TechNote – AltitudeCDN™ Multicast+ and OmniCache™ Support for Citrix

Version 1.0

AltitudeCDN[TM] Multicast+ and AltitudeCDN OmniCache[TM] have been certified as Citrix Ready for Citrix platforms that support Browser Content Redirection, bringing secure video multicasting and caching to Enterprise XenDesktop and XenApp Environments.

This guide describes how to configure your Citrix environment to work with Multicast+ and OmniCache.

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Introduction

During live (or video on demand (VOD) published as live) events, large numbers of viewers each attempt to connect separately to external internet content delivery network (CDN) servers, creating a high demand on internal and external network resources. This can lead to poor video quality, and possible service denial for event viewers and other network clients.

To avoid these issues, Citrix customers can use AltitudeCDN Multicast+ and AltitudeCDN OmniCache so that resource-intensive network video traffic is processed locally by each Citrix Endpoint, rather than traversing the network to the centralized Virtual Delivery Agent (VDA).

AltitudeCDN Multicast+

AltitudeCDN Multicast+ is a patented (US Pat. 9,516,390) solution that brings multicast support to any live video deployment that uses HTTP Live Streaming (HLS) or Dynamic Adaptive Streaming over HTTP (DASH).

By using Multicast+ Senders and Receivers, a video event is presented on the enterprise network as a single multicast stream that is shared simultaneously by multiple viewers. This allows the video event deployment to scale to very large audiences, while conserving internal network bandwidth.

AltitudeCDN OmniCache

AltitudeCDN OmniCache is a robust enterprise video caching-proxy that enables the efficient delivery of HLS, DASH, and MP4 progressive-download, behind the firewall.

OmniCache provides a scalable, distributed platform that reduces the volume of upstream requests to the internet, serving local copies of video content to large numbers of intranet enterprise clients. OmniCache provides high-quality, low-latency video, while conserving limited enterprise Wide Area Network (WAN) resources.

Citrix Ready Certification for AltitudeCDN

Citrix Ready Verification for AltitudeCDN allows you to bring secure video multicasting and caching to Enterprise XenDesktop and XenApp Environments.

Citrix application and desktop virtualization solutions allow employees the freedom to work from anywhere by allowing IT departments to securely deliver Windows, Linux, web and SaaS apps plus full virtual desktops to any device, from any cloud.

Ramp is a member of the Citrix Ready program, designating that AltitudeCDN successfully meets criteria set by Citrix to verify the compatibility of our joint solutions. Organizations using Citrix XenDesktop and XenApp can ensure fast, reliable delivery of enterprise video directly to users' endpoint machines while minimizing bandwidth consumption across the network and through the firewalls.

Requirements

The sections below outline what you need to use Multicast+ and OmniCache with Citrix.

Citrix Requirements

The Citrix requirements include the following Citrix platforms that support Browser Content Redirection:

Item	Recommendation
Citrix XenDesktop	Citrix Virtual Delivery Agent 7.16 or later (part of Citrix XenDesktop 7.16 or later), running on any of the following: • Windows 10 (1607, 1703, or later). • Windows Server 2012R2. • Windows Server 2016.
Citrix Receiver	Citrix Receiver 4.10 for Windows or later.

AltitudeCDN Multicast+ Requirements

The Multicast+ requirements include:

Item	Recommendation
Multicast+ Sender	Multicast+ Sender v1.9 or later – The Sender must be installed and running on an on-premise Windows or CentOS platform, positioned within the customer network so multicast traffic can reach the audience. For more information, see the *AltitudeCDN Multicast+ Deployment Guide*.
Multicast+ Receivers	Multicast+ Windows Receiver 1.9 or later. The receivers must be installed on each client viewing device prior to the event. For more information, see the *AltitudeCDN Multicast+ Deployment Guide*.

AltitudeCDN OmniCache Requirements

The OmniCache requirements include:

Item	Recommendation
OmniCache	OmniCache v1.8 or later – The OmniCache must be installed and running on an on-premises Windows or CentOS platform, positioned within the customer network so traffic can reach both the audience and external video source origin. For more information, see the *AltitudeCDN OmniCache Deployment Guide*.
Enterprise DNS	Enterprise Domain Name System (DNS) configuration identifying the IP address of the internal OmniCache node. Geo-aware DNS may be employed to provide location-specific OmniCache routing. OmniCache routing may also be used to distribute load to alternate OmniCache nodes.

Using Citrix with AltitudeCDN Multicast+ and OmniCache

Note: For a description of Citrix-related terminology, see Key Citrix Terminology.

To use Citrix XenDesktop and XenApp with AltitudeCDN, high-bandwidth video network traffic from OmniCache or Multicast+ must be redirected to target the Endpoint/Receiver directly, rather than go to the Virtual Delivery Agent (VDA).

Browser Content Redirection

The Browser Content Redirection feature redirects the contents of a web browser to a client device, offloading browser processing to the Endpoint:

- The browser continues to run on the VDA, but the main view port is replaced with a blank canvas. The Citrix Receiver then instantiates a browser engine on the Endpoint, overlaying the blank canvas with the Receiver's user interface.
- As a result, web page execution, and network traffic interactions, occur on the Endpoint.

Browser Content Redirection is configured by creating policies within Citrix Studio, and is enabled on a URI server basis (wildcards are permitted).

