior to joining MediaPlatform, Mike was most recently VP/GM at Polycom (NASDAQ: PLCM), where he oversaw Polycom's worldwide video content management and streaming business. Before Polycom, Newman was CEO and co-founder of Accordent Technologies, Inc. a high growth video content management company with operations in 13 countries. For nearly ten years, Newman was responsible for shaping Accordent's strategic vision, running internal operations, and contributing to sales and business development. In 2011, Newman oversaw Accordent's acquisition by Polycom, Inc. (PLCM); the transaction was recognized by LAVA as the "Most Capital Efficient Exit" of 2011. Newman is a graduate of the University of Pennsylvania Law School and Allegheny College.

3. MediaPlatform Overview

MediaPlatform consists of two primary applications: MediaPlatform's On Demand video portal, which provides video asset management, VOD transcoding, user management, content security and governance; and MediaPlatform Webcaster, which enables live video streaming, live and on-demand rich media webcasting, presentation creation, event registration, event management and scheduling, webcast editing and archiving. We will also reference a couple of overarching technologies that are a part of the MediaPlatform solution, and which are worth considering in the context of this technical brief, including SSO, Bridge, Video Business Intelligence and Smartpath.

MediaPlatform On Demand – Video Portal for the Enterprise

Key Features
1. Fully customizable video portal
2. Ingest or Capture
3. Upload WebEx Recordings
4. Mobile Recording
5. Search
6. Analytics
7. Stream to Everyone
8. No File Limits
9. Roles and Permissions Management
10. Adaptive Bitrate Streaming
11. Deployment Flexibility
12. Edge eCDN
13. SSO with internal and external authentication systems
14. Lifecycle Management
15. Content Approval workflows
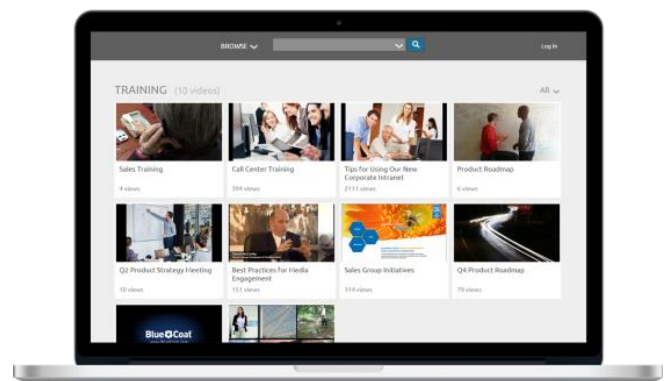
Webcaster – Enterprise Live Streaming Platform

Key Features

1. Customizable Webcasts
2. Webcast Templates
3. Producer Screen
4. Interactive Elements
5. Stream to mobile devices
6. Real-Time Analytics
7. Massive Scalability
8. Browser-based Platform – No Downloads
9. WAN Optimization Technology
10. Adaptive Bitrate Streaming
11. SSO with internal and external authentication systems
12. Security and permissions
13. Deployment Flexibility

At-a-glance

MediaPlatform

Video Encoder

High-Professional AV equipment can be used to produce the video stream by:
- Internal customer staff
- White Glove Event Provider

Video Conferencing Infrastructure

Video Conference endpoints or MCU can be a source of a webcast. For example: Polycom, Cisco, CMS, Skype for Business (S4B only via MCU with interoperability)

MediaPlatform Cloud

MediaPlatform Bridge

Non-SSO
- Registration Page for Webcasts
- IP-Range & Domain restriction
- Self-registered Portal users
- Global PIN
- Manually created users
- Public/anonymous access

SIngle Sign-On

Employees will be authenticated and authorized via cloud or on-premise AD/ADFS

Cloud Streaming Server

MediaPlatform SSO

Public Internet

Streaming to external users via Akamai Global CDN
→ Unlimited Scale

Akamai

Customer Network

Primary and failover video delivery methods: Unicast, Multicast, P2P

Kollective   HIVE STREAMING

Smartpath for Distribution

Video On-Demand Portal
- No File Limits
- Roles & Permissions Management
- Adaptive Bitrate Streaming
- Content Approval
- HTML5

Webcasting
- HTML5
- Customizable
- Highly scalable

Webcaster

MediaPlatform On Demand

VoD Analytics
- Top Viewer
- Top Contributors
- Average Play Time
- Total Play Time
- Etc.

Webcast Analytics
- Quality of Experierence
- Quality of Service
- Real-Time Collection of webcast relevant data
- Dashboard
- Troubleshooting

MediaPlatform Video Business Intelligence (VBI)

4. Industry Recognition

MediaPlatform Inc., the leading enterprise video content management solution enabling CEO town halls, e-learning and collaboration is a Leader in Gartner's 2018 and 2016 Magic Quadrants for Enterprise Video Content Management.

Gartner

Leader
Magic Quadrant for Enterprise Video Content Management – two consecutive times

FROST & SULLIVAN

Leader
Enterprise Video Platforms for On-Demand and Webcasting

Aragon Research

Leader
The Aragon Research Globe™ for Enterprise Video

FORRESTER®

Leader
The Forrester Wave™: Enterprise Video Platforms and Webcasting

5. Deployment Options

MediaPlatform Deployment Methods

Pure SaaS & Hybrid Saas (Multi-tenant)

| Instances are hosted in AWS EC2 | Content is stored in secure AWS S3 cloud. Data-at-Rest security via 256-bit AES encryption | Distribution/Streaming of live and on-demand content via Akamai Global CDN. | Enterprise Video Distribution (Hybrid SaaS) • MediaPlatform SmartEdge • VoD Caching • Unicast Split-Streaming • Multicast (RAMP, Adobe) • Hive Streaming • Kollective |

Single-tenant

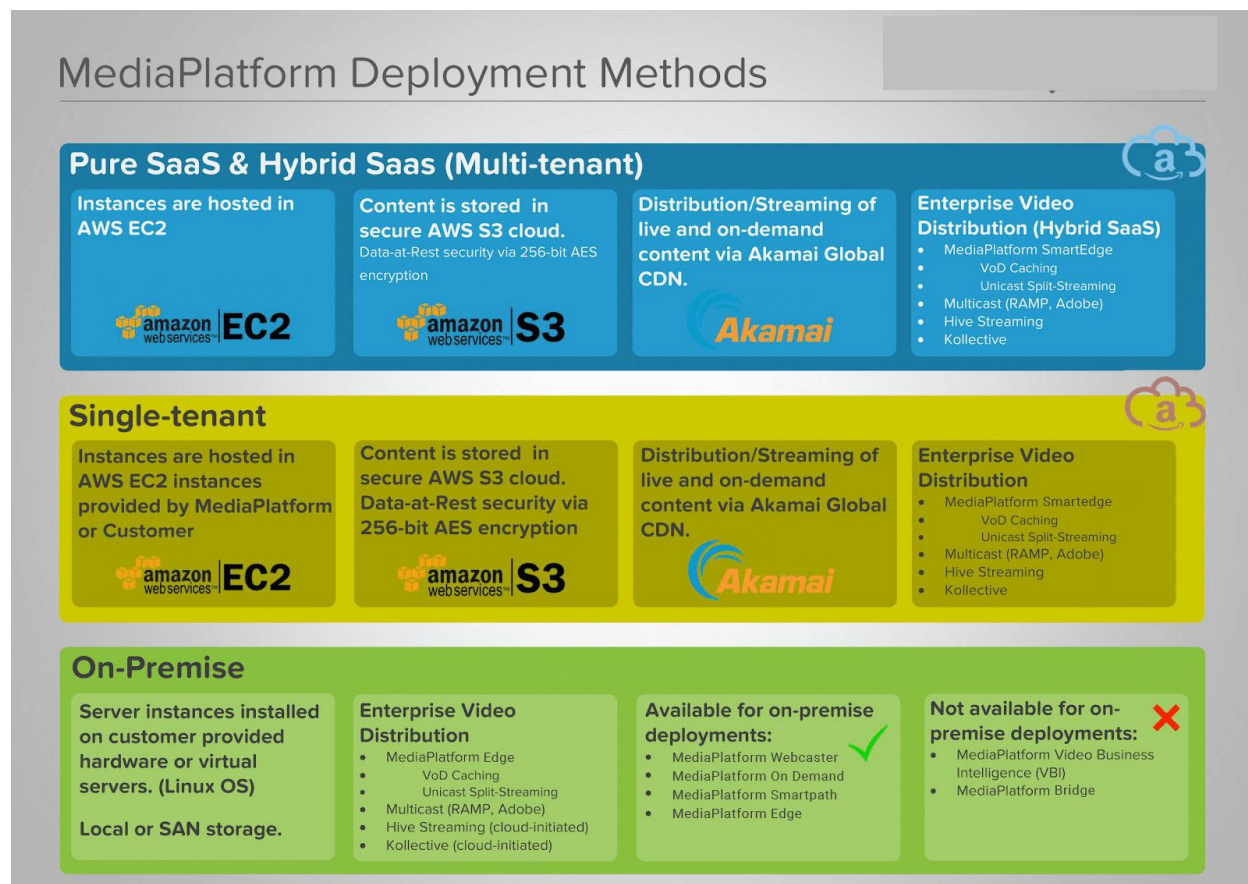| Instances are hosted in AWS EC2 instances provided by MediaPlatform or Customer | Content is stored in secure AWS S3 cloud. Data-at-Rest security via 256-bit AES encryption | Distribution/Streaming of live and on-demand content via Akamai Global CDN. | Enterprise Video Distribution • MediaPlatform Smartedge • VoD Caching • Unicast Split-Streaming • Multicast (RAMP, Adobe) • Hive Streaming • Kollective |

On-Premise

| Server instances installed on customer provided hardware or virtual servers. (Linux OS) Local or SAN storage. | Enterprise Video Distribution • MediaPlatform Edge • VoD Caching • Unicast Split-Streaming • Multicast (RAMP, Adobe) • Hive Streaming (cloud-initiated) • Kollective (cloud-initiated) | Available for on-premise deployments: ✓ • MediaPlatform Webcaster • MediaPlatform On Demand • MediaPlatform Smartpath • MediaPlatform Edge | Not available for on-premise deployments: ✗ • MediaPlatform Video Business Intelligence (VBI) • MediaPlatform Bridge |

Enterprise Network Evaluation for Video

As with any deployment of MediaPlatform SaaS, Hybrid SaaS, or On-Premises, the first step is to do a thorough network evaluation to assess the unique challenges each enterprise faces with a variety of network locations, network types, and bandwidth issues.

Video is unlike any other data traffic an enterprise must manage. This is due to the unique challenges posed by video, where unlike traditional applications the distribution of data is particularly problematic because of the extremely large file sizes, and bitrates. The end goal of this evaluation is to allow us to fine tune the custom install architecture, and configuration to the enterprise's unique network topology, and requirements.

Once the network evaluation is completed, the next step is to architect the optimal configuration of software, hardware, and distribution profiles to ensure the best possible video quality and network performance for each location. Once these steps are completed the on-premises (or MediaPlatform On-Premises) implementation can begin.

Virtual Machine Installation

MediaPlatform's systems can be installed as virtual machines and deployed on virtual servers. Each component of the MediaPlatform application is its own virtual machine.

Pure SaaS

MediaPlatform's VoD and Live-Event solutions are hosted in the cloud and provide instantaneous access from any internet connection. The delivered application performance and utilization is above what can be obtained internally. The internet Content Delivery Network takes care about the streaming of both live and on-demand videos.

Hybrid SaaS

Hybrid SaaS has all the benefits of a SaaS solution, in addition to allowing enterprises to leverage a variety of solutions for delivering video across internal networks, and multiple network locations, as well as to external and mobile viewers. Based on a distribution-agnostic approach, in the Hybrid SaaS solution model MediaPlatform can integrate with a variety of different distribution solution like Peer-to-Peer, Multicast and Unicast streaming.

Single Tenant SaaS

Single-tenant systems give a user its own database and its own instance of the software application. Placed on its own individual server or segregated via extensive security controls to create its own virtual server, users of single-tenant systems enjoy the benefits of significant configurability of software, robust functionality, and enhanced security. An on-demand model, single-tenant SaaS is best seen as a "custom fit" solution that many companies should use because their industry, geography or security requirements give them the need for configurability and customization.

On-Premise

While SaaS, and hybrid SaaS deployments for an enterprise video platform have become the preferred architecture for most enterprises today due to the many benefits for reducing load on the wide area network, reducing costs, and accelerating deployment, MediaPlatform understands that for some customers an on-premise deployment is still the only viable option for a variety of reasons, despite the higher costs associated with deploying and supporting an on-premise solution.

6. SaaS and Hybrid SaaS

6.1. Pure SaaS Peer Assist Multicasting for Live Video Streaming

MediaPlatform is the only leading enterprise video platform that can deliver a pure SaaS solution for peer assist multicast streaming of live video, that requires no client installs. This breakthrough technology makes it possible to securely reach thousands of employees with high quality video without installing anything behind the firewall.

Peer Assist Multicasting, or P2P Multicasting, is 100% browser based. It requires no client installs, and in many scenarios requires no media server behind the firewall. (We will discuss options for leveraging a media server behind the firewall to peer assist, and/or IP multicast streaming video in the Hybrid SaaS section of this technical brief.)

Peer assist multicasting delivers the media in a dynamically generated peer network topology. Optimal peering performance is accomplished by providing the recommended bandwidth overhead (approximately four times the encoded video stream). With less than this recommended overhead, the time to optimize peering may take longer. Peer assisted multicasting shares video across multiple peer connections creating a dynamic network mesh, so that there is no single point of failure. In this way P2P multicasting is self-healing, and highly resilient.
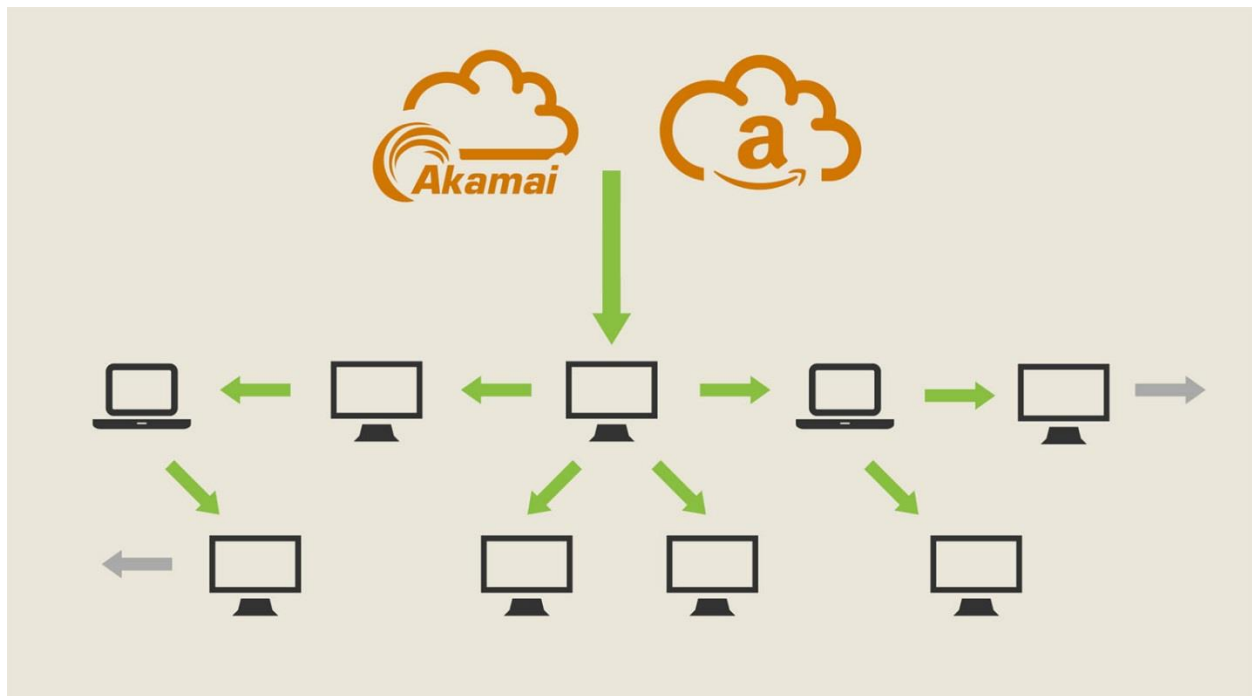
P2P multicasting also allows for the configuration of local, logical peer groups to intelligently manage how peers are formed. For example, in this way you can ensure that someone in New York isn't attempting to peer with someone in Los Angeles.

The benefits of leveraging peer assist multicasting from the cloud include all the benefits of a SaaS solution in that there is nothing to install or manage, a very low total cost of ownership (TCO), and a very rapid return on investment (ROI). Additional benefits include moving the video streaming traffic off the wide area network (WAN) and onto the cloud which minimizes network impact and eliminates the need for additional media servers or network infrastructure to support streaming.

6.1.1.   Hybrid SaaS for Live-Video Streaming

Hybrid SaaS has all the benefits of a SaaS solution, in addition to allowing enterprises to leverage a variety of solutions for delivering video across internal networks, and multiple network locations, as well as to external and mobile viewers. In the Hybrid SaaS solution model, MediaPlatform provides a live video streaming solution called Multicast Fusion, which combines IP Multicast, Peer Assist Multicast and Unicast from Cloud based CDN's into a single powerful distribution architecture that can leapfrog network barriers that used to limit the reach of video streaming in the enterprise.
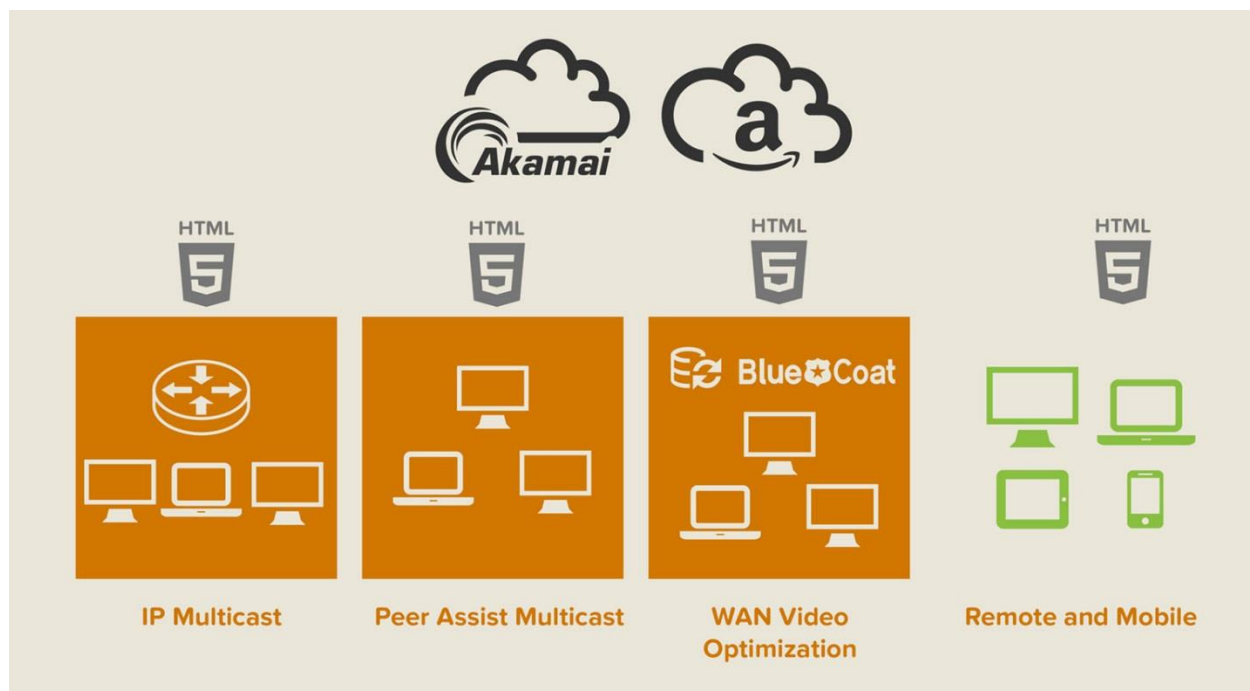
In the Hybrid SaaS model, one or more media servers are place at one or more network locations within the enterprise. Video streams can initiate from inside the network, or from the cloud, or both. Additionally, video streams can reach viewers inside and outside the network via IP Multicast, Peer Assist Multicast, or Unicast from media servers behind the firewall, as well as in the cloud. Finally cloud based CDN's like Akamai can be leveraged to reach global remote viewer audiences, and mobile devices. This means that live video streams can be initiated from any location, to viewers anywhere. It is massively scalable, and highly secure. A variety of network and security architectures, and technologies can be supported with this model. WAN Optimization, MPLS, VPN, IP Multicast, etc.

6.1.2.   Security Considerations

While many enterprises have embraced the cloud, there are still organizations that for a variety of reason have security concerns that need to be addressed before a cloud solution can be seriously considered. For this reason, MediaPlatform offers several types of cloud deployment options, integration with various enterprise single sign on protocols, secure and encrypted video streaming, and support for split tunnel VPN architectures.

Single Tenant SaaS

Single-tenant systems give a user its own database and its own instance of the software application. Placed on its own individual server or segregated via extensive security controls to create its own virtual server, users of single-tenant systems enjoy the benefits of significant configurability of software, robust functionality, and enhanced security. An on-demand model, single-tenant SaaS is best seen as a "custom fit" solution that many companies should use because their industry, geography or security requirements give them the need for configurability and customization.

It goes without saying that a single-tenant system will have a higher degree of inherent security. Having said that, multi-tenant systems are still secure, and the level of security offered by these systems may be adequate for a company's specific needs.

However, there are industries in which security protocols must not only satisfy the company's needs, but must satisfy industry, governmental and country protocols. Financial services, an industry under strict observance by regulatory agencies, might be one such industry. Pharmaceuticals might be another. Aerospace, defense, technology and other industries each have their own internal and external security requirements. So, the degree of required security will vary based on company, philosophy, geography, and other factors.

