



The market-leading Velocix Content Delivery Network (CDN) solution enables video service providers to efficiently distribute and stream live, on-demand, and time-shifted video content to consumers on a wide range of viewing screens, including TVs, mobile devices, and PCs. Using a multi-tier array of caching servers placed inside of an operator's network, Velocix's CDN software can intelligently position popular content progressively closer to the consumer to optimally utilize network resources, decrease transit costs, and deliver the highest quality viewing experience on every screen.

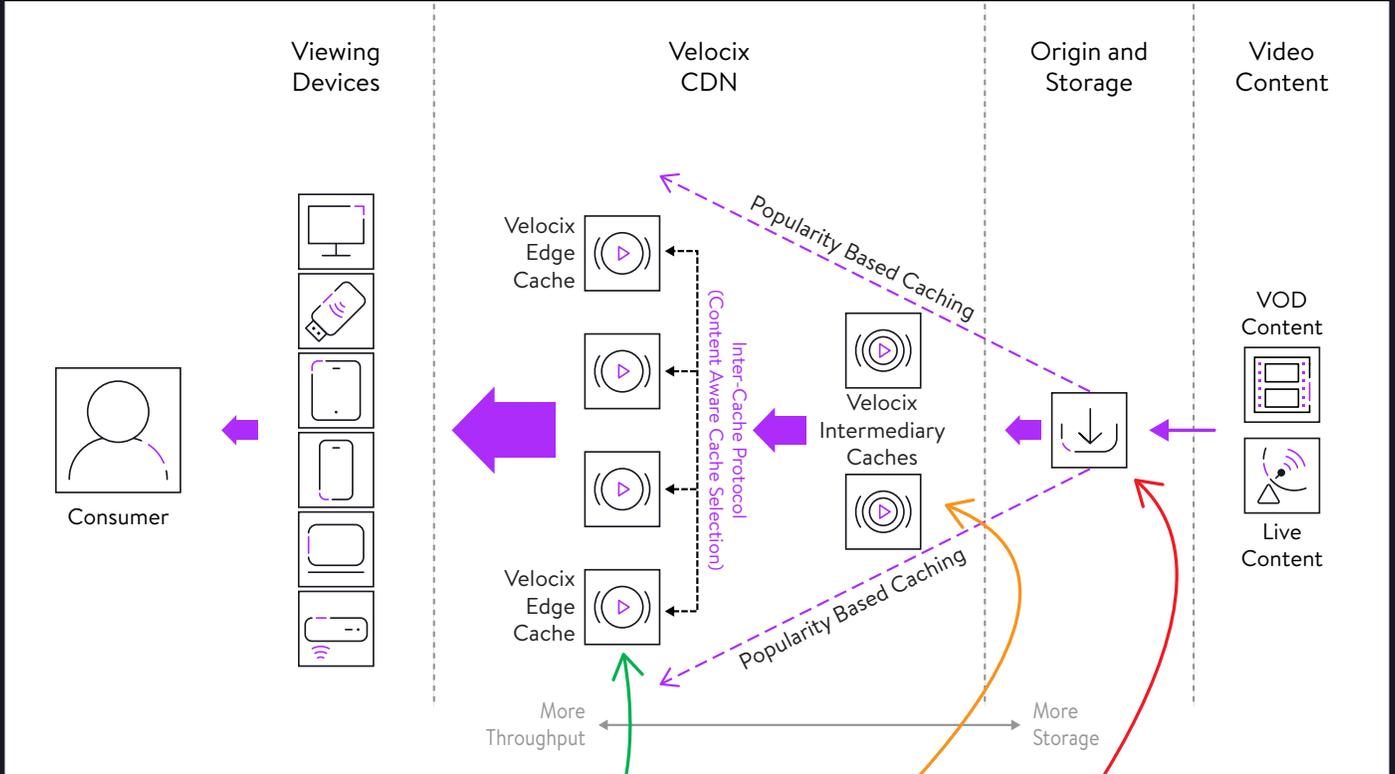
The market for streaming video services is booming. Consumers are watching video more often, and for longer durations, on a wider array of devices than ever before. With rising interest from consumers, the opportunities for video service providers to tap into this growth are significant, ranging from generating new multi-screen subscription revenues to monetizing burgeoning viewership with addressable video advertising. But the challenges of supporting an increasingly fragmented consumer device landscape and providing access to an ever expanding inventory of content are equally significant. Beyond the many protocols and video formats required to reach new screens, distributing media content across a geographically disperse network can be difficult and costly, especially as content volume and variety intensifies. Specifically, as stream demand and content libraries grow, network bandwidth and storage requirements can lead to mounting infrastructure costs and maintenance headaches. Fortunately, Velocix CDN provides a simpler and more cost effective way to scale out multi-screen video services by intelligently managing how content assets are distributed and cached within the network.