Note:
- *Browser Content Redirection is not currently supported on Endpoints running under Mac OS, Linux, and Windows Embedded.*
- *Browser Content Redirection is currently only supported in Microsoft Internet Explorer, and is not supported in Microsoft Edge, Mozilla Firefox, or Google Chrome.*
- *OmniCache only requires Browser Content Redirection (including thin clients for Citrix).*
- *Multicast+ additionally requires that a Multicast+ Receiver is installed on the Endpoint.*
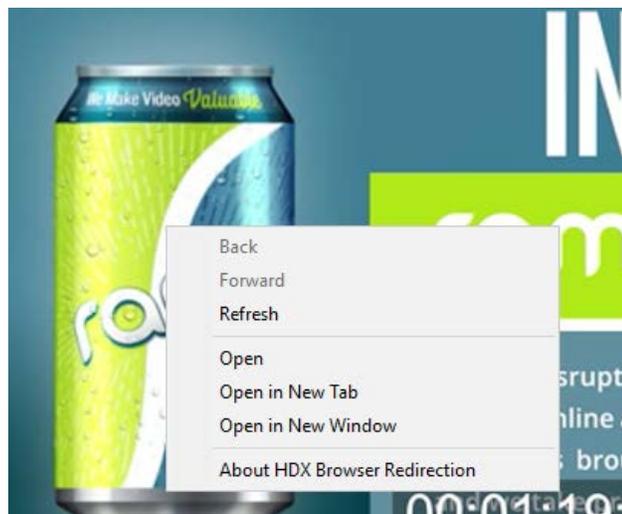
Configuring Browser Content Redirection

To configure Browser Content Redirection in Citrix Studio:

1. Create or update Citrix Studio policies that do the following:
   - Enable Browser Content Redirection.
   - Set the Browser Content Redirection ACL to include those HTTP(S) servers from which you will serve web pages that use AltitudeCDN (for example, https://livetools.ramp.com; https://livetools.ramp.com/*; etc.).
   - If a proxy is required for the browser engine, you will also need to create a Browser Content Redirection Proxy Configuration.

For example:
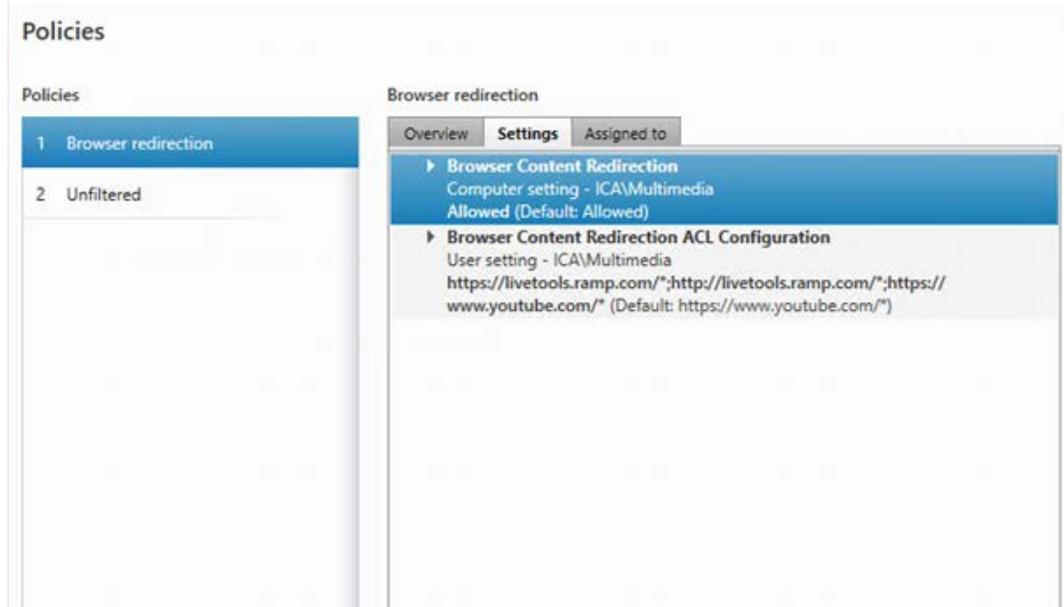
2. Run gpupdate on the Citrix Controller.
3. Reboot the Virtual Delivery Agents.
4. To verify that the Browser Content Redirection is working correctly:
   - Go to a player page.
   - Right-click on the player.
   - You should see "About HDX Browser Redirection" displayed within the menu. For example:

Note:
- *You can also use network traffic to verify that Browser Content Redirection is working correctly.*
- *You will lose access to the Networks tab in Developer Tools. The Network tab shows no traffic pertaining to the browser on the VDA, and there is no equivalent of the Network tab in the Citrix Receiver's browser engine instantiation.*

Key Citrix Terminology

Citrix-specific terms include the following:

Term	Description
Browser Content Redirection	Redirects the contents of a web browser to a client device, and creates a corresponding browser embedded within Citrix Receiver. This feature offloads network usage, page processing, and graphics rendering to the endpoint. Doing so improves the user experience when browsing demanding webpages, especially webpages that incorporate HTML5 or Flash video.
Citrix Controller	The controller for a Citrix farm.
Citrix Studio	The configuration management platform for Citrix where you can configure policies.
Endpoint/Citrix Receiver	The user's physical local machine is the Endpoint, upon which the Citrix Receiver runs and connects to an allocated Virtual Delivery Agent (VDA). The screen is transmitted from the VDA to the Citrix Receiver, and the user's actions are transmitted from the Citrix Receiver to the VDA.
Virtual Delivery Agent (VDA)	The hosts that run a user's desktop session. To use AltitudeCDN, the VDA must support Browser Content Redirection (Virtual Delivery Agent 7.16 or later).
XenDesktop	The primary Citrix desktop virtualization platform.