In addition to specific industries, different countries have different security protocols that must be met. The EU Safe Harbor Directive on the protection of personal data was designed to

prevent accidental information disclosure or loss. Requiring re-certification every 12 months, single-tenant systems often can best satisfy the requirements because of their ability to ensure segregation of personal data.

Virtual Private Cloud

Virtual Private Cloud (VPC) lets you provision a logically isolated section of the Cloud where you can launch resources in a virtual network that you define. You have complete control over your virtual networking environment, including selection of your own IP address range, creation of subnets, and configuration of route tables and network gateways.

You can easily customize the network configuration for your VPC. For example, you can create a public-facing subnet for your web servers that has access to the Internet and place your backend systems such as databases or application servers in a private-facing subnet with no Internet access. You can leverage multiple layers of security, including security groups and network access control lists, to help control access to instances in each subnet.

Additionally, you can create a Hardware Virtual Private Network (VPN) connection between your corporate datacenter and your VPC and leverage the cloud as an extension of your corporate datacenter.

Split Tunnel VPN

Many of the benefits of a Hybrid SaaS architecture derive from the ability to leverage a distributed cloud architecture to stream video to various remote viewers or network locations, which alleviates the load on the WAN and avoids bottle necks at VPN concentrators. One of the ways to do this is to allow remote network locations to split tunnel and pull a video stream from a cloud-based media server. MediaPlatform supports this architecture, and allows the implementation of Peer Assist multicasting, often without the need to install on-site media servers at these remote locations.

Split tunneling is a computer networking concept which allows a VPN user to access a public network (e.g., the Internet) and a local LAN or WAN at the same time, using the same physical network connection. This connection service is usually facilitated through a program such as a VPN client software application.

The user with split tunneling enabled can connect to file servers, database servers, mail servers and other servers on the corporate network through the VPN connection. When the user connects to MediaPlatform in the cloud to stream video, the connection request goes directly out the gateway provided by the network.

One advantage of using split tunneling is that it alleviates bottlenecks and conserves bandwidth as video traffic does not have to pass through the VPN server.
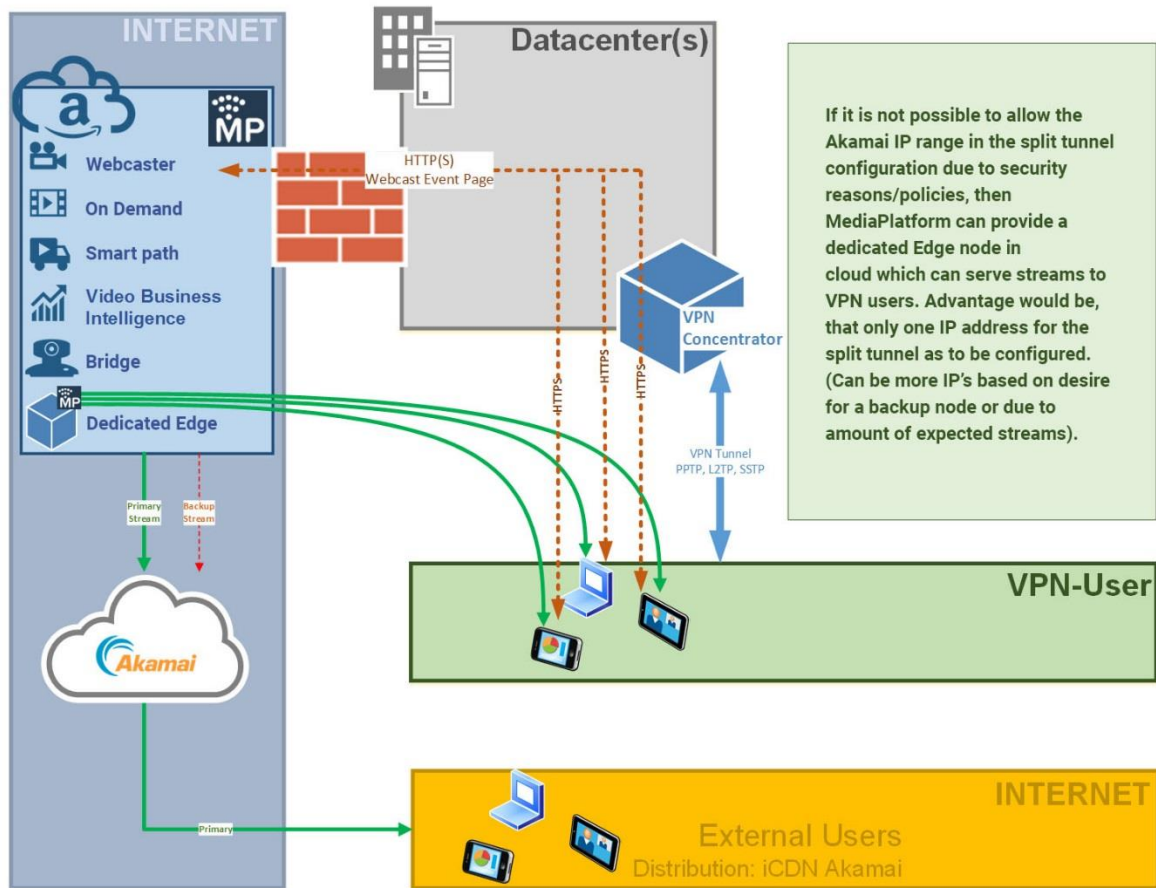
Another advantage is in the case where a user works at a supplier or partner site and needs access to network resources on both networks throughout the day. Split tunneling prevents the user from having to continually connect and disconnect.

A disadvantage is that when split tunneling is enabled, users bypass gateway level security that might be in place within the company infrastructure. For example, if web or content filtering is in place, this is something usually controlled at a gateway level, not the client PC.

There are many variants of split tunneling that attempt to address this fundamental trust issue. Often when plain split tunneling is enabled, datagrams by default will go out the local network interface's default gateway. Only datagrams that are destined for IP networks behind the VPN terminator will go through the tunnel. This violates the principle of least privilege if a user does not absolutely require access to the entire Internet.
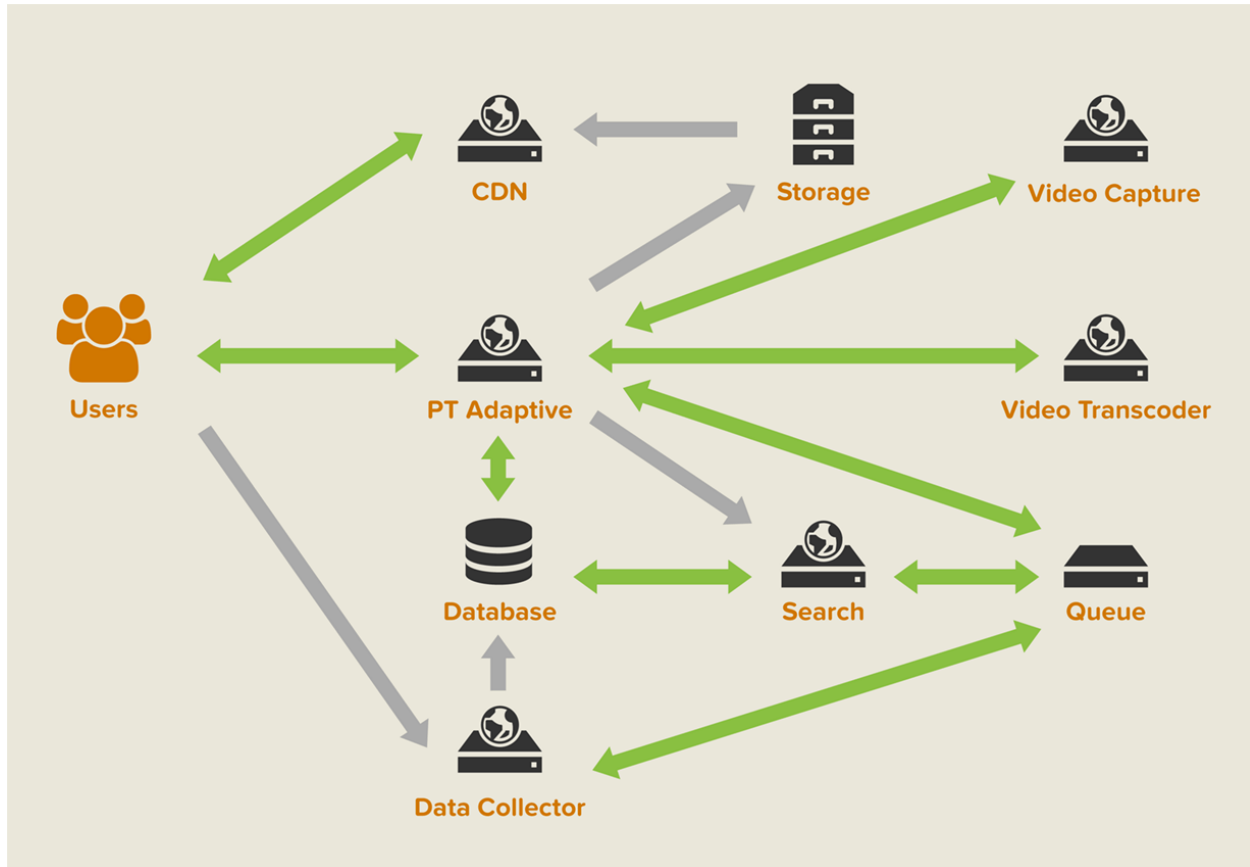
One variant to consider for solving this problem is Inverse Split Tunneling. By default, all datagrams enter the tunnel except those destination IPs explicitly allowed by VPN gateway. The criteria for allowing datagrams to exit the local network interface (outside the tunnel) may vary from vendor to vendor (i.e. port, service, etc.) This keeps control of network gateways to a centralized policy device such as the VPN terminator. This can be augmented by endpoint policy enforcement technologies such as an interface firewall on the endpoint device's network interface driver, group policy object or anti-malware agent. This is related in many ways to network access control (NAC).

If, due to security policies, it is not possible to use the external CDN (Akamai) outside the tunnel for receiving the live-stream, then MediaPlatform can provide one or more dedicated Edge node(s) in the cloud (hosted by MediaPlatform). Benefit is, that only one or a few IP addresses must be allowed in the split tunnel access list.

INTERNET

- Webcaster
- On Demand
- Smart path
- Video Business Intelligence
- Bridge
- Dedicated Edge

Primary Stream   Backup Stream

Datacenter(s)

HTTP(S) Webcast Event Page

HTTPS   HTTPS   HTTPS

VPN Concentrator

VPN Tunnel
PPTP, L2TP, SSTP

If it is not possible to allow the Akamai IP range in the split tunnel configuration due to security reasons/policies, then MediaPlatform can provide a dedicated Edge node in cloud which can serve streams to VPN users. Advantage would be, that only one IP address for the split tunnel as to be configured. (Can be more IP's based on desire for a backup node or due to amount of expected streams).

VPN-User

Primary

INTERNET

External Users
Distribution: iCDN Akamai

6.2. On-Premises

6.2.1. On Demand On-Premises Architecture

On Demand is composed of the following components:

1. Content Delivery Network (CDN) – Serves video content and supporting files
2. PT Adaptive – Web application for managing video content and access control
3. Database – Stores application information for users, access control, asset metadata, etc.
4. Data Collector – Collects stats on video content access from PT Adaptive user interface
5. Search – Provides asset search capabilities
6. Video Capture – Allows capture of video from a user's web camera from PT Adaptive user interface
7. Video Transcoder – Provides encoding services to transcode video content into multiple formats
8. Queue – Facilitates communication between components and asynchronous processing

### 6.2.2. Webcaster On-Premises Architecture
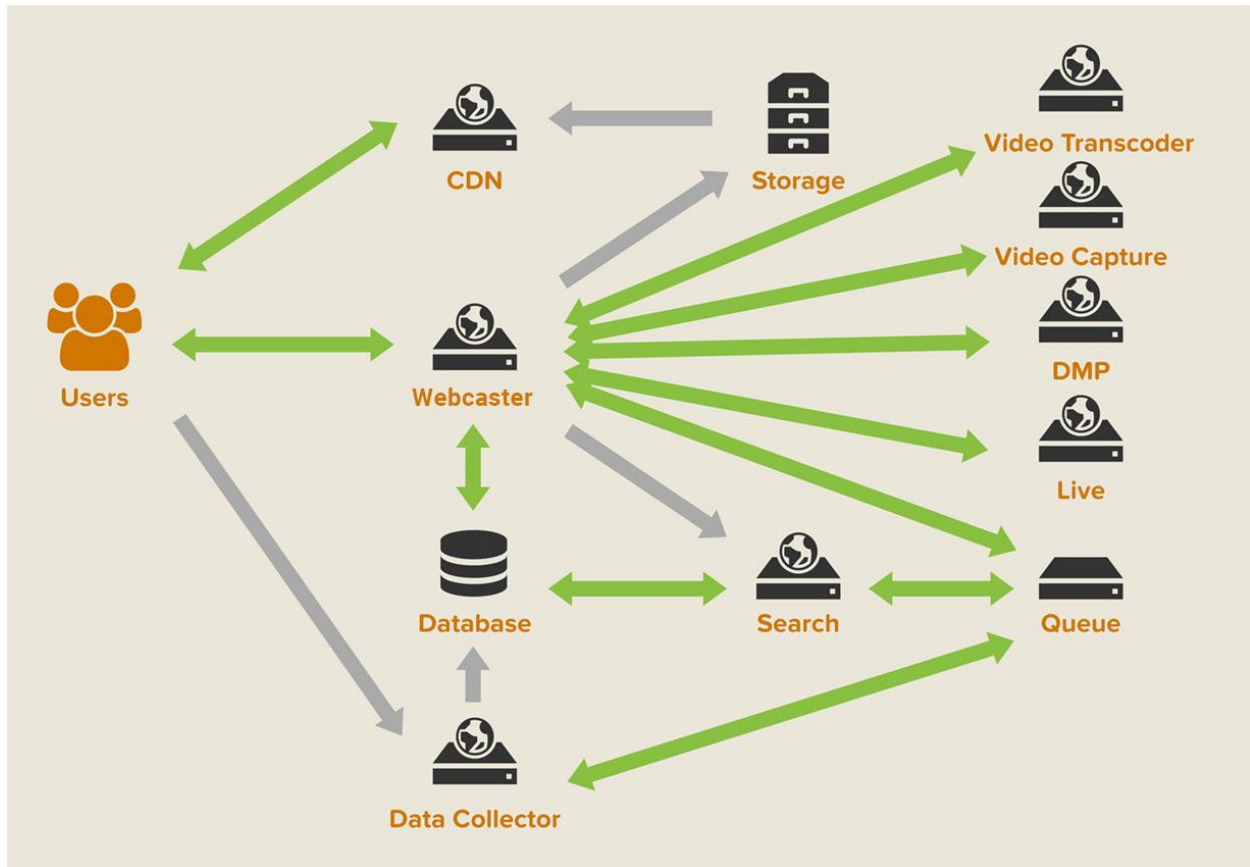
Webcaster is composed of the following components:

1. Content Delivery Network (CDN) – Serves video content and supporting files
2. Webcaster – Web application for managing webcasts and access control
3. Database – Stores application information for users, access control, asset metadata, etc.
4. Data Collector – Collects stats on video content access from Webcaster streams
5. Search – Provides asset search capabilities
6. Video Transcoder – Provides encoding services to transcode video content into multiple formats
7. Video Capture – Allows capture of video from source
8. Queue – Facilitates communication between components and asynchronous processing
9. Live – provides instant access to live components
10. DMP – PowerPoint on Windows exports slides, allowing them to be viewed as part of webcast
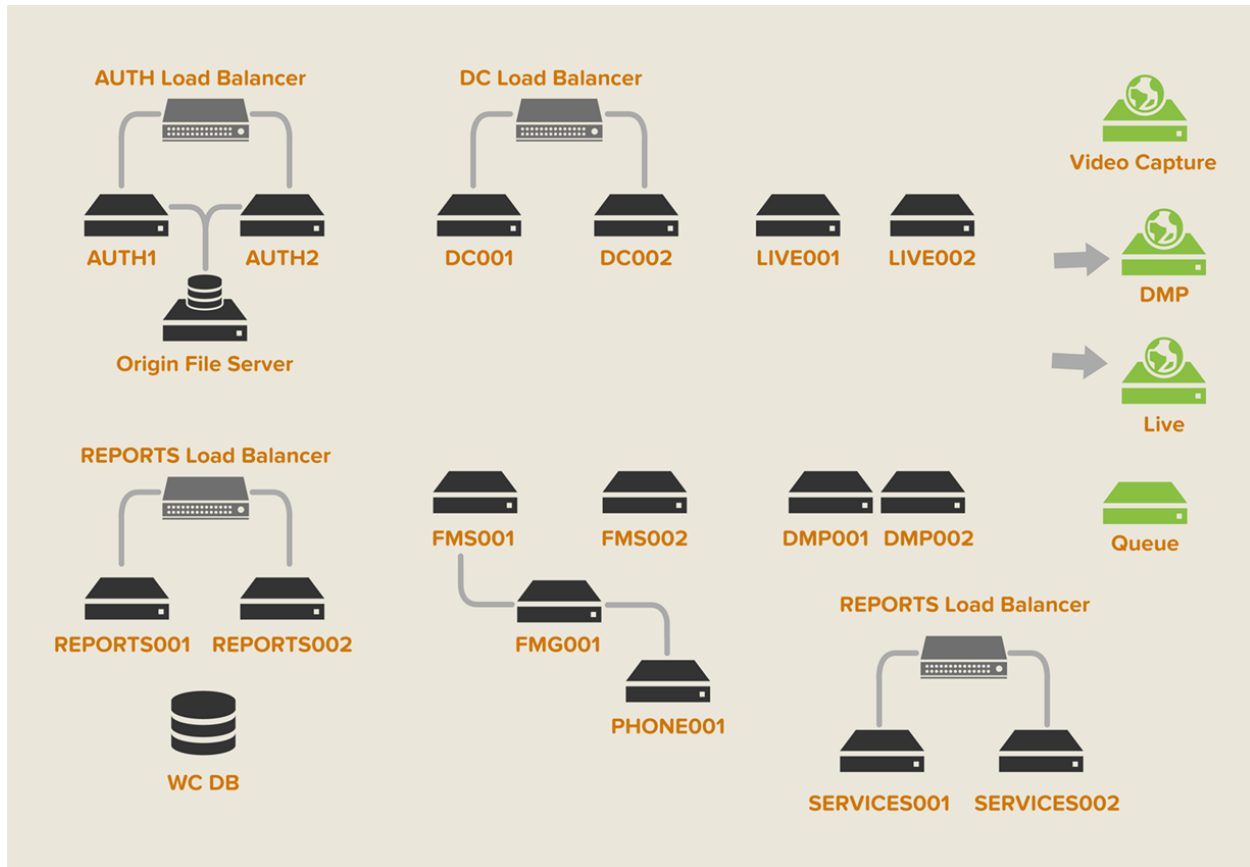
6.2.3.   Load Balancers

It is extremely important to note here that a critical piece of the MediaPlatform on-premises architecture is adequate load balancing of critical systems. These diagrams show a high-level view of load balance architecture for both Webcaster, On Demand and SSO.
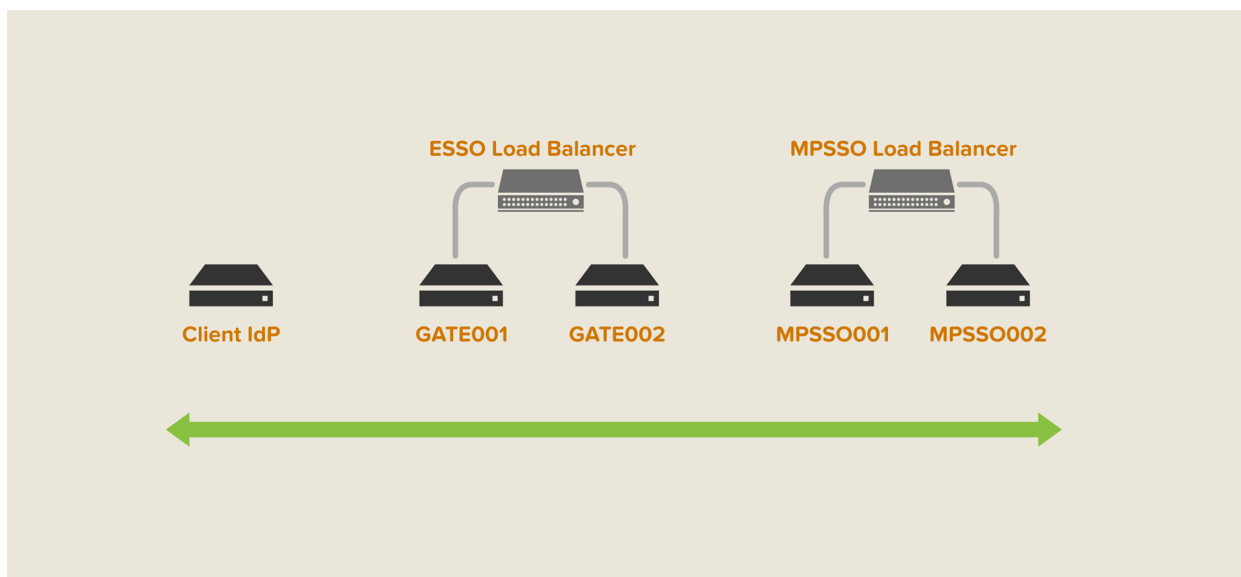
6.2.4.   On Demand Load Balance Architecture
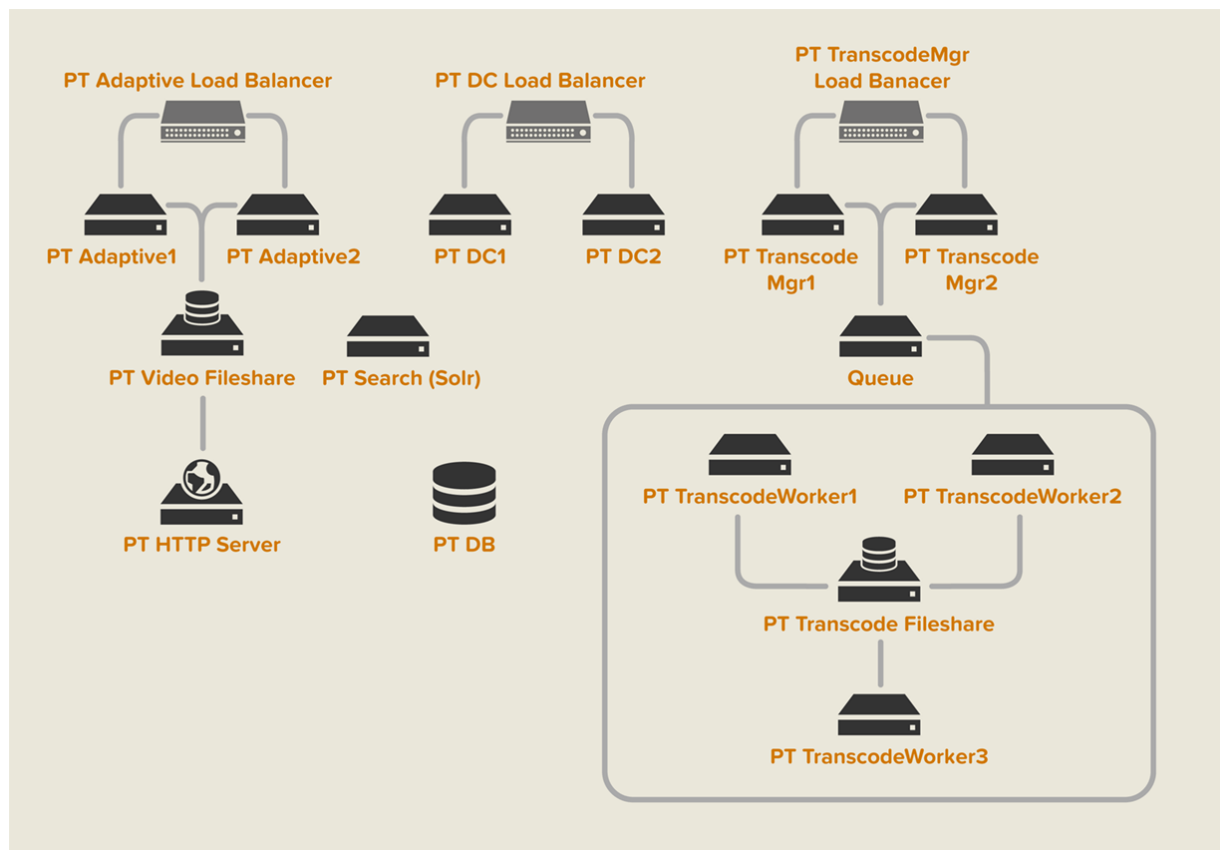
6.2.5. Webcaster Load Balance Architecture

6.2.6. SSO Load Balance Architecture

6.2.7.   Enterprise Single Sign On

Once the MediaPlatform software is installed as virtual machines, enterprise single sign on can be implemented by integrating with the enterprise authentication platform. MediaPlatform supports integration with Active Directory, LDAP and SAML.