## Demand-Driven Content Distribution

Velocix CDN technology automates multi-screen content distribution workflows using actual consumer demand to drive how content navigates through the network. The CDN relies on a series of hierarchical caching servers that are placed into an operator's network at locations progressively closer to the end consumer. When consumers request content on their connected devices, including TVs, PCs, and mobile devices, the CDN responds by pulling content through the network hierarchy from a source origin server in order to fulfill the consumer's request. Consumer requests are served from the edge of the network using an individual stream, which may be dynamically tailored to suit the consumer, viewing device, and application. As content is delivered, patented software algorithms selectively cache content at various tiers in the network based on relative popularity, service type, and other pertinent factors. Higher popularity content is cached closer to the consumer, enabling the CDN to fulfill subsequent requests for the same content from the network edge, preserving upstream network resources. Less popular content is stored deeper in the network to reduce asset replication and save on storage costs. Network-aware intelligent request routing software selects the optimal server to fulfill stream requests based on geographical proximity to the consumer, traffic load, and other real-time conditions, to deliver better efficiency and a higher quality of experience. Request routing and automated resiliency features also detect and direct traffic around unexpected network or system faults automatically to prevent stream interruption. Working in harmony together, Velocix CDN software modules ensure that consumers receive an optimal viewing experience on every screen, while reducing the operational burdens placed on the video service provider.

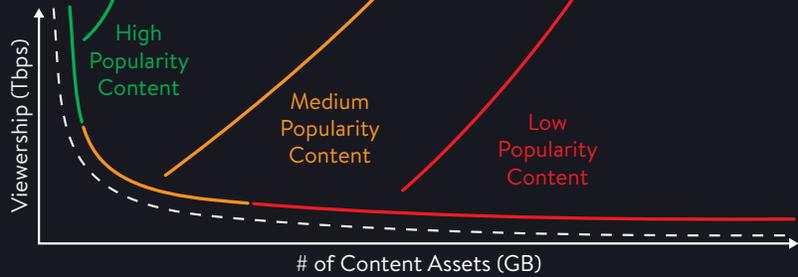
# Velocix CDN

Simultaneously stream adaptive bit rate and classic video formats using a multitude of protocols to deliver services to every connected viewing device.



## Hierarchical Caching

Content is intelligently positioned within the CDN based on popularity and service type to improve efficiency and deliver a better quality of experience to consumers.



## Example Velocix CDN Customers



LIBERTY GLOBAL



vodafone



Telefonica



## Supported Applications.

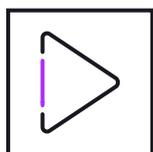
Video service providers can use the Velocix CDN to support several different types of applications.

### Multi-screen Video Services

Deliver live, on-demand, or time-shifted video services like cloud DVR to a broad array of consumer devices

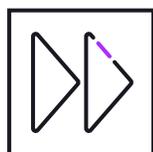
The Velocix CDN solution is an ideal choice for network service providers interested in supporting advanced video streaming applications. With its ultra high-density performance, intelligent request routing, and iron-clad resiliency, Velocix CDN delivers the best-in-class features operators need to launch on-net or OTT services. Native support for multiple streaming protocols and content formats ensures compatibility with today's most popular consumer electronics devices, including smart TVs, Apple and Android devices, PCs, gaming systems, and also classic set-top boxes. Velocix edge caches are able to stream content simultaneously to both Internet connected devices and classic set-top boxes using a common source video format, unifying content workflows and reducing operational complexity. Many of the world's largest and most successful video service providers trust Velocix CDN to support their next generation service offerings.