6.2.8.   Virtual Machine Requirements

Virtual Machine Compatibility
MediaPlatform's virtual machines comply with and support ESX 5.

Networking and Server Requirements
The networking and server requirements include:
- Static IP addresses (or statically assigned DHCP addresses which do not change)
- NFS Storage
- Each host must be in the DNS
- Customer generated SSL certificates if required

Servers
Production/Pilot Installation

The following is a list of servers in a typical MediaPlatform production and pilot installation. The number of actual servers may vary based on the client's scalability and redundancy requirements.

Server type details:
- Adobe Media Server: Media server that accepts encoder streams and produces various output formats (e.g. multicast, HDS, RTMP, etc.)
- WC Auth: core Webcaster service responsible for performing most of the event creation, event management logic
- WC DC: Webcaster data collector machines collecting basic stats from viewers
- WC Reports: Webcaster service responsible for reports generation
- WC Live: service responsible for synchronizing event producer communication
- WC DMP: service responsible for PPT and Webex file conversion
- Origin servers: web servers serving up static contents
- DB servers: containing the core Webcaster and On Demand databases
- Edge: smart stream distribution servers for HDS/HLS traffic
- Shared Network Storage: network storage containing directories and files that need to be accessed from multiple server types

- Load balancer: needed when using 2+ servers for a server type (i.e. all typical production setup)
- Transcode Manager: service responsible for distribution transcode jobs to transcode workers
- Transcode Worker: service responsible for transcoding video files to different formats
- PT App Server: service performing most On Demand application logic
- PT Data Collector: service collecting real-time viewer stats
- PT Zookeeper: arbitration servers for the Queue service
- PT Search: service performing the search feature within On Demand
- Redis: Data caching service
- Queue: service maintaining various internal application queues
- MPSSO: internal single-sign-on service used by internal services
- ESSO: external single-sign-on service for end-users

MediaPlatform provides:
- VMware Ubuntu 12.04 base image with Puppet client pre-installed (referred to as 'ubuntu image' from now on)
- VMware RedHat 6.7 base image with Puppet client pre-installed (referred to as 'redhat image' from now on)
- VMware Windows Server 2012 base image with Puppet client pre-installed (referred to as 'windows image' from now on)

Puppet Install requirements:
(Not required, but highly recommended for ease of setup and maintenance)

- Allow outbound connections to ext-puppetmaster.mediaplatform.com TCP:8140
- Allow outbound connections to ext-repo.mediaplatform.com TCP:80 and TCP:443
- Allow SSH access for MediaPlatform Professional Services to the Ubuntu and RedHat virtual machines
- Allow RDP access for MediaPlatform Professional Services to the Windows Server virtual machine

Application	Adobe Media Server	WC AUTH/Data Collector/Reports/Live	WC DMP
Production QTY:	2	2+	2+
OS	Linux 64-bit	Linux 64-bit	Windows Server 2008 R2 or 2012 64-bit
Client (audience) facing?	Y	N	N
CPU [speed X cores]	4 CPU Cores	4 CPU Cores	2 CPU Cores
RAM/Disk Space	16GB of Memory 500GB+ of Disk Space	4GB of Memory 100GB of Disk Space	8GB of Memory 100GB of Disk Space
Software	Adobe Media Server 5, JDK6+, Tomcat 6+	JDK7, Tomcat 6	JDK7, Tomcat 6, PowerPoint
Network	1 Gbps NIC or 10 Gbps	1 Gigabit Ethernet NIC or better	1 Gigabit Ethernet NIC or better
Ports	Ports: 1935 TCP+UDP, 80 TCP, 443 TCP, 1111 TCP, 22 TCP	TCP: 22, 80, 443, 3389	80 TCP, 443 TCP, 22 TCP

Application	Origin Server	DB Server	Shared Network Storage	Load Balancer
Production QTY:	2+	2	0	0
Notes			Not a server, but existing NAS storage.	Needed for redundant setup only.
OS	Linux 64-bit	Linux 64-bit	NAS or SAN	/
Client (audience) facing?	Y	N	N	Y
CPU [speed X cores]	4 CPU Cores	4 CPU Cores	/	/
RAM/Disk Space	8GB of Memory	8GB of Memory	/	/
	100GB of Disk Space	100GB of Disk Space	1 TB Disk Space	/
Software	Apache HTTP Server 2.2+	MySQL 5	/	/
Network	1 Gbps NIC or 10 Gbps	1 Gbps NIC or 10 Gbps	1 Gbps NIC or 10 Gbps	1 Gbps NIC or 10 Gbps
Ports	80 TCP, 443 TCP, 22 TCP	3306 TCP, 22	/	/

Application	PT Data Collector & Application Server	Zookeeper	PT Search
Production QTY:	2+	Needs 3 instances, but can be stacked on other machines	2+
OS	Linux 64-bit	Linux 64-bit	Linux 64-bit
Client (audience) facing?	Y	N	N
CPU [speed X cores]	4 CPU Cores	2 CPU Cores	2 CPU Cores
RAM/Disk Space	4GB of Memory 100GB of Disk Space	4GB of Memory	8GB of Memory 100GB of Disk Space
Software	Apache HTTP Server, JDK6+, Tomcat 6+	JDK6+, Zookeeper	JDK6+, Tomcat 6+
Network	1 Gigabit Ethernet NIC or better	1 Gigabit Ethernet NIC or better	1 Gigabit Ethernet NIC or better
Ports	80 TCP+UDP, 443 TCP, 22 TCP	2181 TCP, 2888 TCP, 3888 TCP, 22 TCP	80 TCP+UDP, 443 TCP, 22 TCP

Application	Redis	Queue	Transcode Worker & Manager
Production QTY:	1	2	2+
OS	Linux 64-bit	Linux 64-bit	Linux 64-bit
Client (audience) facing?	N	N	N
CPU [speed X cores]	2 CPU Cores	4 CPU Cores	4 CPU Cores
RAM/Disk Space	8GB of Memory 100GB of Disk Space	4GB of Memory	8GB of Memory 500GB of Disk Space
Software	Redis	JDK6, ActiveMQ	Apache HTTP Server, JDK6+, Tomcat 6+
Network	1 Gigabit Ethernet NIC or better	1 Gigabit Ethernet NIC or better	1 Gigabit Ethernet NIC or better
Ports	6379 TCP, 10050 TCP, 10051 TCP, 6380 TCP, 22 TCP	8161 TCP, 61616 TCP	80 TCP, 443 TCP, 22 TCP

Application	MPSSO	ESSO
Production QTY:	2+	2+
OS	Linux 64-bit	Linux 64-bit
Client (audience) facing?	Y	Y
CPU [speed X cores]	4 CPU Cores	4 CPU Cores
RAM/Disk Space	4 GB of Memory 100GB of Disk Space	4 GB of Memory 100GB of Disk Space
Software	Apache HTTP Server, JDK6+, Tomcat 6+	Apache HTTP Server 2.2+, PHP
Network	1 Gigabit Ethernet NIC or better	1 Gigabit Ethernet NIC or better
Ports	80 TCP+UDP, 443 TCP, 22 TCP	80 TCP+UDP, 443 TCP, 22 TCP

6.2.9. MediaPlatform Smartpath Set Up

The final step in implementing MediaPlatform On-Premises is configuring MediaPlatform Smartpath, by defining the rule sets that govern the distribution profiles for live video streaming.

7. Network requirements (Pure SaaS & Hybrid)

7.1. Hybrid Server Requirements and Configuration

Setting up a Hybrid Media Server (Adobe Media Server)

Often customer would like to use our software in the Cloud but also have requirements that require some media servers to be set up on-site. The most common requirements are:

1. The need to use IP-multicast. IP-multicast streams must be generated behind the corporate firewall as they cannot traverse the internet.
2. The need to use p2p-multicast and their firewall is not p2p friendly and they cannot change this.
3. Pure Unicast from a CDN may saturate the corporate internet connection so the hybrid server will be used to receive a stream from the internet and then generate unicast streams for the internal viewers.

Setting up a hybrid server to address the above needs is straight forward.
The hardware required to run the software will need to meet the following minimum specs:

OS requirements

- Preferred:
  - Centos/RedHat Linux 6.8 64-bit
  - Optional (additional restrictions and added costs might apply):
  - Windows 2008 Server or later 64-bit version

Minimum hardware requirements

- Standard setup
- 8 CPU cores
- 16GB RAM
- 500GB disk space
- 1Gbps NIC

7.2.   Port requirements for webcast producers and remote presenters

Open TCP port 1935 and 443 and allow persistent connections (open sockets, not http sessions)

MediaPlatform Live Servers:
174.129.247.224 (live001.mediaplatform.com)
174.129.247.190 (live002.mediaplatform.com)

The Live Servers receive the live commands that are executed by a webcast producer or remote presenter, such as flipping a slide or showing a poll question.

MediaPlatform Adobe Media Servers (FMS):
184.73.179.128 (fms001.mediaplatform.com)
174.129.197.77 (fms002.mediaplatform.com)

The commands that are sent to the Live Servers are injected into the live stream sent to the Adobe Media Server, which creates the event synch on the viewer page. It is therefore essential that all remote presenters be able to connect to both the Live Servers and the Adobe Media Servers.

When a user loads the "Present" tab of a Webcaster project, the interface will try to connect to both the Live Servers and the FMS. The same thing happens if a "Presenter Control" interface is loaded by a remote presenter who may be pushing slides during the event.

The Producer or Remote Presenter will also need Flash Player 10.2 or later installed on his computer that is running the presenter interface. Here is a link to a system tester that will try to make all the required connections as detailed above for a presenter:

http://diagnostics.mediaplatform.com/presenter.html

Please note that this system tester includes a test of Java – this is only important if the Remote Presenter intends to use the screen casting functionality to broadcast his computer screen during an event.

Video Encoder Port Requirements

Source	Destination	Destination FQDN	Protocol	Port
<Encoder IP address>	184.73.179.128	fms001.mediaplatform.com	TCP	1935
<Encoder IP address>	174.129.197.77	fms002.mediaplatform.com	TCP	1935

7.3. Requirements for Viewers

Webcaster

MediaPlatform Unified Video Player is an embeddable media player used by MediaPlatform. It utilizes both HTML5 <video> and Adobe's Flash plugin as needed as the underlying browser technologies for playback. It has very robust support for mobile and desktop browsers and media formats including the ability to deliver video to the desktop without the use of the Flash Plugin (i.e. - using HTML5 Video). It is designed to support its full-feature set on the most popular browser and devices independent of the underlying player that is used. In fact, the underlying player that is used is completely transparent to the user. This document spells out which browsers and devices are supported and any limitations they may have. It also discusses differences between desktop and mobile.

Streaming Protocol Support Matrix

A few things to note about the following support matrix:

1. HLS uses HTML5 Video (no Flash Plugin)
2. HDS and RTMP use the Flash Plugin
3. Operating Systems tested are Windows 7+ and OSX. Note that some browsers are not available on some operating systems.

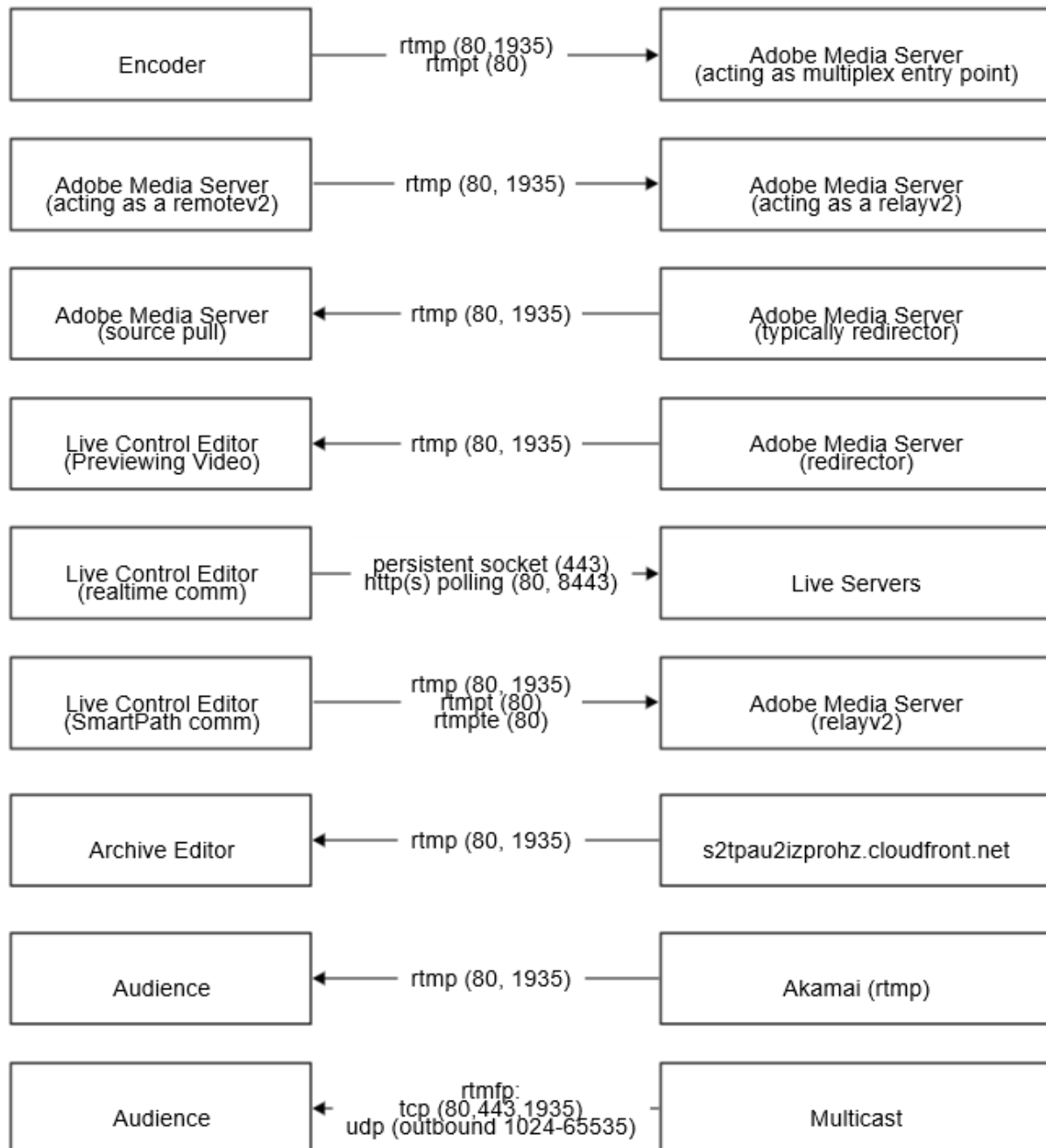| Browser	HLS	HDS	RTMP[1]
Chrome Desktop	✅	✅	✅
Chrome Mobile	✅	❌	❌
Firefox Desktop	✅	✅	✅
Safari Desktop	✅	✅	✅
Safari Mobile	✅	❌	❌
MS Edge	✅	✅	✅
Internet Explorer 11	✅ [2]	✅	✅
Internet Explorer 10	❌	✅	✅

[1] RTMP and its variations (RTMFP, RTMPT, etc.)

[2] HLS is not supported in IE11/Windows 7

WebCaster Communication Considerations

This list shows all of the potentially blocked communication paths
in a typical cloud or hybrid Webcaster configuration.
It does not show communication paths that use standard HTTP(S) over 80, 443
(as these are essentially never blocked).

| Encoder | rtmp (80,1935)
rtmpt (80) → | Adobe Media Server
(acting as multiplex entry point) |

| Adobe Media Server
(acting as a remotev2) | rtmp (80, 1935) → | Adobe Media Server
(acting as a relayv2) |

| Adobe Media Server
(source pull) | ← rtmp (80, 1935) | Adobe Media Server
(typically redirector) |

| Live Control Editor
(Previewing Video) | ← rtmp (80, 1935) | Adobe Media Server
(redirector) |

| Live Control Editor
(realtime comm) | persistent socket (443)
http(s) polling (80, 8443) → | Live Servers |

| Live Control Editor
(SmartPath comm) | rtmp (80, 1935)
rtmpt (80)
rtmpte (80) → | Adobe Media Server
(relayv2) |

| Archive Editor | ← rtmp (80, 1935) | s2tpau2izprohz.cloudfront.net |

| Audience | ← rtmp (80, 1935) | Akamai (rtmp) |

| Audience | rtmfp:
← tcp (80,443,1935)
udp (outbound 1024-65535) | Multicast |

7.4. Authentication - SAML Integration Overview

Security Assertion Markup Language (SAML) Overview:

Security Assertion Markup Language (SAML) is an XML-based open standard data format for exchanging authentication and authorization data between parties particularly between an identity provider and a service provider.

The largest issue that SAML overcomes is the issue of single sign on in web browser sessions between applications provided by the service provider and identity provider. Simply put, SAML allows the user to sign into one environment, that is managed and maintained by the identity provider and seamlessly access the service provider's web application.

In the case of MediaPlatform, the client employee signs into their employer's corporate network, the corporate network authenticates the employee and reports back to MediaPlatform that the employee is authenticated (or not) and what portions of the MediaPlatform the employee can access. The beauty of SAML is that authentication is all controlled by the MediaPlatform client, MediaPlatform has no access to the employee's username and password, and the MediaPlatform client only provides to MediaPlatform the minimum amount of information required to allow the client's goal with the MediaPlatform application.

Setting up SAML in the MediaPlatform Environment:

Setting up SAML is usually done as a two-step process. The first is to set up things in a staging/QA environment for testing and the second is set up in production. That may vary depending on what the client needs actually are on a short and long-term basis - i.e. we might skip integrating in stage/QA if there is extreme time pressure and the integration is very limited, if the client doesn't have a stage/QA environment or if the integration is just for a webcast so there isn't a need for ongoing stage/QA.

SP vs IdP:

MediaPlatform's system can be configured to work with either SP or IdP initiated sign on. Generally, MediaPlatform recommends SP. This recommendation is made because MediaPlatform's client often will distribute direct links to webcasts or video assets. If users are not signed into the corporate network when they click on the direct links the user will not be allowed access to the content and will be presented with an error. The error is generated because the sign on must be initiated from the client side. With an SP sign on, if a direct link it presented to a user and the user is not signed in to the corporate network the user will be redirected over to the client network sign on page rather than being presented with an error.

Attributes to pass:

Minimum attributes required by MediaPlatform are:
First name
Last name
Email address

Other attributes might be useful also, depending on what the client would like for reporting and channel or content access. For example - does the client want the office location reported back for viewers watching a Webcaster event, does the client want to limit or customize event or channel access by job description (i.e. only users who are manager and above can view a certain webcast, but all employees could view another, OR if also using the On Demand portal, Executives can access the Executive channel, contractors can access the "help" channel, etc.

MediaPlatform service URLs:

https://gate.mediaplatformstg.com (Pre-production)
https://gate.mediaplatform.com (Production)

Integration process:

1. The client enters the MediaPlatform service URL into their SAML software and uses that address to generate an XML metadata file.
2. The client sends MediaPlatform the metadata.
3. MediaPlatform loads the client and we will load that metadata into the MediaPlatform SAML software.
4. MediaPlatform will then generate a MediaPlatform metadata file.
5. MediaPlatform will send the MediaPlatform metadata file to the client.
6. The client will load the MediaPlatform meta data into the client SAML software.

Testing:

After the integration steps have been finished the MediaPlatform and client SAML software and servers will be able to communicate successfully. This communication will be verified by running a test from the MediaPlatform SAML server. This test will also allow for the verification that the correct attributes are being passed from server to server.

After Testing:

Upon completion of the testing process, the MediaPlatform applications will be configured to work with the SAML sign on implementation. Configuration of the MediaPlatform applications may include enabling SAML sign on for the web portal; enabling SAML access to Webcaster and Webcaster events; and setting up channel governance rules based on SAML attributes

Enterprise SSO
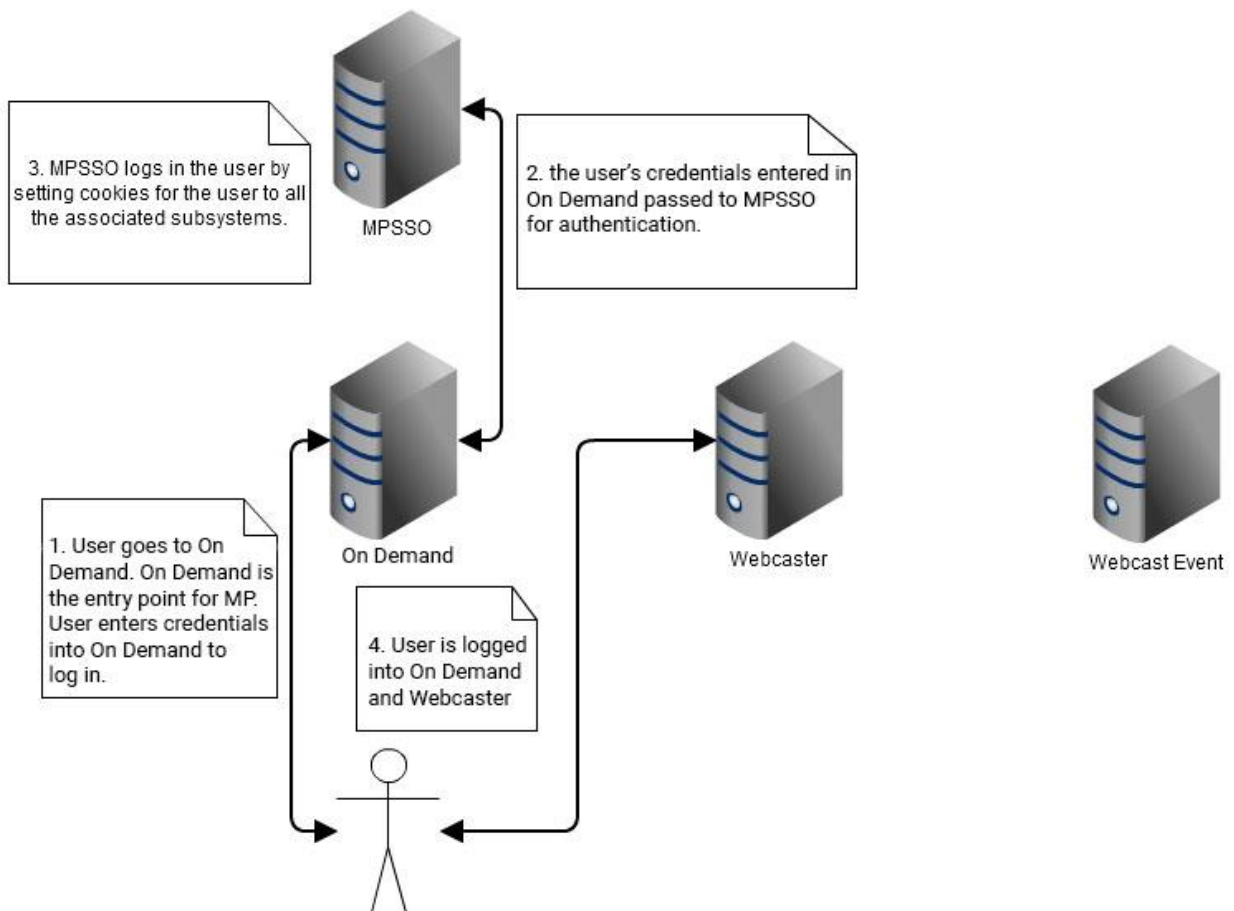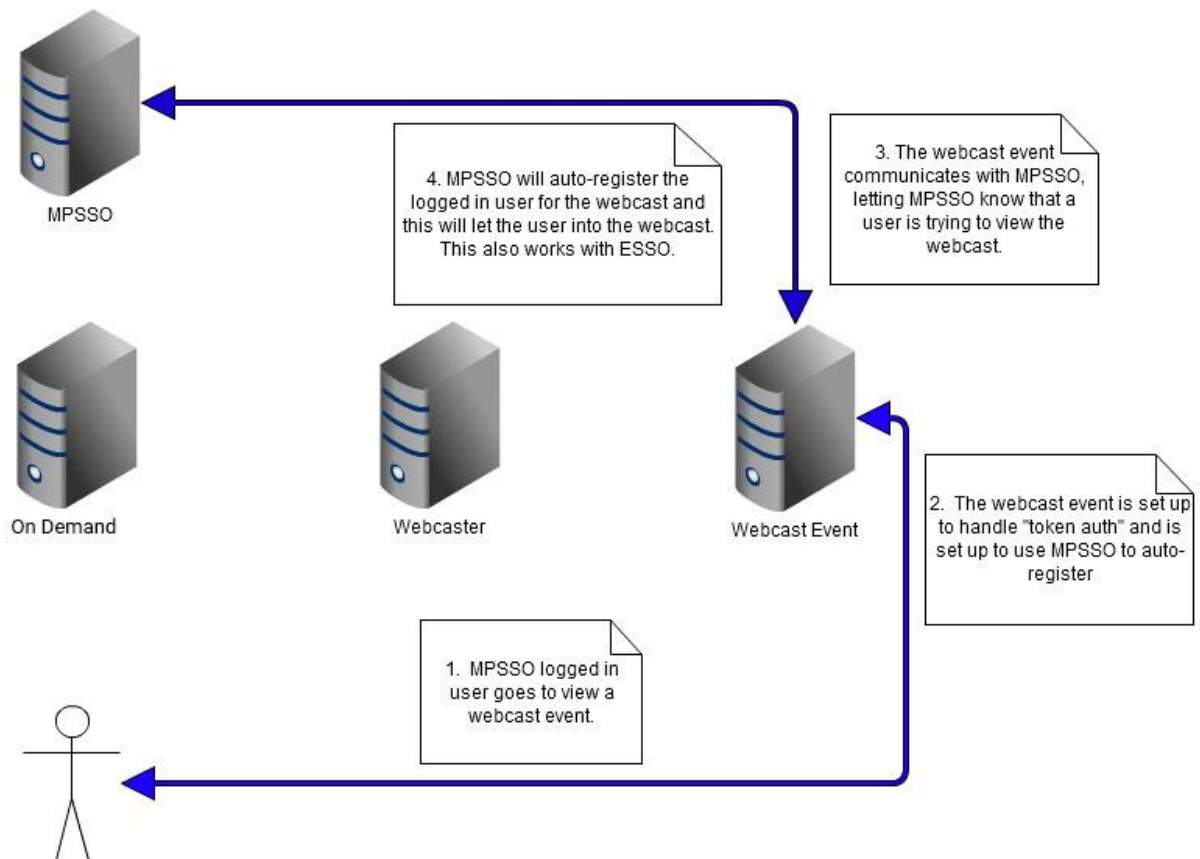**SAML Authentication Process – Credentials Entered on Enterprise Server**
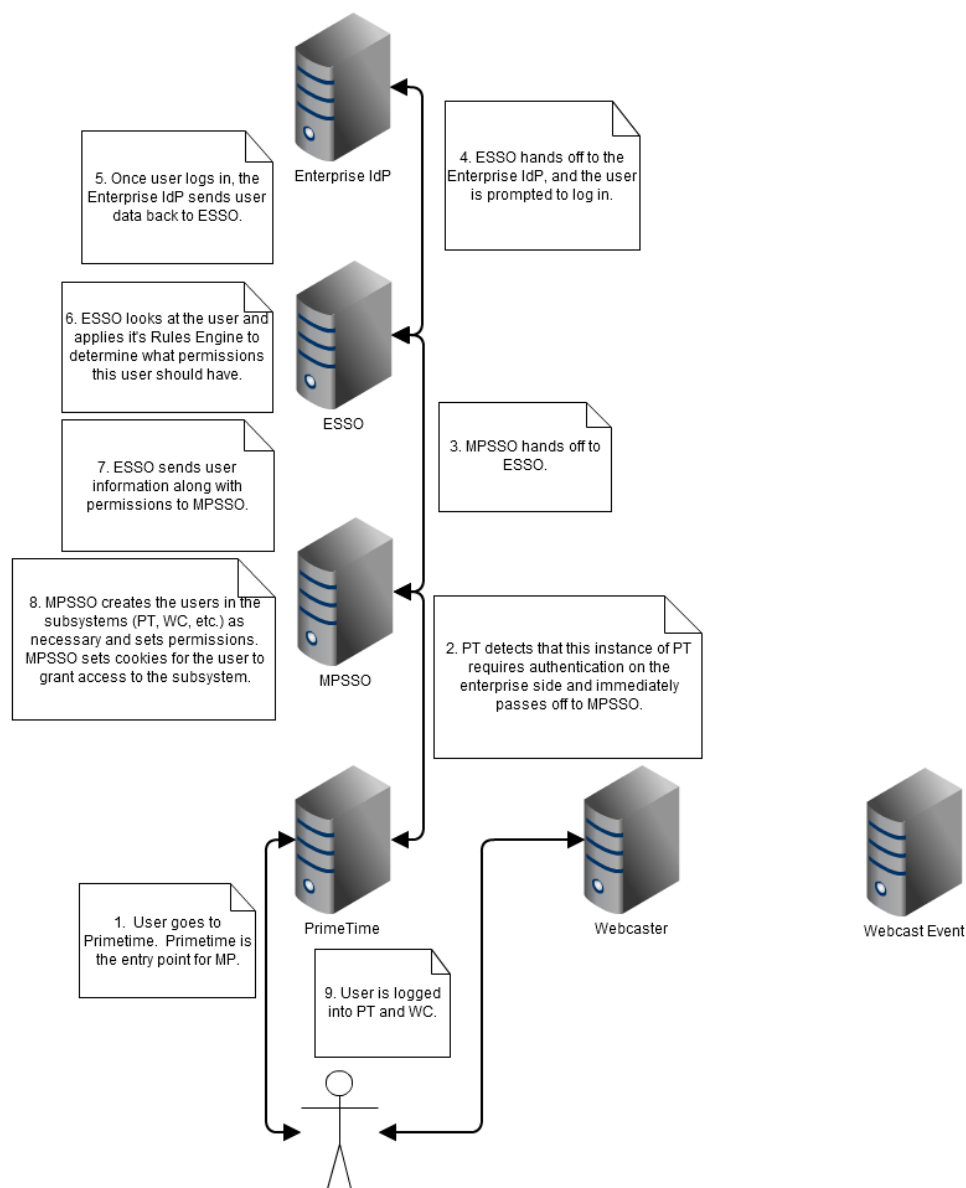
MPSSO is Defined by the Following Relationship Model
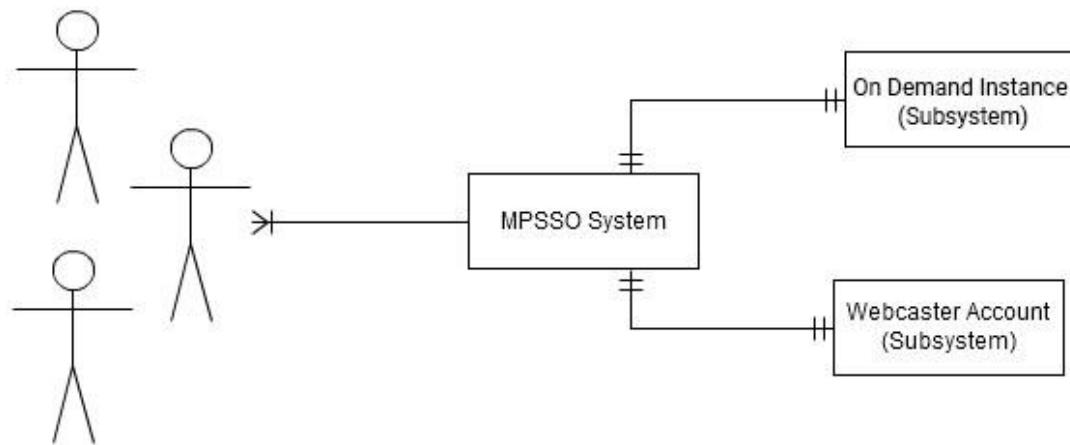
Workflow for a User Logging into an MPSSO System

Webcast Event Auto Registration with MPSSO and ESSO

MPSSO

On Demand

Webcaster

Webcast Event

4. MPSSO will auto-register the logged in user for the webcast and this will let the user into the webcast. This also works with ESSO.

3. The webcast event communicates with MPSSO, letting MPSSO know that a user is trying to view the webcast.

2. The webcast event is set up to handle "token auth" and is set up to use MPSSO to auto-register

1. MPSSO logged in user goes to view a webcast event.

8. Different Audience Use Cases

Webcast – Internal Audience Only
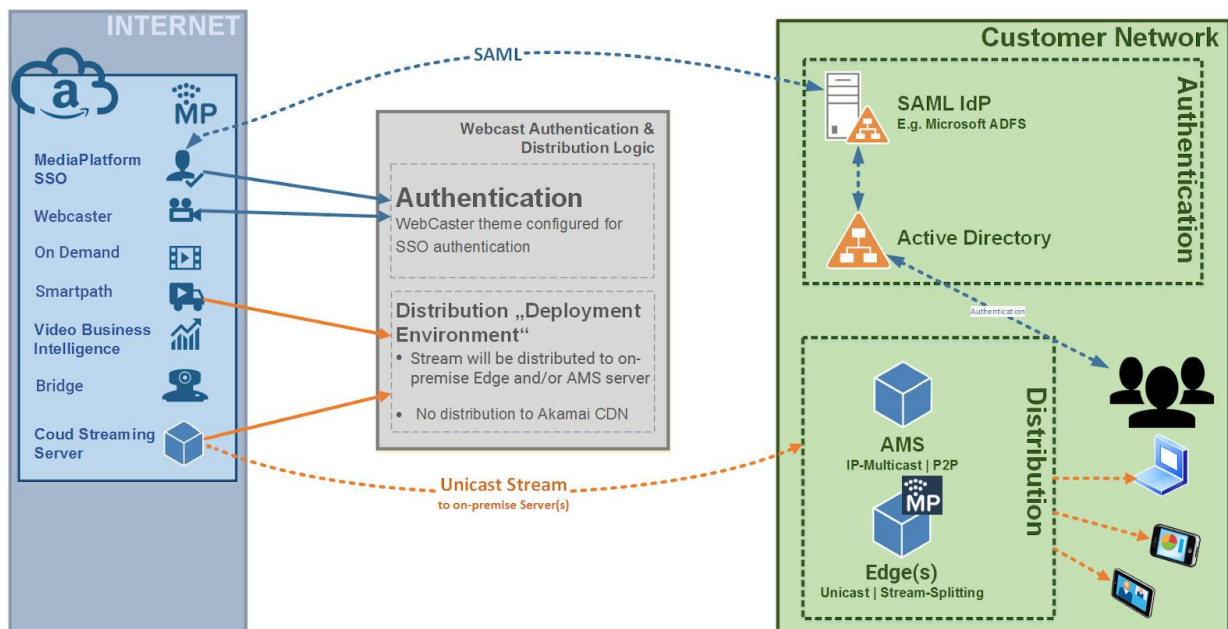
Webcast – External Audience
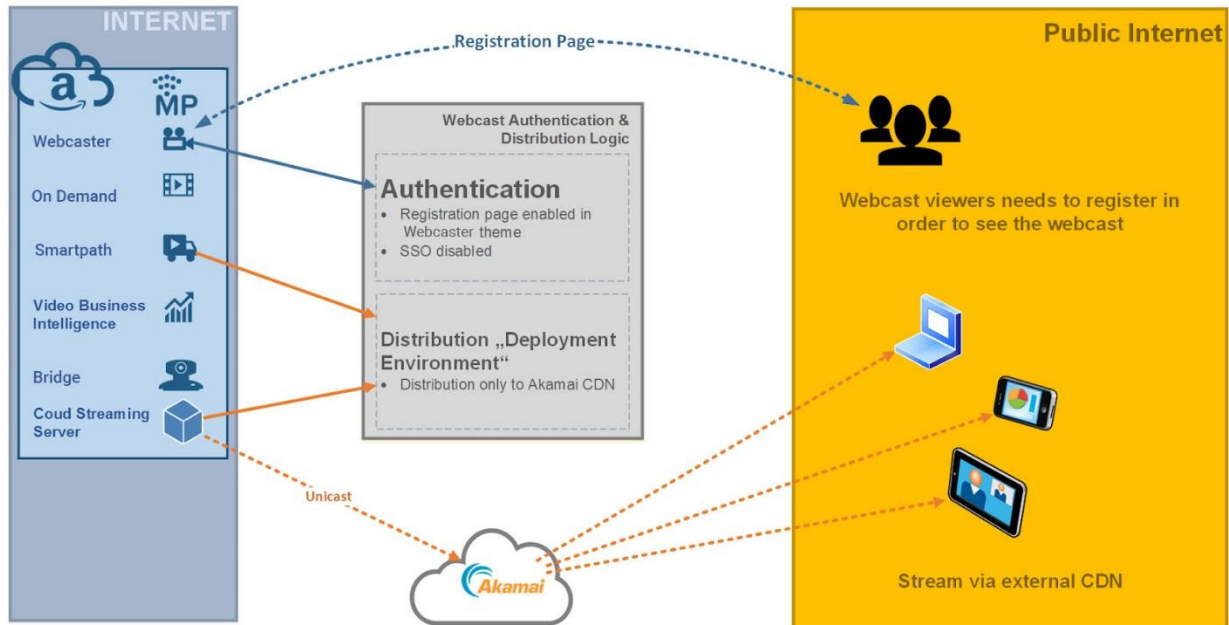
Webcast – Internal + External Audience
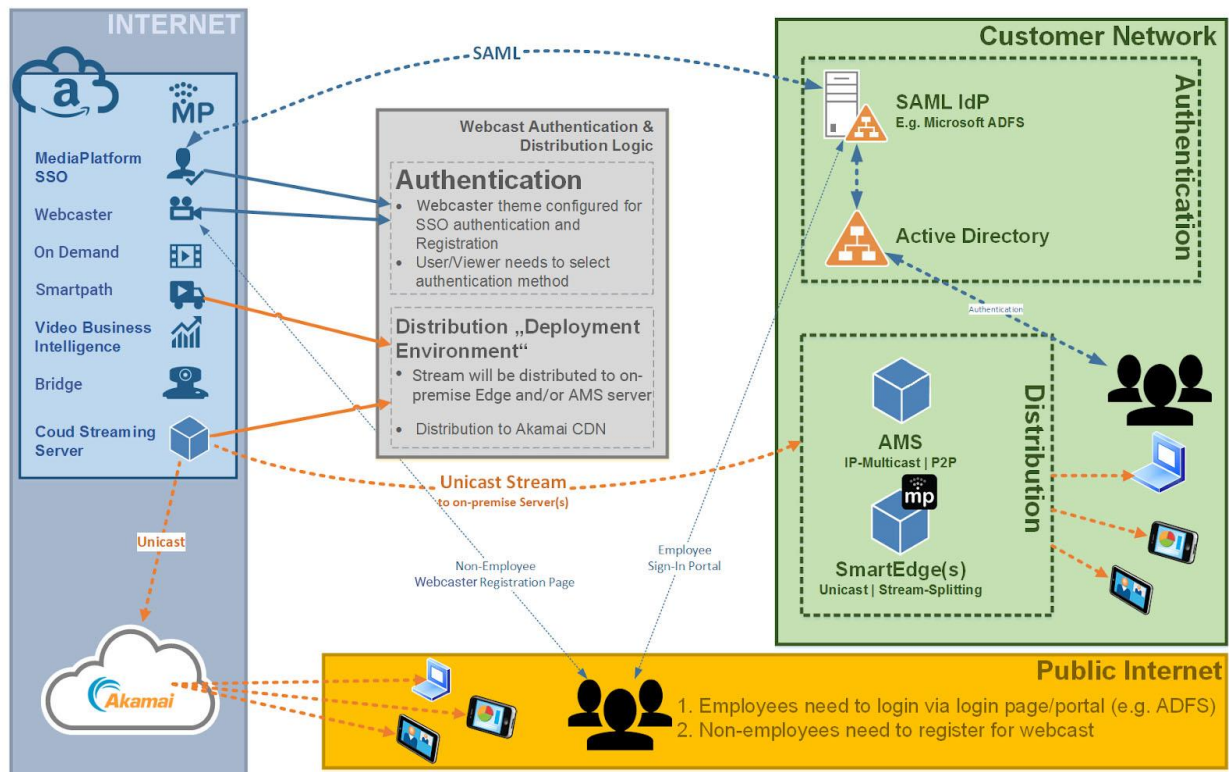
9. Distribution Solutions
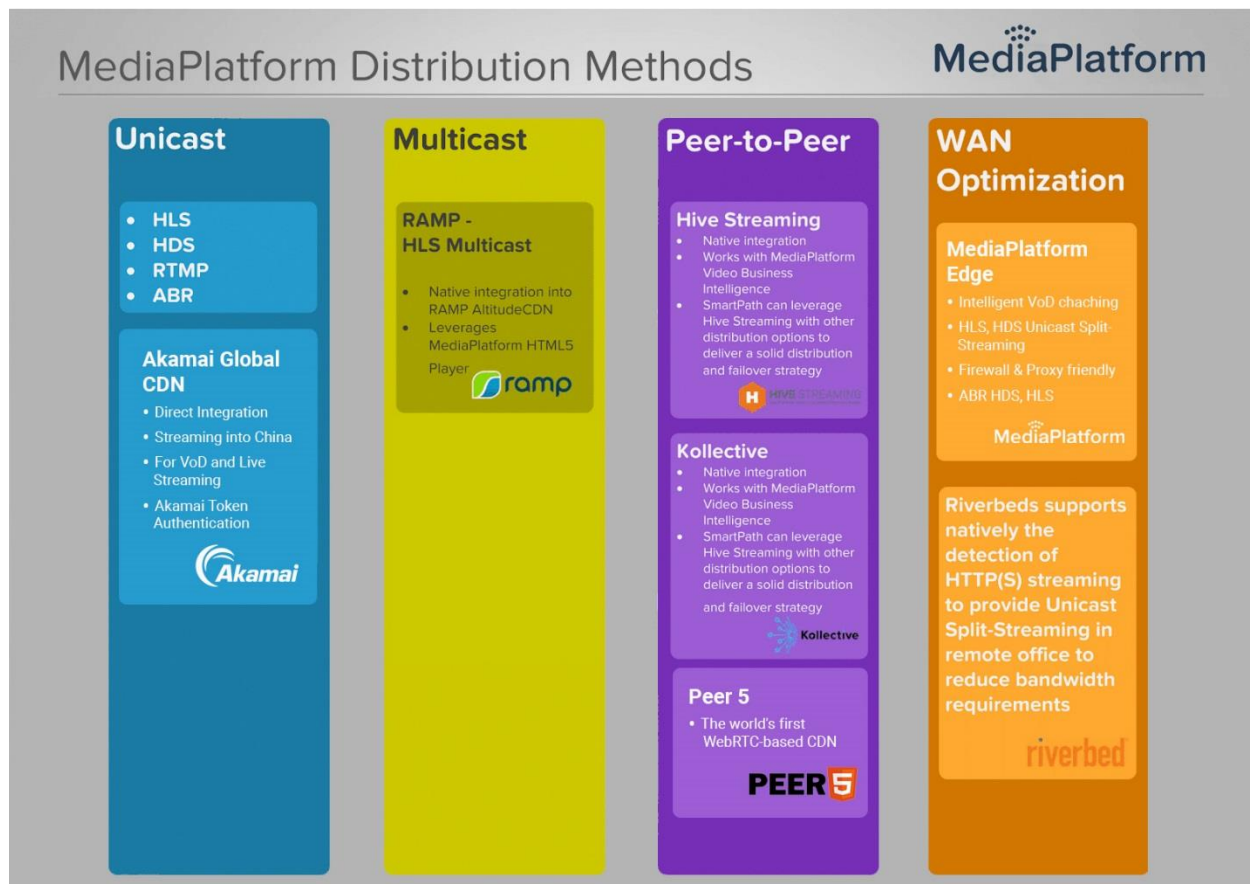
MediaPlatform offers a variety of solutions for both live and on-demand video to solve the challenges associated with enterprise video delivery across corporate networks. MediaPlatform can leverage existing infrastructure, in addition to offering software-based solutions in combination with media server technologies to address any kind of network reality. The flexibility of MediaPlatform's approach enables enterprises to deploy the solution that best suits their specific needs, and at the lowest possible cost.

In this solution overview we will briefly describe the options that are available to MediaPlatform customers for creating a pervasive video distribution solution across the enterprise.

Live Video Distribution Solutions
MediaPlatform Smartpath
Abstracting the network with a software distribution overlay for live video streaming

MediaPlatform Smartpath is the enabling software solution that makes it possible for MediaPlatform's customers to leverage a variety of end point distribution technologies in creating a robust, scalable, and highly resilient live video streaming solution for internal networks. Smartpath leverages a rules-based engine for defining what streaming format, bit-rate, and transport protocol will be used to optimize video delivery to each network site so that existing infrastructure and network configurations can be leveraged whenever possible, while also defining how failover and redundancy is to be managed.

10. MediaPlatform Edge

10.1.1. MediaPlatform Edge Requirements
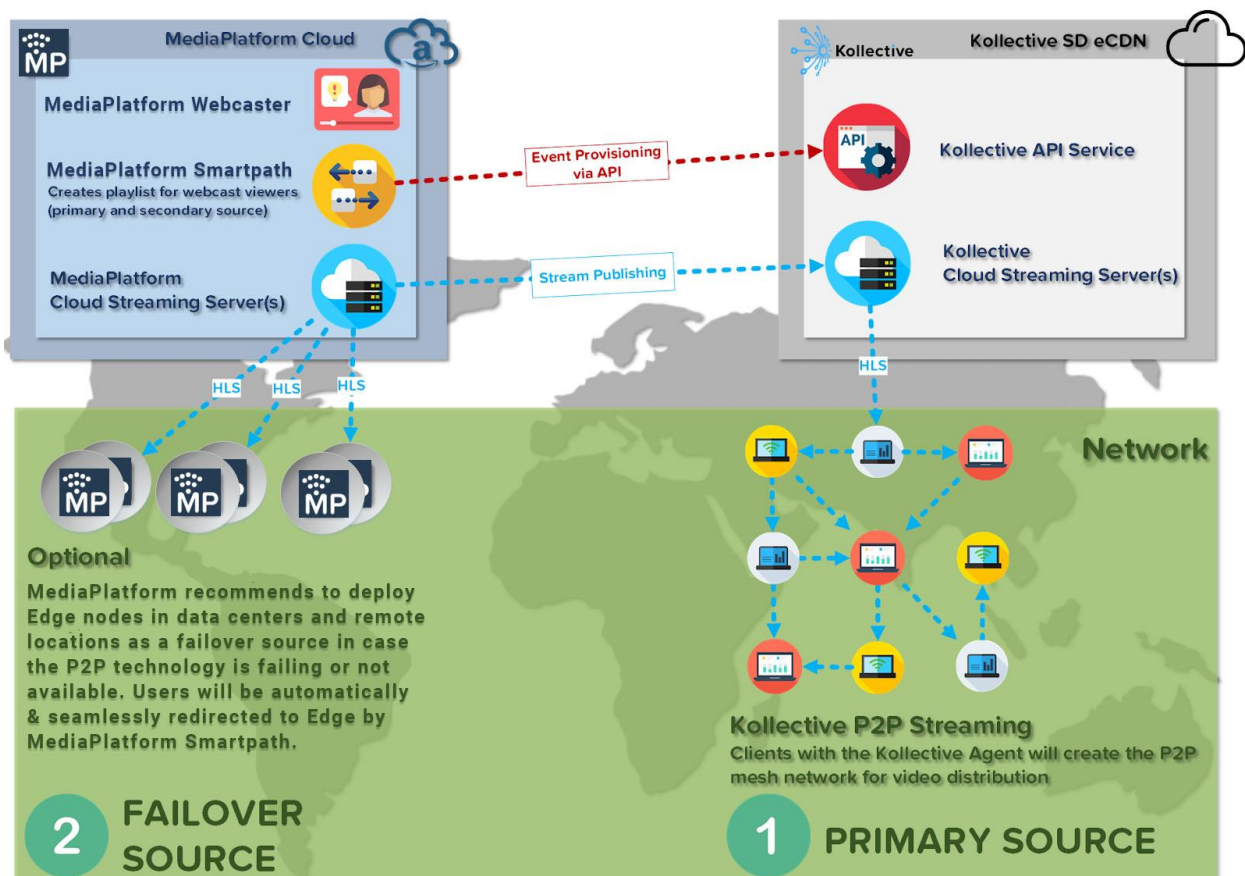
Edge is typically deployed in the datacenter and/or remote locations to provide VoD caching + HTTP(s) live stream splitting. Edge works in hybrid and on-premise deployments.

Highlights

- Firewall & Proxy friendly. Only requires standard HTTP (80) and HTTPS (443) to be open.
- Works with all HTTP Streaming protocols (inclusive of ABR) and MP4 pseudo-streaming.
- Ability to pre-position videos, including ABR videos. Pre-positioning allows for defining a date/time and bandwidth throttling.
- Edge administration from On Demand. From On Demand, ability to see the status of all Edge nodes, ability to organize Edge nodes into groupings, and ability to preposition to individual or groups of Edge nodes.
- Robust topology. Edge nodes can be tiered.
- Edge can accelerate VOD and Live videos.
- Can be provided as an .ova image

Security Certificates

SSL certs will be needed for the servers. If the Edge server will be pointed to the MediaPlatform cloud server as the origin, then the cert would need to be for *.mediaplatform.com. The Edge will be pulling content from another Edge server that is in use than the cert would be for the domain the Edge server.

10.1.2. OS Requirements

- Preferred:
    - o Ubuntu Linux 12.04 64-bit
    - o Centos/RedHat Linux 6.8/7.x 64-bit
- Optional (additional restrictions and added costs might apply):
    - o Windows 2008 Server or later 64-bit version (only supported on "Standard hardware setup", see below).

> ➔   MediaPlatform can provide also a VMware ESXI-compatible .ova image of Edge.

10.1.3. Minimum hardware requirements

- Standard setup (supports up to 700 concurrent viewers at 512kbps stream bitrate)
    - o 4 CPU cores

- o   8GB RAM
- o   100GB disk space
- o   1Gbps NIC
- <u>High throughput setup (supports up to 5000 concurrent viewers at 512kbps stream bitrate)</u>
  - o   16 CPU cores
  - o   32GB RAM
  - o   500GB disk space
  - o   10Gbps NIC

10.1.4. Installation Instructions + Software

Below, you can find both Linux & VMware download packages of MediaPlatform Edge and the appropriate installation guide.

RHEL/CentOS package

https://s3.amazonaws.com/Edge/v6.1.4/mp-Edge-6.1.4.x86_64.rpm
https://s3.amazonaws.com/Edge/v6.1.4/mp-Edge-6.1.4.x86_64.rpm.md5
https://s3.amazonaws.com/Edge/v6.1.4/Edge-6.1.x-RHEL-Installation.pdf

VMWare package

https://s3.amazonaws.com/Edge/v6.1.4/Edge-6.1.x-VMWare-Installation.pdf

OVA Package
https://s3.amazonaws.com/Edge/v6.1.4/ESXi+5.5+CentOS+6.9+x86_64+-+Edge+6.1.4.ova

https://s3.amazonaws.com/Edge/v6.1.4/ESXi+5.5+CentOS+6.9+x86_64+-+Edge+6.1.4.ova.md5

OVF/VMDK package
https://s3.amazonaws.com/Edge/v6.1.4/ESXi+5.5+CentOS+6.9+x86_64+-+Edge+6.1.4.ovf

https://s3.amazonaws.com/Edge/v6.1.4/disk-1.vmdk

https://s3.amazonaws.com/Edge/v6.1.4/ESXi+5.5+CentOS+6.9+x86_64+-+Edge+6.1.4.ovf.md5

https://s3.amazonaws.com/Edge/v6.1.4/disk-1.vmdk.md5

10.2. MediaPlatform Edge Overview

Enterprise Content Delivery Network
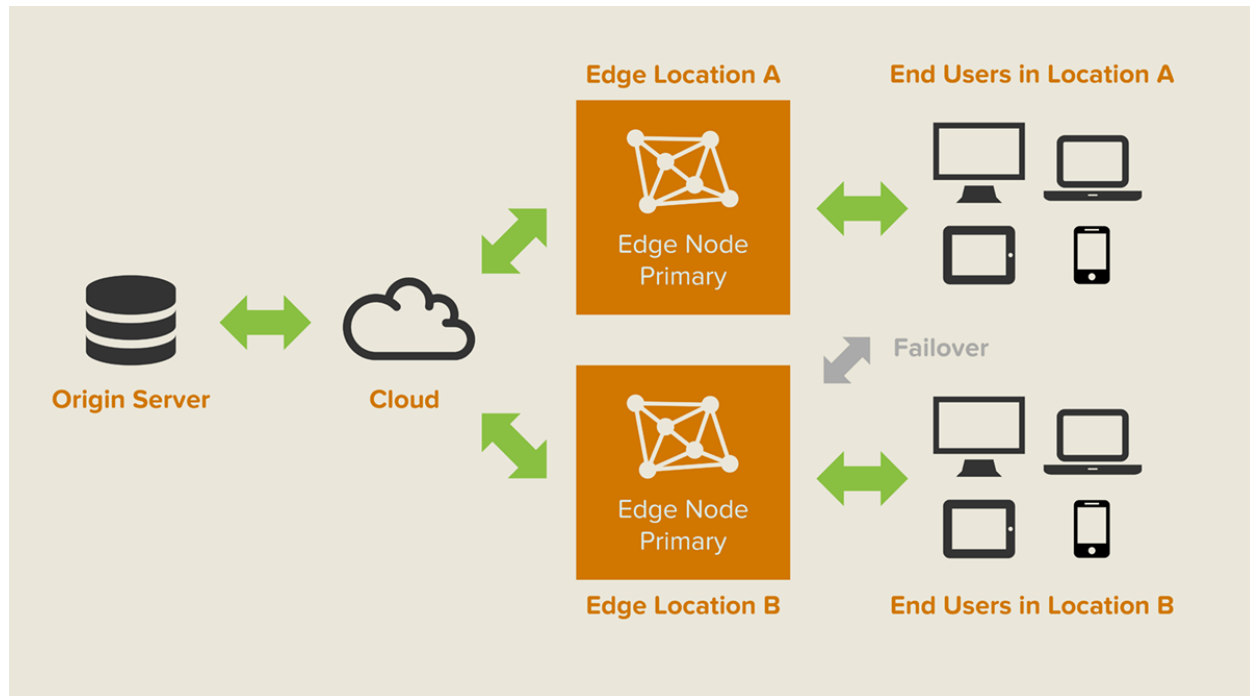
Video Content Delivery across the Enterprise

Edge is an Enterprise Content Delivery Network (eCDN) focusing on the "scalability" of enterprise video and supporting acceleration and optimization of live and on-demand HTTPS video delivery across the corporate network. Edge provides network/firewall/proxy-friendly streaming of secure, high quality live, interactive business broadcast, webcasts and other high-stakes live streaming, as well as on-demand video streaming to any desktop, tablet or mobile device. Edge provides enterprises with a cost-efficient solution for deploying an eCDN specifically for video served from MediaPlatform's enterprise video platform. This contrasts with generic HTTP optimization devices such as Riverbed and Bluecoat, which focus on generic caching of all HTTP(s) traffic and have a very high implementation cost that makes deploying them strictly for video traffic too costly.

Edge is a software-based solution and does not require special hardware such as wire taps. It can be purchased as software only, or as a hardware appliance which can be shipped and installed to network locations that require a plug and play solution.

The MediaPlatform Edge eCDN solution is composed of edge nodes, each with a set of edge node servers. Each edge node is autonomous and is strategically positioned on the network to serve as an edge cache for edge network locations where caching and pre-positioning is needed to provide optimal video quality with minimal network impact.

Benefits of an Enterprise Content Delivery Network (eCDN)

No Disruption of Network Traffic
Edge provides a network with advanced streaming and dynamic caching features to optimize your existing infrastructure and can function as the sole video distribution platform or integrate with other CDNs.

Positive Caching and Efficiency
For each piece of video content (ABR or Non-ABR), the Edge eCDN provides an efficient means of dynamically determining a positive cache hit. If the cache data no longer matches what is on the origin server (for example, a newer version of the video is available) Edge redirects the end user to pull the content from the origin server. In addition, the Edge node updates the stale cache by fetching the new content from the origin server.

Live and On-Demand Delivery
Edge works in conjunction with cloud or on-premises deployments of MediaPlatform On Demand and Webcaster, which combine to form the leading enterprise video platform on the market. Edge lets you distribute video in multiple formats and enables delivery of content to your global workforce with support for adaptive bitrate streaming.

Video Pre-Positioning
Minimize network load and maximize cost savings by pre-positioning on-demand video content and maintaining a single stream across the WAN or LAN for live rich media webcasts.

Intelligent Video Caching
Edge is a cost-efficient solution for deploying an eCDN specifically for video served from MediaPlatform On Demand and Webcaster. In contrast to generic HTTP optimization devices, which focus on generic caching of all HTTP traffic, and have high implementation costs that make deploying them strictly for video traffic too expensive for most organizations. Edge can work as the sole distribution platform for video across an organization, or in conjunction with other enterprise or Internet CDNs.

Redundancy and Transparency

Each Edge node provides a fall-back capability to maintain redundancy in the distribution system so that each request for a video can fall back to another local edge node, or the origin server if the end user's primary edge node is unavailable. This redundancy and fall back is handled by the MediaPlatform Unified Video Player when it detects that it cannot pull the video from the primary source, and it will continue to fall back to a different source until a successful source is discovered. The prioritized list of sources is defined at the MediaPlatform application level.

Administration from MediaPlatform On Demand

Edge provides an administrative UI inside the MediaPlatform On Demand video portal, where each edge node can be directly administered. This video content delivery network allows for the configuration of edge nodes and provides reporting and performance data for each edge node.

Software-Based Solution

Edge can be purchased as software only, or as a hardware appliance which can be installed at network locations that require a plug and play solution. Edge is composed of autonomous edge nodes and is strategically positioned on the network to serve as an edge cache for edge network locations where caching and pre-positioning is needed to provide optimal video quality with minimal network impact.

Technical Highlights of the Edge eCDN

Firewall Friendly

Only requires standard HTTP (80) and HTTPS (443) to be open.

Automatic Routing Logic

Edge ensures that each end user watching video pulls content from the appropriate edge node where it is cached.

Caching on the Fly

MediaPlatform Smartpath manages distribution profiles for optimizing live streaming, failover, and redundancy. MediaPlatform Edge is an enterprise Content Delivery Network (eCDN) focused on the acceleration/optimization of HTTPS video delivery within the enterprise.

Byte Range Caching

Superb video playback using ABR technologies and Tier 1 CDNs. Support for HDS and HLS for live.

10.3. WAN Optimization Appliances

Edge Caching with WAN Optimization Appliances
Leveraging existing WAN optimization infrastructure for caching VOD

An alternative to MediaPlatform Edge is for enterprises to leverage their existing investment in WAN Optimization and HTTP caching appliances to handle HTTP Video caching. Edge is a great solution for organizations who have not already made the investment in these types of appliances, but for organizations who already have a viable video caching solution, especially from vendors like Riverbed, Bluecoat, Exinda, Silverpeak, and Cisco, the fact that MediaPlatform has embraced open HTTP video streaming standards like HDS and HLS means that these existing investments can deliver further ROI.

For more information on how these appliances handle video caching and pre-positioning, please refer to the respective vendor's documentation.

Live Split Streaming with WAN Optimization Appliances
Leveraging existing WAN optimization infrastructure for live video distribution

An alternative to IP Multicast, and P2P Multicast is for enterprises to leverage their existing investment in WAN Optimization appliances to handle HTTP video split streaming for live video. For organizations that already have a viable video split streaming solution, especially

from vendors like Riverbed and Bluecoat, the fact that MediaPlatform has embraced open HTTP video streaming standards like HDS and HLS means that these existing investments can deliver further ROI.

10.4. Peer-to-Peer Streaming

10.4.1. Hive Streaming

Hive Streaming solves the issues with large scale, high quality video streaming in private networks. Hive utilizes idle infrastructure capacity for efficient and scalable video streaming. Hive is network friendly and is by default set-up to always yield to other network traffic. Hive is simple (software only) and fast (hours) to deploy and requires no or little on-going support and maintenance.

All this is done by allowing existing devices such computers, laptops and mobile devices to form a peer-based video distribution network (VDN). A Hive VDN consists of viewer devices cooperating to cache and distribute chunks of video coordinated by the Hive algorithms. The Hive Clients jointly and autonomously select the optimal way to fetch the right content at the right time and automatically distributes it amongst themselves.

The result is a highly resource efficient, robust and adaptive system that removes almost all network load whilst maintaining very high levels of reliability. Even when key Clients in the network suddenly disappear (e.g. a viewer shuts down the computer), other Hive Clients will seamlessly take over their responsibility without any disturbance to the viewers.

The Hive Streaming technology – some of it described here – is based on several patent pending distribution algorithms enabling enterprises and other private network operators to remove 97-99% of the video traffic fully replacing hardware based multi-casting solutions.
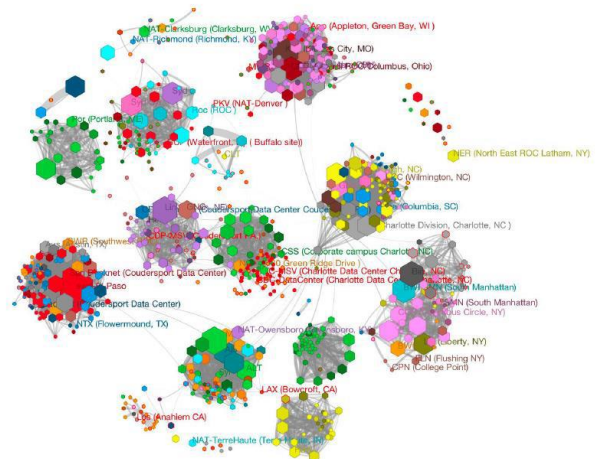
10.4.1.1. MediaPlatform Webcaster Integration
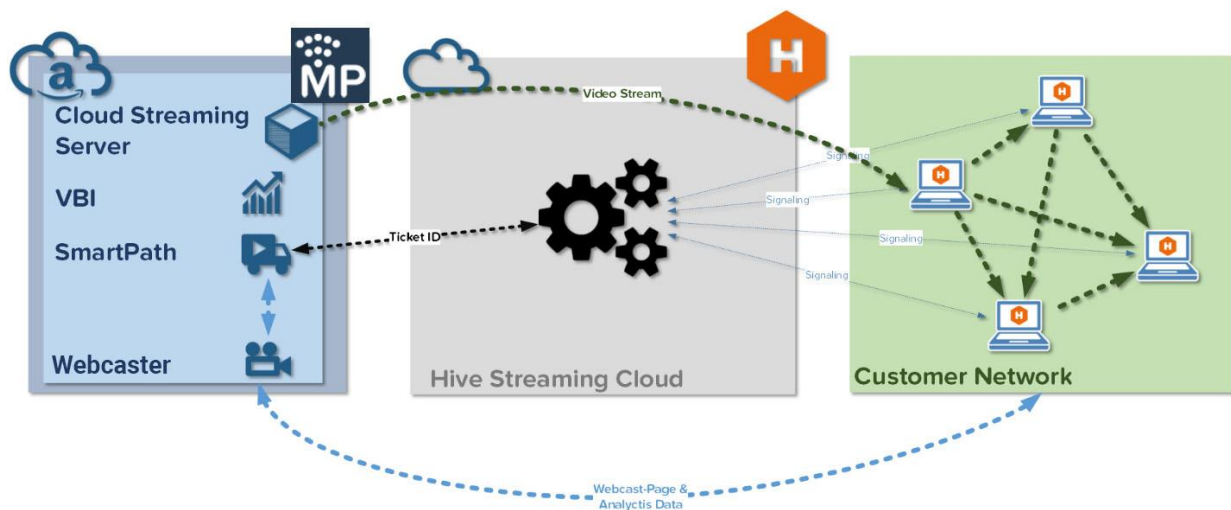
MediaPlatform Smartpath uses an ID in the Hive Streaming ticketing system to provide the customers Hive deployment with the right origin video stream URL.

When users with the Hive client launch the webcast page, MediaPlatform Smartpath redirects the video player to the Hive cloud from where the peering between Hive clients will be controlled.

Another benefit of this integration is that Smartpath failover rules will be leveraged as well. In case the Hive client cannot get play the stream, Smartpath will fail over the video player to next available streaming source (e.g. Multicast or a unicast eCDN solution)

MediaPlatform Video Business Intelligence (VBI) also collects webcast-relevant data from the Hive Streaming P2P distribution during a live event. VBI provides the following QoS data about the Hive Streaming distribution (see example screenshots below):

- User Overview
- Loadstart Timeline
- Buffer by Timeline and User
- Failovers
- Startup Time
- Play Success

## 10.4.2. Kollective Integration

About Kollective

The Kollective Software-Defined Enterprise Content Delivery Network (SD eCDN) is designed to overcome the major challenges of delivering content and streaming of on-demand or live video to large numbers of users regardless of their location or available bandwidth. The solution is completely software based and utilizes your existing network infrastructure—no physical or virtual caching appliances to deploy and manage, and no streaming servers to distribute geographically.

The Kollective SD eCDN uses a centrally managed peer-assisted delivery model which maintains a virtual network map of all available peers and arranges communications between peers that are topologically close to each other. This overcomes many of the problems associated with traditional on-demand and live streaming methods by moving the load from the Wide Area Network (WAN) to the Local Area Network (LAN).

The result is a significant improvement over the traditional hardware solution. Often only one copy of a content or stream is delivered into each office location regardless of the number of users there who request it and due to the peer-assisted ECDN, the solution is practically unlimited in scale both in terms of numbers of users and end user locations, in fact the more users there are, the better the system can perform, as there are more nearby sources to receive the content from. Kollective currently have almost 5 million endpoints connected to the Kollective platform.

10.4.2.1.   MediaPlatform Webcaster Integration
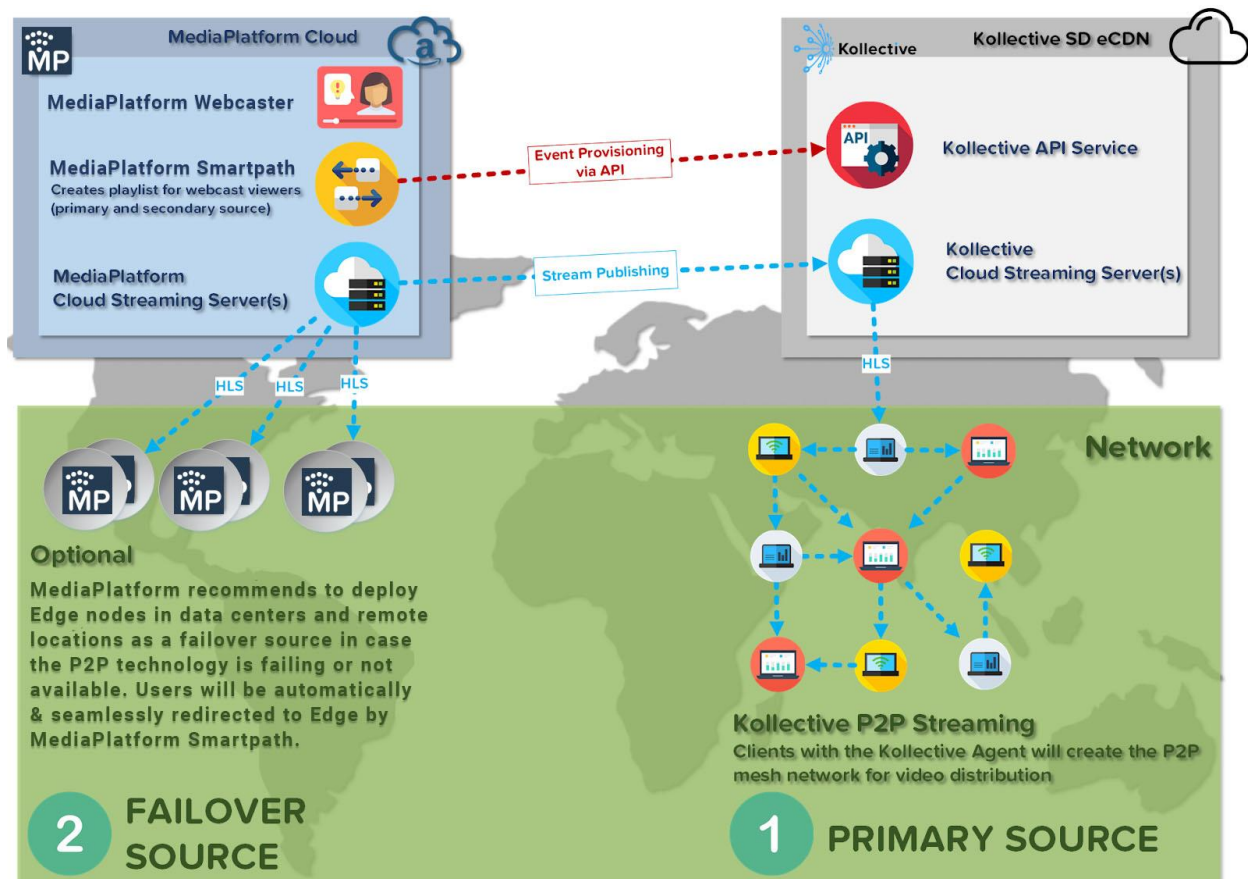
MediaPlatform Smartpath calls the Kollective Cloud API to create an event. After that, Smartpath can get the publishing URL of the Kollective streaming server. Once the live event is started in MediaPlatform Webcaster, Smartpath publishes the stream to the Kollective Streaming server from where the peering between Kollective clients will be initiated and controlled.

Another benefit of this integration is, that the MediaPlatform Smartpath failover rules will be leveraged as well. In case the Kollective client cannot get play the stream, Smartpath will redirect/fail-over the video player to next available streaming source (e.g. CDN, eCDN, Multicast, etc.)

MediaPlatform Video Business Intelligence (VBI) collects also webcast relevant data from the Kollective Streaming P2P distribution during a live-event. VBI provides the following QoE data about the Kollective distribution:

- User Overview
- Loadstart Timeline
- Buffer by Timeline and User

- Failovers
- Startup Time
- Play Success

10.5. Ramp Integration (Multicast)

MediaPlatform has developed an advanced API integration with Ramp's AltitudeCDN™ to ensure Webcaster works cohesively with Ramp's enterprise video delivery solutions.

By exposing AltitudeCDN stream routing information to Smartpath, MediaPlatform can intelligently route streams to the delivery infrastructure at the edges of your network for the best viewing experience regardless of location.

10.5.1. AltitudeCDN™ Multicast+

Ramp provides a cost-effective, high-quality, non-invasive, reliable live streaming option to Microsoft multicast server and Flash that won't cripple your network.

Standards-based multicasting for live video

FUTURE OF VIDEO
- Only multicast solution for HLS/DASH
- Integrated support with MediaPlatform

ENTERPRISE-GRADE SECURITY
- Encryption at rest and in motion
- HTTPS

HIGH-QUALITY VIDEO
- Forward error correction (patented)
- Bandwidth smoothing (patented)

RELIABLE DELIVERY
- Supports high-availability clustering
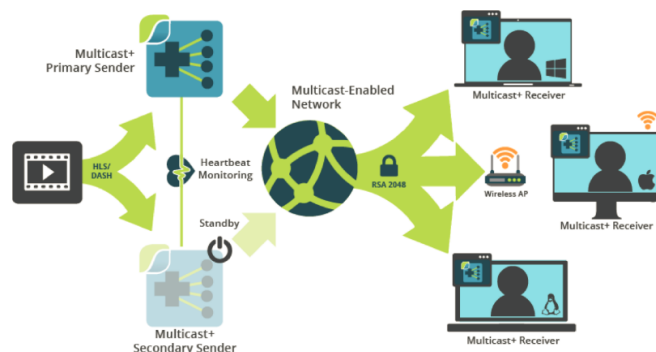
10.5.2. AltitudeCDN™ Altimeter

AltitudeCDN Altimeter is the first and only global management interface for next-generation multicast provisioning. Our platform-agnostic solution supports any HLS and DASH video source. The Altimeter console allows you to deploy, manage & monitor all your Multicast+ instances for livestream events over multiple channels, sources, and sites, all from a single location.

Centralized management for enterprise-grade video distribution

- ADMINISTER your global multicast and caching environment from a single, web-based interface

- SCHEDULE and monitor live events

- MONITOR network performance in real time

- TROUBLESHOOT with one-click access to diagnostic data

- CONTROL viewer experience with real time traffic re-routing
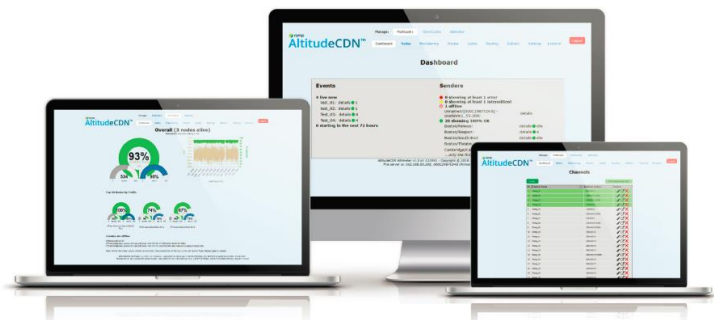
10.5.3. Live Streaming on a Multicast-Enabled Network
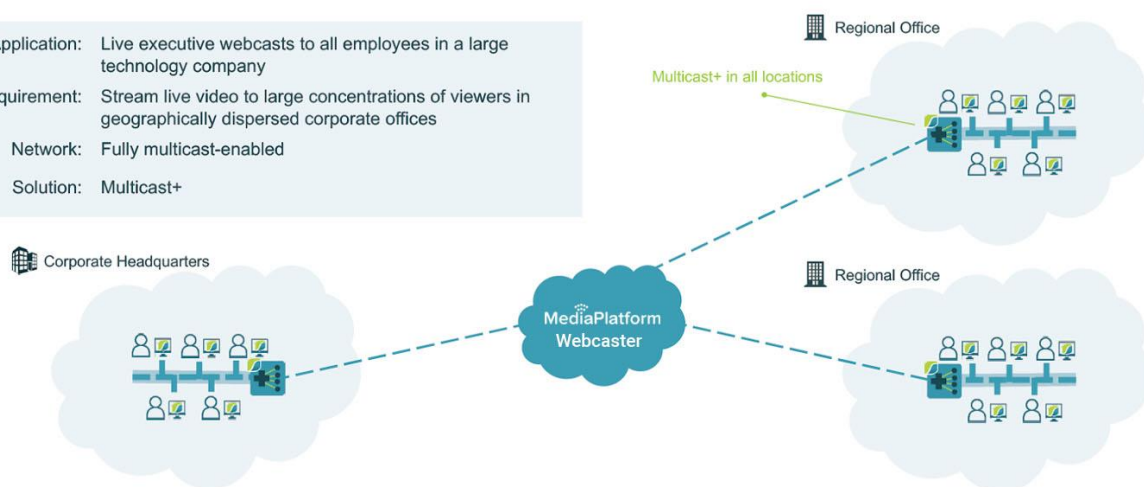
10.5.4. About Our Partnership with Ramp

MediaPlatform and Ramp have integrated the enterprise live streaming platform, Webcaster, with AltitudeCDN™ Multicast+ to enable html5 multicasting inside the enterprise. Key to the integration is MediaPlatform's Smartpath technology that provides a rules-based engine for delivering a variety of video formats to different portions of the corporate network, including html5 multicasting via Ramp. The Ramp and MediaPlatform partnership is also highlighted by the option to achieve real-time visibility into network performance during an event. Video Business Intelligence from MediaPlatform is a Quality of Service (QoS) dashboard for monitoring failover, buffers, play success and other key streaming indicators for live broadcasts.

11.   Data Transport on Communication Links

This section provides detailed description of what data is being transported on the communication links.

11.1. Single Sign-On – Internal Webcast & Video Portal Users

Minimum claims required are:

- First Name
- Last Name
- Email Address

Based on the business requirements, additional claims may be required. These could include title, location, department, etc.

- For example, for content access control rules based on group memberships or other AD/LDAP attributes

11.2. External Webcast Viewers

MediaPlatform Webcaster collects the following data from external viewers:
- Webcast registration data
  - Only if registration page is enabled
  - Registration data is customizable with webcast wizard
  - E.g. first name, last name, email address, company, country, etc.
- External IP address (if enabled)

11.3. MediaPlatform Video Business Intelligence (Analytics)

The collected reporting & analytics data are:

- Stream Startup Time (by seconds)
- Stream Play Success Timeline
- Stream Buffers Timeline
- Buffers by User
- Failovers Timeline
- Failovers by User
- External/Internal IP Address

Video Business Intelligence can also collect the following (optional)

- First name
- Last name
- Email Address

➔ Then the webcast QoS data is anonymized.

11.4. Distribution

The viewer's webcast webpage will send the local IP address via HTTPS 443 to MediaPlatform Smartpath.

MediaPlatform Smartpath then responses with a playlist of different live-stream sources for the particular device/viewer based on location.

## 12. Live-Webcasting Analytics and Real Time Metrics

For Live Streaming (**Webcaster**), MediaPlatform offers Video Business Intelligence (VBI). VBI is focused on offering prescriptive and predictive analytics for enterprise live streaming.
VBI collects the most relevant data for all webcasts in real time and provides deep analytics in an easy to use and customizable Quality of Service (QoS) dashboard.

Highlights:
- MediaPlatform VBI provides a level of insight into the user experience for live video presentations that has never been seen in the live streaming industry.
- MediaPlatform has solved the challenge of processing the tremendous amount of data generated during a webcast to help organizations preemptively identify and remedy trouble points.
- Drill down to see an individual's user experience. If problems are detected with the stream, VBI's robust visualization UI allows the live stream producer to quickly pinpoint the cause.
- Incorporate data from MediaPlatform VBI into your existing BI solution to allow your live streaming data to be accessed by users across all departments.
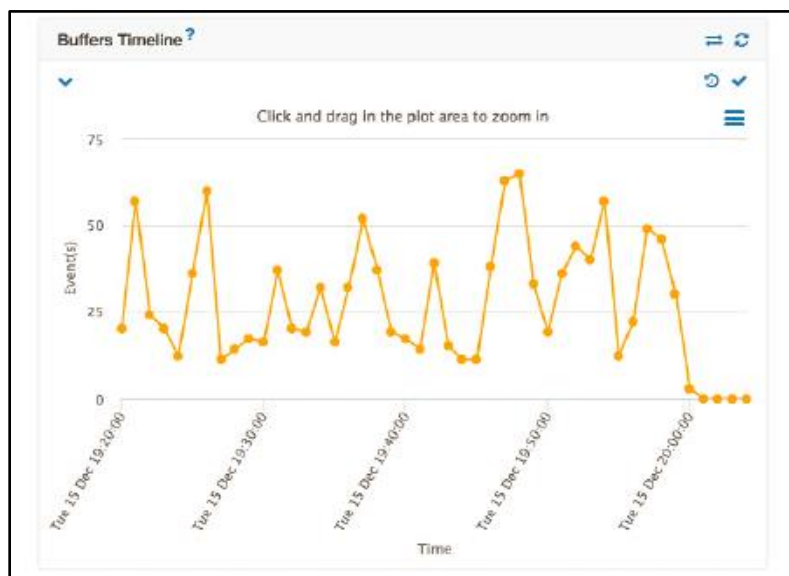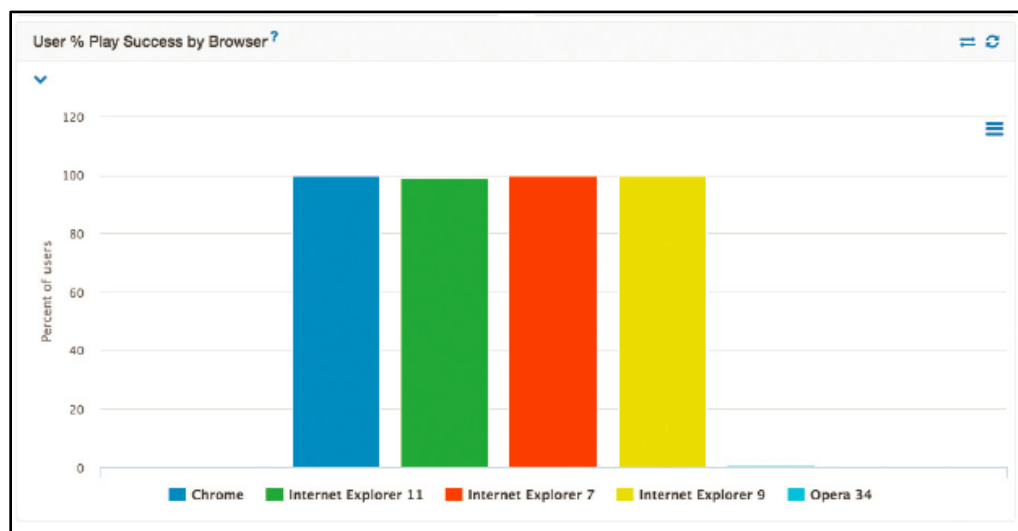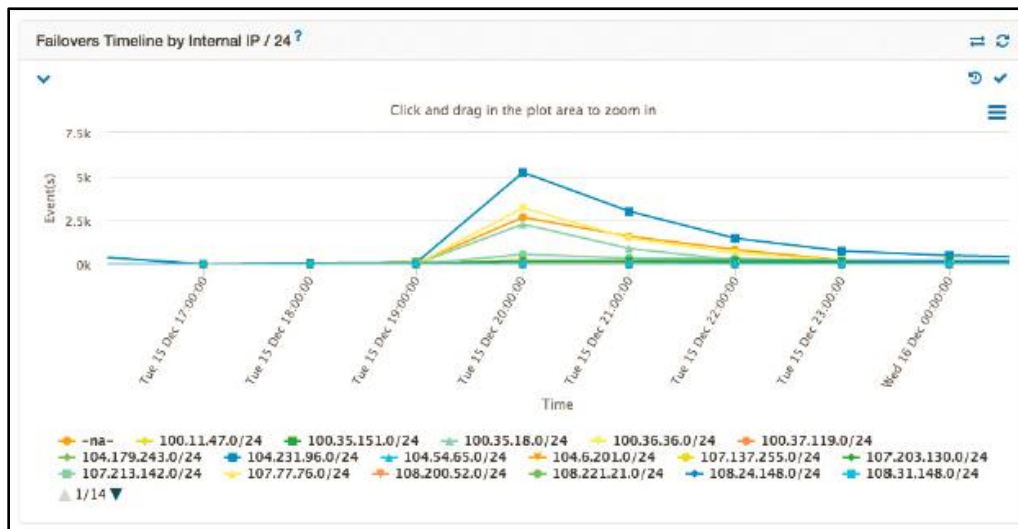
13. Video-On-Demand Analytics & Reporting

On Demand keeps statistics about each piece of content in the library. The Analytics tab, shown below, gives you access to these stats and the ability to browse date ranges and compare different asset's performance. The report shows you a variety of reports, including Top Assets, Asset Inventory (quantity and storage), Top Contributors, Top Viewers, Device (device used to view video), Browser and OS (operating system used to view video).

The Top Videos tab also shows links to analytics for live events created in MediaPlatform Webcaster. These links are only available to users who have the appropriate permissions in Webcaster.
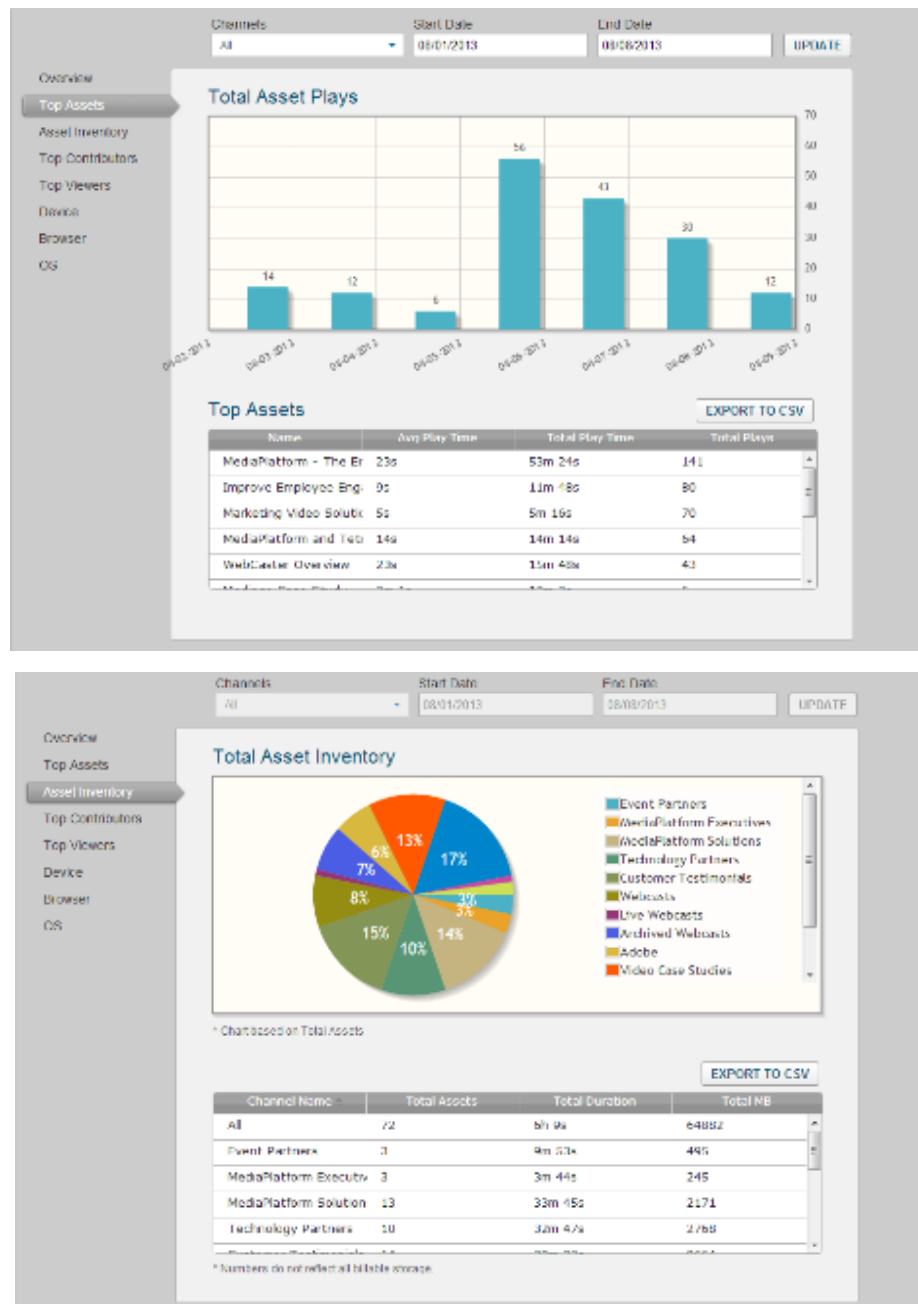
14.   MediaPlatform Bridge

MediaPlatform Bridge is a videoconferencing gateway that enables the live streaming of videoconferences to audiences of unlimited size and provides a central repository for managing all videoconference recordings. Derive greater ROI from investments in videoconferencing technology by using a VCU or MCU as a source for Town Halls and All-Hands meetings and improve knowledge sharing and collaboration by auto-archiving all sessions in a searchable and secure portal.

VC Infrastructure Integration with MediaPlatform Bridge
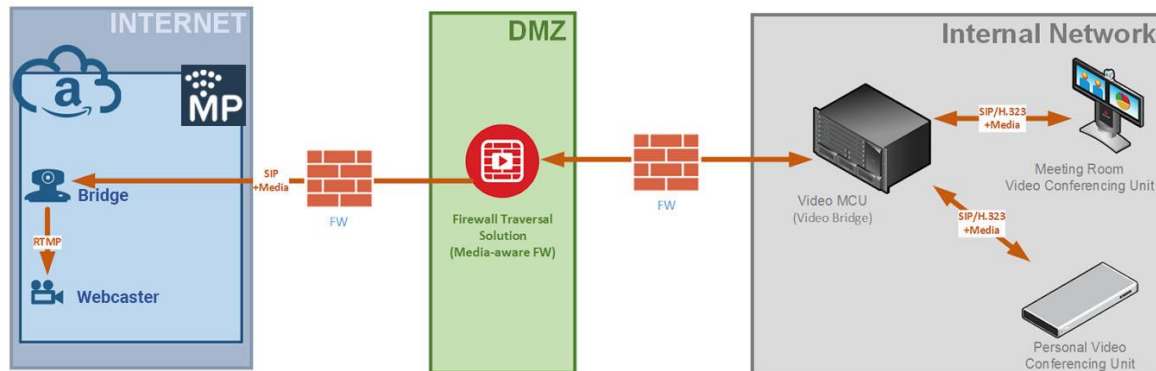
MediaPlatform Bridge can accept incoming calls from a Video Bridge (MCU) or directly from Video Endpoints. Furthermore, Bridge can also dial-out to a video conferencing infrastructure via SIP. Content sharing is a also supported via SIP BFCP.

Once Bridge receives the RTP media stream, it will transcode it into RTMP and uses it as the source for a Webcaster live stream.

15.   MediaPlatform System Security

MediaPlatform's production systems support video and webcasting needs, including mission-critical executive communications needs, of some of the largest corporations in the world. The following section describes our approach to security and how we handle the main security issues that arise in our business. MediaPlatform hosts its applications at Amazon Web Services (AWS). AWS provides a highly reliable, scalable, low-cost infrastructure platform in the cloud that powers hundreds of thousands of businesses in 190 countries around the world. Companies such as Ericsson, the Guardian newspapers, Newsweek, Reddit, and Hitachi Systems rely on AWS for critical hosting needs.

AWS has passed the following audits / global assurance programs:

CSA
Cloud Security Alliance Controls

ISO 9001
Global Quality Standard

ISO 27001
Security Management Controls

ISO 27017
Cloud Specific Controls

ISO 27018
Personal Data Protection

PCI DSS Level 1
Payment Card Standards

SOC 1
Audit Controls Report

SOC 2
Security, Availability, & Confidentiality Report

SOC 3
General Controls Report

15.1. Benefits of AWS Security

Keep Your Data Safe

The AWS infrastructure puts strong safeguards in place to help protect MediaPlatform customer privacy. All data is stored in highly secure AWS data centers.

Meet Compliance Requirements

AWS manages dozens of compliance programs in its infrastructure. This means that segments of MediaPlatform's

compliance have already been completed.

Scale Quickly

Security scales with AWS cloud usage. AWS infrastructure is designed to keep data safe.

16.   Security Platform

16.1. Infrastructure Security

AWS provides several security capabilities and services to increase privacy and control network access. These include:

- Network firewalls built into Amazon VPC, and web application firewall capabilities in AWS WAF let you create private networks, and control access to your instances and applications

- Encryption in transit with TLS across all services

- Connectivity options that enable private, or dedicated, connections from your office or on-premises environment

16.2. DDoS Mitigation
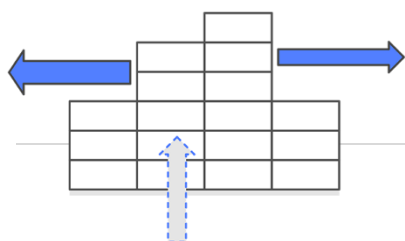
Availability is of paramount importance in the cloud. AWS customers benefit from AWS services and technologies built

from the ground up to provide resilience in the face of DDoS attacks.

A combination of AWS services may be used to implement a defense in depth strategy and thwart DDoS attacks. Services designed with an automatic response to DDoS help minimize time to mitigate and reduce impact.

16.3. Data Encryption

AWS offers the ability to add an additional layer of security to data at rest in the cloud, providing scalable and efficient encryption features. This includes:

- Data encryption capabilities available in AWS storage and database services, such as EBS, S3, Glacier, Oracle RDS, SQL Server RDS, and Redshift
- Flexible key management options, including AWS Key Management Service, allowing you to choose whether to have AWS manage the encryption keys or enable you to keep complete control over your keys
- Encrypted message queues for the transmission of sensitive data using server-side encryption (SSE) for Amazon SQS
- Dedicated, hardware-based cryptographic key storage using AWS CloudHSM, allowing you to satisfy compliance requirements

16.4. Certifications / Attestations:

Compliance certifications and attestations are assessed by a third-party, independent auditor and result in a certification, audit report, or attestation of compliance.

- C5 [Germany]
- Cyber Essentials Plus [UK]
- DoD SRG
- FedRAMP
- FIPS
- IRAP [Australia]
- ISO 9001
- ISO 27001

- [ISO 27017](#)

- [ISO 27018](#)

- [K-ISMS [Korea]](#)

- [MTCS [Singapore]](#)

- [PCI DSS Level 1](#)

- [SEC Rule 17-a-4(f)](#)

- [SOC 1](#)

- [SOC 2](#)

- [SOC 3](#)

16.5. Laws / Regulations / Privacy:

AWS customers remain responsible for complying with applicable compliance laws and regulations. In some cases, AWS offers functionality (such as security features), enablers, and legal agreements (such as the AWS Data Processing Agreement and Business Associate Addendum) to support customer compliance.

No formal certification is available to (or distributable by) a cloud service provider within these law and regulatory domains.

- [Argentina Data Privacy](#)

- [CISPE](#)

- [EU Model Clauses](#)

- [FERPA](#)

- [GLBA](#)

- [HIPAA](#)

- [HITECH](#)

- [IRS 1075](#)

- [ITAR](#)

- [My Number Act [Japan]](#)

- [U.K. DPA - 1988](#)

- [VPAT / Section 508](#)

- [EU Data Protection Directive](#)

- [Privacy Act [Australia]](#)

- [Privacy Act [New Zealand]](#)

- [PDPA - 2010 [Malaysia]](#)

- [PDPA - 2012 [Singapore]](#)

- [PIPEDA [Canada]](#)

- [Spanish DPA Authorization](#)

16.6. Alignments / Frameworks:

Compliance alignments and frameworks include published security or compliance requirements for a specific purpose, such as a specific industry or function. AWS provides functionality (such as security features) and enablers (including compliance playbooks, mapping documents, and whitepapers) for these types of programs.

Requirements under specific alignments and frameworks may not be subject to certification or attestation; however, some alignments and frameworks are covered by other compliance programs.

- [CIS](#)

- [CJIS](#)

- [CSA](#)

- [ENS [Spain]](#)

- [EU-US Privacy Shield](#)

- [FFIEC](#)

- [FISC](#)

- [FISMA](#)

- [G-Cloud [UK]](#)

- [GxP (FDA CFR 21 Part 11)](#)

- [ICREA](#)

- [IT Grundschutz [Germany]](#)

- [MITA 3.0](#)

- [MPAA](#)

- [NIST](#)

- [PHR](#)

- [Uptime Institute Tiers](#)

- [UK Cloud Security Principles](#)

17.   Privacy Policy

Your privacy is our top concern. We work hard to earn and keep your trust, so we adhere to the following principles to protect your privacy:

- We will never rent or sell your personally identifiable information to third parties for marketing purposes
- We will never share your contact information with other users.
- Any sensitive information that you provide will be secured with all industry standard protocols and technology

Notice of all changes that materially affect ways in which your personally identifiable data may be used or shared will be posted in updates to our Privacy Policy. If you continue to use the MediaPlatform service after notice of changes have been sent to you or published on our site, you hereby provide your consent to the changed practices policy to learn more about:

- The personally identifiable information of yours that is collected by MediaPlatform
- How the information is used
- With whom the information may be shared
- How you can access and change your Account information
- The security procedures in place to protect the loss, misuse or alteration of information collected by MediaPlatform
- How to contact us
- Users with questions or concerns regarding this statement can contact MediaPlatform by email at privacy@mediaplatform.com

MediaPlatform complies with the U.S.-EU Safe Harbor Framework and the U.S.-Swiss Safe Harbor Framework as set forth by the U.S. Department of Commerce regarding the collection, use, and retention of personal information from European Union member countries and Switzerland. MediaPlatform has certified that it adheres to the Safe Harbor Privacy Principles of notice, choice, onward transfer, security, data integrity, access, and enforcement.

To learn more about the Safe Harbor program, and to view MediaPlatform's certification, please visit: http://export.gov/safeharbor/

17.1. Information Collection

Registration

In order to become a MediaPlatform user, you must first create an account. To create an account, you are required to provide the following contact information: name, email and choose a password. In some cases, you may be required to enter other personal information.

Information about your Contacts

In order to invite others to view your webcasts, you will enter their email addresses (either manually or via import). This information will be used by MediaPlatform to send your invitation including a message that you write. The email addresses of people that you invite will be used only to send your invitation.

All information that you enter or upload about your contacts will be covered by the same terms of this privacy policy as cover your own personally identifiable information.

Information Use

MediaPlatform software allows the user to easily create rich media presentations with synched, dynamic content. Users also can create and upload on-demand video content. Information, that does not personally identify you as an individual, is collected by MediaPlatform from the software (such as, by way of example, number of webcasts created and patterns of utilization) and is exclusively owned by MediaPlatform. This information can be utilized by MediaPlatform in such manner as MediaPlatform, in its sole discretion, deems appropriate.

MediaPlatform Communications

MediaPlatform will communicate with you through email and notices posted on the MediaPlatform website. These emails from MediaPlatform will be related to the proper functioning of your account, such as email notices about hosting usage, upgrades, important information and services. MediaPlatform may also send news, information on using our

products and other relevant information. You may request not to receive these communications at any time by emailing unsubscribe@mediaplatform.com with the word "unsubscribe" in the subject.

Customized Content

Information you provide at registration is also used to customize your experience within the software. For example, when you login to your account we will display current usage information.

17.2. Information Sharing

Sharing Information with Third Parties

MediaPlatform takes the privacy of our users very seriously. We will never sell, rent, or otherwise provide your personally identifiable information to any third parties for marketing purposes. We will only share your personally identifiable with third parties to carry out your instructions and to provide specific services. For instance, we may use a credit card processing company to bill users for subscription fees. These third parties will not retain, share, or store any personally identifiable information except to provide these services and are bound by strict confidentiality agreements which limit their use of such information.

We may provide aggregated data about the usage of our services to third-parties for such purposes as we deem, in our sole discretion, to be appropriate. We may segment our users by industry, geographic location, company. If you would like to be excluded from the aggregated research or products based upon aggregated data about our users' activities on the site, please email customer service.

Partnering with Other Organizations to Offer Combined Services

MediaPlatform partners with other online services to give you the combined results of both services. For example, we partner with Internet Content Distribution Networks to provide the best hosting and streaming video experience to your viewers. In these cases, your personally identifiable information will only be passed from MediaPlatform to the partner to use the combined service.

Communications Between Users

Many emails you initiate through MediaPlatform, a webcast invitation sent to a non-user for instance, will list your email address and name in the header of the message.

Legal Disclaimer

It is possible that we may need to disclose personal information when required by law. We will disclose such information wherein we have a good-faith belief that it is necessary to comply with a court order, ongoing judicial proceeding, or other legal process served on our company or to exercise our legal rights or defend against legal claims.

Accessing and Changing Your Account Information

You can review the personal information you provided us and make any desired changes to the information, or to the settings for your MediaPlatform account, at any time by accessing the account settings within MediaPlatform. You can also close your account through MediaPlatform. If you close your MediaPlatform account, we may retain certain data contributed by you if it may be necessary to prevent fraud or future abuse, or for legitimate business purposes, such as analysis of aggregated, non-personally-identifiable data, account recovery, or if required by law. All retained data will continue to be subject to the terms of the MediaPlatform Privacy Policy that you have previously agree to. To request that we close your account and remove your information from the MediaPlatform service, please send your request to accounts@mediaplatform.com. Please send your request using an email account that you have registered with MediaPlatform under your name.

Security

In order to secure your personal information, access to your data in MediaPlatform is password-protected, and certain data such as credit card information is NOT stored on MediaPlatform but is instead completely managed by a dedicated credit-card processing vendor. To protect any data that you store on our servers, we also regularly audit our system for possible vulnerabilities and attacks and we use a tier-one secured-access data center.

Changes to this Privacy Policy

MediaPlatform may update this privacy policy. In the event there are significant changes in the way we treat your personally identifiable information, we will display a notice on this site. Unless stated otherwise, our current Privacy Policy applies to all information that we have about you and your account.

Questions or Comments

If you have questions or comments about this privacy policy, please email us at privacy@mediaplatform.com or contact us at:

MediaPlatform
Attn: Privacy Policy Issues
5200 Lankershim Blvd.
Suite 420
North Hollywood, CA 91601

17.3. GDPR Compliance

Rights of European Data Subjects under the General Data Protection Regulation (GDPR)

If you are in one of the EU/EEA countries, beginning in May 2018, you will be entitled to certain rights under the General Data Protection Regulation (GDPR).

Until the GDPR comes into effect in May 2018, you will continue to enjoy the privacy rights under applicable national legislation and the EU Data Protection Directive (Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data).

By visiting the MediaPlatform Websites or communicating with MediaPlatform you consent to the purposes for which we process your Personal Information. We may process your Personal Information if we have other lawful grounds to do so.

You will have a right to withdraw consent to processing, where consent is the basis of processing. For the Personal Information we collect on the MediaPlatform Websites, this means you may withdraw your consent to processing by leaving the MediaPlatform Websites, suspend your account if you have registered on our Websites, and requesting that we delete your Personal Information by contacting us as directed below.

You will have the right to access your Personal Information that we hold and how to process it, under certain conditions.

You will have a right to demand rectification of inaccurate Personal Information about you.

You will have the right to object to unlawful data processing under certain conditions.

You will have the right to erasure of past data about you (your "right to be forgotten") under certain conditions.

You will have the right to demand that we restrict processing of your Personal Information, under certain conditions, if you believe we have exceeded the legitimate basis for processing, processing is no longer necessary, are processing, or believe your Personal Information is inaccurate.

You will have a right to data portability of Personal Information concerning you that you provided us in a structured, commonly used, and machine-readable format, subject to certain conditions.

The Personal Information we collect on the MediaPlatform Websites is not used for automated decision making and profiling, except for automated processes in the context of marketing. As stated above, you can opt-out of direct marketing by MediaPlatform under certain conditions.

You will have a right to complain to a data protection supervisory authority in your country.

To learn more about your rights under the GDPR you can visit the European Commission's page on Protection of Personal Data, at: http://ec.europa.eu/justice/data-protection/index_en.htm

Cross-border Personal Information transfers and the EU-US Privacy Shield
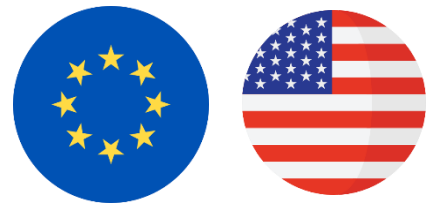
MediaPlatform is a global organization headquartered in the United States and has legal entities, business functions, and systems in countries around the world.

We may share your Personal Information within MediaPlatform and transfer it to countries in the world where we do business, including outside of the EU/EEA and Switzerland. Other countries have privacy laws that are different from privacy laws in your country. Regardless of location, MediaPlatform handles Personal Information as described here, and we take care to ensure that our employees, agents and strategic partners in other countries act in a manner consistent with this privacy notice.

MediaPlatform complies with the EU-U.S. Privacy Shield Framework and the Swiss – U.S. Privacy Shield Framework as set forth by the U.S. Department of Commerce regarding the collection, use, and retention of personal information transferred from the European Union and Switzerland to the United States, respectively. MediaPlatform has certified to the Department of Commerce that it adheres to the Privacy Shield Principles. If there is any conflict between the terms in this privacy policy and the Privacy Shield Principles, the Privacy Shield Principles shall govern. To learn more about the Privacy Shield program, and to view our certification, please visit https://www.privacyshield.gov/

If you are in the European Union, you have a right to access your Personal Information. If you wish to access your information held by MediaPlatform, please follow the contact information at the end of this notice.

MediaPlatform may be liable for onward transfers to third parties in violation of the Privacy Shield Principles.

We will investigate and attempt to resolve requests, complaints, and disputes regarding use and disclosure of your information in accordance with this Privacy Notice and may require further information from you in order to identify you and to address the matter at issue.

People in the European Union, EEA, and Switzerland may submit unresolved complaints to binding arbitration in front of the American Arbitration Association ("AAA") under certain conditions. Information about AAA services can be found at its website: https://www.privacyshield.gov/
The exclusive location for such arbitration shall be Los Angeles, CA, United States.

MediaPlatform is subject to the regulatory authority of the U.S. Federal Trade Commission. The Federal Trade Commission may be contacted at the following address:

Federal Trade Commission
Attn: Consumer Response Center
600 Pennsylvania Avenue NW
Washington, DC 20580

Email: consumerline@ftc.gov
www.ftc.gov

Rights of European Data Subjects under the General Data Protection Regulation (GDPR)

If you are in one of the EU/EEA countries, beginning in May 2018, MediaPlatform will have certain obligations as a data processor towards Account Owners regarding your Personal Information under the General Data Protection Regulation (GDPR).

Until the GDPR comes into effect in May 2018, you will continue to enjoy the privacy rights under applicable national legislation and the EU Data Protection Directive (Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data).

The Account Owners, as data controllers, will be responsible for your protecting your rights under the GDPR.

If you are concerned about your privacy while using service provided by a MediaPlatform Account Owner, you should address requests and inquiries relating to your Personal Information directly to that

Account Owner. If you contact us regarding information on an Account Owner's Account, we may forward your requests or inquiries to the relevant Account Owner.

To learn more about your rights under the GDPR you can visit the European Commission's page on Protection of Personal Data, at: http://ec.europa.eu/justice/data-protection/index_en.htm

Cross-border Personal Information transfers and the EU-US Privacy Shield

MediaPlatform hosts and processes information in the United States, and our staff accesses MediaPlatform in other countries where we conduct business operations.

MediaPlatform complies with the EU-U.S. Privacy Shield Framework and the Swiss – U.S. Privacy Shield Framework as set forth by the U.S. Department of Commerce regarding the collection, use, and retention of personal information transferred from the European Union and Switzerland to the United States, respectively. MediaPlatform has certified to the Department of Commerce that it adheres to the Privacy Shield Principles. If there is any conflict between the terms in this privacy policy and the Privacy Shield Principles, the Privacy Shield Principles shall govern. To learn more about the Privacy Shield program, and to view our certification, please visit https://www.privacyshield.gov/
If you are in the European Union, you have a right to access your Personal Information. If you wish to access your information held on a MediaPlatform Account, please contact the relevant Account Owner (the data controller).

The Account Owners, as data controllers, are responsible for your protecting your rights under the law applicable to you.

MediaPlatform may be liable for onward transfers to third parties in violation of the Privacy Shield Principles.

We will investigate and attempt to resolve requests, complaints and disputes regarding use and disclosure of your information in accordance with this Privacy Notice which have not been resolved by the Account Owner. We may require further information from you in order to identify you and address the matter at issue.

People in the European Union, EEA, and Switzerland may submit unresolved complaints to binding arbitration in front of the American Arbitration Association ("AAA") under certain conditions. Information about AAA services can be found at its website: http://go.adr.org/privacyshield.html
The exclusive location for such arbitration shall be Los Angeles, CA, United States.

MediaPlatform is subject to the regulatory authority of the U.S. Federal Trade Commission. The Federal Trade Commission may be contacted at the following address:

Federal Trade Commission
Attn: Consumer Response Center
600 Pennsylvania Avenue NW
Washington, DC 20580

Email: consumerline@ftc.gov
www.ftc.gov

18.   Integrations

- Microsoft SharePoint
- Webex
- Learning Management Systems
- And many more

19.   Citrix Ready

MediaPlatform Webcaster received the "Citrix Ready" certification for XenDesktop. Webcaster utilizes **HDX MediaStream Redirection for Flash**.

HDX Flash Redirection is a technology that allows Flash-based videos to be rendered on the end user device (Windows or Linux) while appearing seamlessly integrated with the server-side web browser. HDX Flash provides a better user experience by offloading Adobe Flash rendering from the Citrix XenApp or XenDesktop server to the user device. The objective is to offload 80% or more of websites that leverage Flash. When Adobe Flash content cannot be redirected to the user device, the technology attempts to gracefully fall back to server-side rendering. Web sites that cannot use Flash Redirection are blacklisted, either automatically by the software or manually by a system administrator.

Users have the ability to stream HDX Flash based website content over ICA. This allows you to use the processing power of the workstation of the user to run flash based streaming video experience through Microsoft Internet Explorer, even with high definition video content; reducing the need to use server-side resources.

MediaPlatform Webcaster is "Citrix Ready" certified:
https://citrixready.citrix.com/mediaplatform-inc/mediaplatform-Webcaster.html

MediaPlatform partner overview on Citrix Marketplace
https://citrixready.citrix.com/mediaplatform-inc.html

20. Support

20.1. Customer Support

Hand-Off. After the Service is successfully implemented and the initial training is complete, the MediaPlatform Implementation Team will hand-off ongoing support responsibilities to MediaPlatform's Customer Support (aka "Client Service" or "Support") department.

Proper Use of Support. MediaPlatform's Customer Support is intended to assist Customer's Designated Support Contacts in the normal operation and routine use of the Service and in answering questions that relate specifically to use of the Service. If the Customer encounters an error or bug, Customer Support will work with the Customer to try to diagnose and fix any problem attributable to the Service.

Improper Use of Support. MediaPlatform Support is not, however, intended to be accessed by Customer for assistance with issues beyond the scope or not directly related to the use of the Service. If Customer needs assistance with such issues, then MediaPlatform may very well be able to help, but it should be handled, for an additional fee, under an appropriate Statement of Work.

If MediaPlatform reasonably believes that a problem reported by Customer may not be due to an error in MediaPlatform's Service, but to some other component within Customer's environment, then MediaPlatform will so notify Customer, and MediaPlatform will not proceed further, unless requested to do so in writing by Customer. If, upon resolution of the problem, it is determined that the error was not, in fact, due to MediaPlatform's Service, then Customer may be invoiced, at the then standard rates, for MediaPlatform's time spent working on the unrelated problem.

Duty to Assist. Customer is responsible for providing sufficient assistance to enable MediaPlatform to try to diagnose or reproduce problems with the Service that the Customer encounters. Such Customer assistance should always include a detailed description of the problem but could also include other information that MediaPlatform might reasonably request, such as browser type and version, debug or log files, and results of diagnostic tests.

20.2. Support Tiers
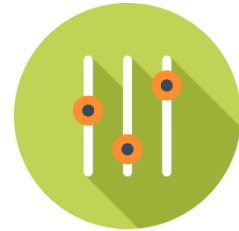
MediaPlatform offers two levels of ongoing Support: Basic and Premium, with different hours of operation and available methods of communication.

Support Level	Quantity of Support	Support Hours	Support Modes
Basic	Unlimited	Normal business hours: 9:00 a.m. to 9:00 p.m. EST Mon – Fri, excluding holidays	1) Phone – **NOT** included in Basic plan, but available for $500 per Support Case 2) Email 3) Zendesk trouble ticket form 4) Online knowledge base
Premium	Unlimited	24 hours per day x 7 days per week	1) Phone 2) Email 3) Zendesk trouble ticket form 4) Online knowledge base

20.3. Customer Support Contact Info

Ways to contact MediaPlatform Customer Support:

- Online: https://support.mediaplatform.com Zendesk case submission form
- Email: support@mediaplatform.com
- Phone: +1 310-909-8410   Voice menu Option 2

20.4. Priority Levels and Response Times

When reporting problems or seeking assistance from MediaPlatform's Support, Customer should use the following criteria to determine which of the four (4) priority levels to assign:

Priority Level	Criteria	Recommended Mode	Response Time
Low Priority	A situation where the problem is minor or annoying, but not pressing and not important.	Zendesk, Email or Phone	Within 48 hours
Medium Priority	A situation where the problem needs to be addressed but does not rise to the level of a High or Urgent Priority.	Zendesk, Email or Phone	Within 24 hours
High Priority	A situation where there is significantly degraded performance or impaired functionality, but where Customer is still generally able to accomplish its objective, perhaps by using a workaround solution.	Phone	Within 4 hours
Urgent Priority	A situation where the Service is inoperable or critical functionality is not working correctly, particularly in the case of a live webcast event.	Phone	Within 1 hour

For Premium Support plan Customers, help on Urgent or High Priority Cases **should be requested by phone** to ensure the most rapid response.

20.5. Support Process and Escalation Path

Support Case. When a Customer reports a problem, the MediaPlatform Support Specialist will open a Support Case ("Case") within MediaPlatform's Zendesk online Customer Support portal, if the Customer has not already done so.

Case Tracking. If the Specialist cannot resolve the Customer's Support Case right away, then the Case remains "Open" and is tracked. Customer Support will continue to work Open Cases, according to their priority level, and will escalate them as appropriate. Once resolution is complete, the ticket is closed as "Resolved" and the Customer is automatically notified.

Case Status. Customers can access their Support Cases in the Zendesk system at any time in order to check on the current status.

Escalation. While it is not possible to guarantee every Support Case can be resolved as quickly as both MediaPlatform and the Customer might like, MediaPlatform makes every possible effort to address and resolve all Urgent and High Priority problems as quickly as possible. Should a Support Case not be resolved in a timely fashion, the Customer escalation procedure is as follows:

Escalation	Contact	Contact Info
1	Customer Support	support@mediaplatform.com (310) 909-8410 x 2
2	Bill Accola, Director of Customer Support	baccola@mediaplatform.com (310) 909-8410 x665
3	Eugene Kovnatsky, CTO	ekovnatsky@mediaplatform.com (323) 209-2640
4	Mike Newman	mnewman@mediaplatform.com (310) 437-9551 (mobile)

21. Full-Service Event Professional Services

The MediaPlatform Webcast Event Services team has years of helping the large enterprise and government agency create engaging, interactive presentations. We provide you with a service that allows you to reach anyone, anywhere on any device with live video and audio and PowerPoint webinars. Due to budget constraints, most government agencies struggle to deliver high-impact communications to their customers and employees.

Our full array of solutions reliably delivers communications, training, and knowledge management services — while keeping costs under control and maximizing resources. The experienced webcast events team at MediaPlatform tailors each engagement specifically to your organization's requirements. Each of our webcast event services professionals is cross-trained to help you solve any problem or answer questions you may have. Our webcast event services group responds quickly to your concerns, allowing you to leverage our software optimally for video or audio communication.

Full Service Highlights
- Experienced In-house Webcast Producers
- Coordinate All Aspects of Live Web Event
- On-site Production Management & Encoding
- Customize Branding & Design of Web Consoles
- Production Playbook for Events
- Webcaster Training for Customer In-house AV
- On-site Webcast Support
- Remote event monitoring services

 Event Management: *Assist the customer in determining event goals and requirements. Pre-production planning/meetings, presenter training, live event production and support.*

 Pre/Post Production: *Editing of video and audio files, signal processing for optimum playback quality within an on-demand or live event.*

 "Sim-u-live" Events: Video *content is pre-recorded and encoded for playback, simulating a live source to a live web audience.*

 Training & Consulting: *Our experienced producers will train customers and recommend software/hardware equipment for specific applications.*

22.   Implementation Plan

MediaPlatform has extensive experience deploying its webcasting solutions in large scale, demanding enterprise environments. We have a proven history of success engaging with multiple stakeholder groups at client organizations. Our professional services engagement process and staffing approach is designed to produce a productive dialogue, clear project milestones and accountability for project results. No two

situations are exactly alike. In the case of Customer, we envision the implementation process consisting of the following main phases:

Order	Stages	Key Tasks	Deliverable	Customer stakeholders and Resources
1	**Project requirements review**	• MediaPlatform engagement team and key Customer stakeholders develop an agreed upon project plan and schedule of milestones and deliverables. • project requirements review	Report to be used in project planning and milestone validation.	Key project contacts:
2	**Webcaster & On Demand Implementation**	• Implementation of Webcaster & On Demand • Testing	Platform provision for Customer, ready for use and custom integration.	Key project contacts
2	**Adobe AMS & Edge Configuration (if required)**	• Configure and install Edge remotely • Configure and install Smartpath AMS remotely	AMS & Edge VM(s) Installed	Key project contacts, Network
3	**Configure and Test Smartpath**	Smartpath P2P Multicast/IP-Multicast and HTTP Unicast rules	Smartpath Multicast Fusion complete and enabled in Customer network	Key project contacts, Network
3	**Directory Integration - AD/LDAP/SAML/ADFS**	• Customer and MediaPlatform will generate and exchange XML • Customer sends 2 test logins. • MediaPlatform set up test project and login	SSO for Employees	Key project contacts, IT Security / ID Mgmt. Personnel
3	**Webcaster & On Demand Theme Configuration**	• Create Webcaster template • MediaPlatform will provide simple instructions to change the color scheme and font style in On Demand	Webcaster template Instructions for changes via CSS style sheet in On Demand	Key project contacts
4	**Testing: SAML Webcaster + On Demand Distribution**	Test all features and functionality • User login/authenticate to SAML • Live and on-demand stream testing • Peer-Assisted Multicast and HTTP Unicast/IP-Multicast Test on devices	Testing plan and report	Key project contacts and selected IT personnel
5	**User & Admin Training**	If required per project plan	User and Admin training	Key project contacts

The following describes a standard implementation procedure:
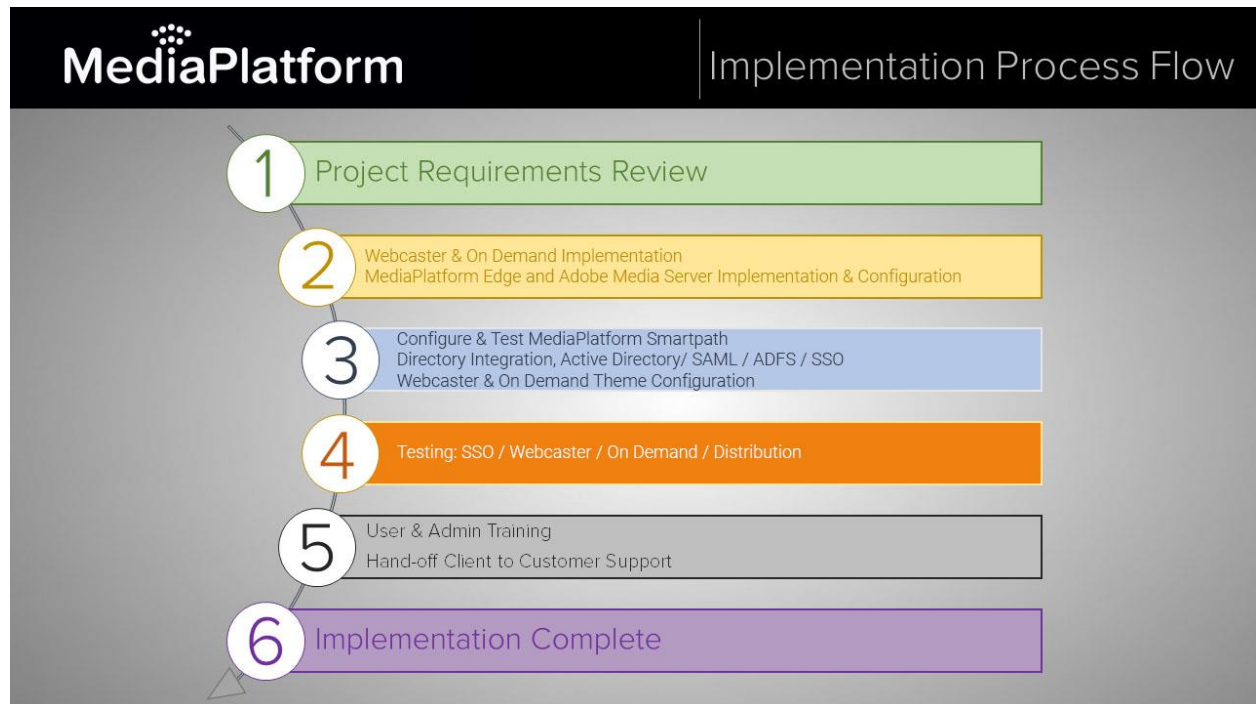
Stage 1 – Project Kick-Off

The MediaPlatform Implementation Coordinator will hold internal calls to discuss the details of your implementation. Internal calls will include the following team members: The appropriate MediaPlatform Director of Sales, a MediaPlatform Sales Engineer, and MediaPlatform Support/Installation Engineer, and a MediaPlatform Training Instructor. Once MediaPlatform internal conference calls are completed, we initiate a "Kick-Off Meeting" with your team.

Using the MediaPlatform Pre-Installation Checklist, the Implementation Team will work with you:
1. Investigate your network and system architecture.
2. Determine the specifications of your uses of the Platform.
3. Discuss deployment environments.
4. Determine contacts (Business, content, IT, other).
5. Determine appropriate installation method

Upon execution of contract or agreement, MediaPlatform will deliver the MediaPlatform Welcome Package (via email) that includes:
1. Hardware and software requirements
2. Webcaster and On Demand Users Guide
3. Implementation Project Plan
4. Schedule dates and milestones for install and training.

Stage 2 – Webcaster, On Demand, Distribution Server Implementation & Configuration

On-site or remotely, the Professional Services Engineer will:

1. Add/Configure On Demand & Webcaster instances in the cloud (+ additional solutions like VBI + Bridge)
2. Set up deployment environments & Implement/Install Edge and AMS servers within the customer network

Stage 3 – Configure Distribution | SSO Integration | Theme Customization
Professional Services will
1. configure Smartpath rules with Network/Subnet Information provided by customer
2. integrate SSO (SAML 2.0)
3. create the Webcaster template based on client requirements
4. provide instructions to change On Demand portal theme

Stage 4 – Testing
Post-install testing (using Post-install checklist)
1. Webcaster
2. On Demand
3. Additional solutions (SharePoint integration, VBI, Bridge)

Stage 5 – User & Admin Training
MediaPlatform User Training and Administrator Training will be delivered.

Stage 6 – Implementation Complete
MediaPlatform will hand-off client internally to Customer Support

23.   **MediaPlatform Training Services**

The MediaPlatform can provide the following training services:

- Comprehensive Training Modules for new customers
- Remote Training for new or existing customers that have had formal training
  - o Remote Training will be held via cloud video conferencing platform
- Onsite Training for new or existing customers that have had formal training
- Training for MediaPlatform Integrations
  - o Custom Webcaster Themes
  - o 3rd Party Integrations (Microsoft SharePoint, Cisco Webex, etc.)

Standard training modules will include:

	Webcaster	MediaPlatform's enterprise software enables the user to easily produce, broadly distribute and monitor richly interactive live and on-demand webcasts with presenters in one or multiple locations. The user can reach large audience with video presentations that feature streaming video, PowerPoint® slides, audio, surveys, polls, and more.
	On Demand	MediaPlatform provides the industry's most advanced corporate YouTube, helping organizations leverage streaming media to improve corporate communications, enhance training and enable collaboration. On Demand is the central location where employees and partners can view, capture, search, rate, and share video through an intuitive, channel-based online video portal that can be accessed via desktop, tablet or smartphone.
	Bridge	MediaPlatform Bridge can be used in conjunction with any group video system leveraging the SIP protocol. Bridge sends an RTMP stream to MediaPlatform Webcaster, allowing organizations to take advantage of the distribution and network optimization capabilities of an enterprise video webcasting solution for broader delivery of videoconference sessions.

**Video Business
Intelligence**

MediaPlatform Video Business Intelligence (VBI) is the world's first BI platform focused on offering prescriptive and predictive analytics for live streaming inside the enterprise. VBI collects the most relevant data for all Webcaster events in real-time and provides deep analytics in an easy to use and customizable Quality of Experience (QoE) dashboard.

23.1. Training Modules Outline

MediaPlatform provides the below outline for the different training modules. Based on customer requirements, the training modules can be shaped to meet different needs.

23.2. MediaPlatform Webcaster Training Module

Duration: 4 hours (2 hours per day)

23.2.1. Objective

The below five sections will be covered during the MediaPlatform Webcaster Training

1. Creating Webcaster Projects
2. Running Webcaster Projects
3. Archiving Webcaster Projects
4. Analytics
    a. MediaPlatform Webcaster Analytics & Reports
    b. MediaPlatform Video Business Intelligence
5. Getting Help
6. MediaPlatform Support Portal / Knowledge Base

a. https://support.mediaplatform.com

23.2.2. Materials & Resources Needed
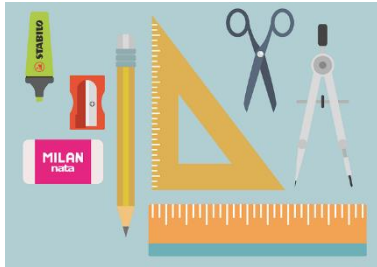
- PowerPoint w/o animations (16:9 or 4:3)
- 2 Company Logos as png/jpg/gif (234x60 & 150x80 pixels)
- PDF to upload into asset manager
- Encoding Software with live or on-demand video source
- Individual computer for each trainee (preferred)
- BlueJeans web or desktop client for training sessions

23.2.3. Training Outline
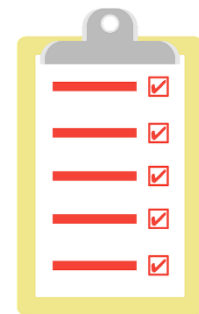
23.2.3.1.   Session 1:
- Creating Webcaster Projects
- New & Cloned Projects
- Adding Event Details
- Uploading & Managing Assets
- Basic Registration
- Creating Confirmation & Reminder Emails
- Creating Production Team Emails
- Creating Polls and Surveys (if applicable)
- Running a Webcaster Event
- Managing Webcaster Present Module
- Connecting Encoders
- Connecting Bridge
- Live Control Editor for non-producers
- Archiving Webcaster Projects
- Editing within Webcaster
- Resetting an Archive

23.2.3.2.   Session 2:

- Analytics
- Interpreting Webcaster Analytics
- Exporting Analytics
- Getting Support
- Phone/Email/Support Portal
- Additional support videos
- Q&A
- MediaPlatform Support Portal & Knowledge Base
  - https://support.mediaplatform.com

23.3. MediaPlatform On Demand Training Module

Duration: 1 hour

23.3.1. Objective - During this training, we will cover 5 sections:

1. Channels
2. Asset Creation
3. Admin Settings
4. Analytics
5. Getting Help
6. MediaPlatform Support Portal & Knowledge Base
   a. https://support.mediaplatform.com

23.3.2. On Demand Assets

On Demand supports several different asset types, which allow for the inclusion of a variety of content types in the system. The different types are:

Upload - *An upload* is a video file that is loaded directly into the On Demand video portal.

Capture - *Capture* uses the local webcam from a user's computer to record an asset.

Embed – *Embed* utilizes a specific embed code. YouTube, Vimeo and other popular sites have 'sharing' options on videos they host that include an embed code. To do so, select the Embed option in On Demand to use enter one of these third party embed codes. When an embed code is used to create an asset, the asset can be viewed inside of the On Demand portal. It is important to realize that factors such as view times and asset duration, etc. will not be collected by On Demand for embedded assets. The reason is because the MediaPlatform player is not utilized to play the video.

URL – Creating an asset using a *URL* is also possible. Some third-party video sites do not make embed codes available, but you might still want to include the video in the On Demand portal. Creating an asset using the URL create method allows that. When a user accesses a URL asset, the user will 'click out' of the On Demand portal and view the content on the site that is hosting the URL. Again, it is important to realize that view times and asset duration, etc. won't be collected in On Demand since the asset is not being viewed inside of the On Demand portal. However, clicks to the asset will be shown in On Demand analytics.

Webcaster URL - If a Webcaster asset is being placed into On Demand, the direct URL to the webcast can be entered. It's important to note the best practice for publishing a Webcaster project to On Demand is to directly publish the event from Webcaster to On Demand via the publishing integration in Webcaster. Publishing the Webcaster event directly from Webcaster allows for additional data to be collected that may be useful in analytics.

23.3.3. Training Outline

- Channels
- Public
- Private
- User Channel
- Playlists
- Asset Creation
- Different types of assets
- Admin Settings
- Assets
- Admin
- Users
- Roles
- Other
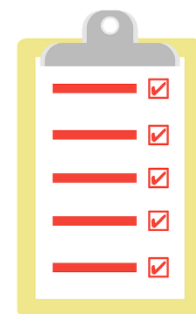
- Analytics
- Exporting Analytics
- Interpreting Webcaster Analytics
- Getting Support
- Phone/Email/Support Portal
- Additional support videos
- Q&A