### Common Applications



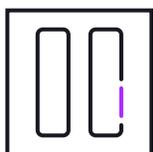
#### Live

Present live programming on any connected screen.



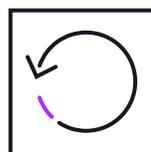
#### VOD

Stream movies and TV shows at the click of a button.



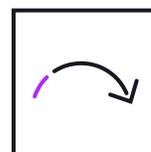
#### Pause/RW Live

Provide interactive control over live video content.



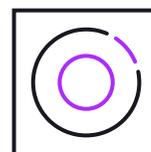
#### Restart

Let consumers jump back to the start of a live video program.



#### Catch-Up

Make operator recorded shows available for anytime viewing.



#### Cloud DVR

Stream personal content recorded by the consumer in the network.

### Wholesale CDN

Lease video capacity to third party tenants using shared CDN resources

With support for multi-tenancy, the Velocix CDN can be used to offer white label CDN services to third party companies seeking a way to cost effectively distribute their content. Capacity on the CDN can be metered and sold based on actual usage, with each tenant's content and data being managed separately within a shared network of servers and storage.

### Private CDN

Let Velocix host and manage a dedicated CDN in the cloud to support OTT and direct to consumer services

Velocix supplies fully-hosted private CDN services to content owners, broadcasters, programmers and OTT service providers that don't operate their own network, but are interested in delivering an error-free viewing experience. Private CDN features pay-as-you-go pricing, making it easy to get started and simple to scale out. Unlike public CDNs that prioritize resources across many tenants, Velocix's private CDN assigns dedicated caching and streaming resources to each tenant. This yields higher session success rates and better video quality, as well as offering granular control over the CDN and deeper visibility into consumer metrics. Velocix continuously monitors CDN performance to ensure all customers receive the highest quality of service.

### Download Services

Use the CDN to efficiently download content, applications, software updates, and firmware to consumer devices

The Velocix CDN may be used to efficiently download file-based content, including media content, software applications, software updates, and firmware. Using a CDN to download this type of content reduces load on the network by caching and delivering popular file assets from servers positioned close to the consumer. The CDN seamlessly handles simultaneous auto-update requests from device clients, load balancing the demand across the network to ensure optimal efficiency and download performance.

## Solution Features

### Unified Streaming

Simultaneously stream adaptive bit rate and classic video formats using a multitude of protocols to deliver services to every connected viewing device.

#### Supported Video Formats

CMAF	MPEG-DASH
HLS	Smooth Streaming
MPEG-TS	

### Multi-Service and Multi-Device

Use the Velocix CDN to support a wide variety of video applications on multiple screens, including TVs, PCs, tablets, smartphones, and other connected devices.

#### Example Applications

Live	Video On Demand
Pause/Rewind	Restart
Catch-up	Cloud DVR

### Edge Caching

Cache popular content at the edge of the network to preserve network bandwidth and improve session quality. Cache management is performed by Velocix's patented HiFi caching algorithm.

### Intelligent Request Routing

Reduce transit costs and improve stream quality by routing session requests to the optimal edge caching servers based on geographical proximity, current traffic loading, and other relevant factors.

### Tiered Storage

Store low popularity content deeper in the network to reduce aggregate storage capacity requirements and save cost on hardware.

### Automated Resiliency

Detect and route traffic around fault conditions to prevent session interruptions and ensure consumers receive the highest quality viewing experience.

### Analytics and Reporting

Track consumer behavior and gain a better understanding of how consumers connect with content across multiple viewing devices.

### Session Personalization

Integrate with addressable advertising solutions and Velocix's Personalization Platform to customize individual streams and generate new revenue.

### 100% Software

Deploy Velocix CDN software on bare metal or in a virtualized environment. The Velocix CDN runs on standard commercial hardware platforms.

### High Density Performance

Enjoy the industry's highest performance density using COTS hardware platforms. Deliver more streams per rack unit and save on power and environmental costs.

### Open

Easily integrate the Velocix CDN into a best of breed ecosystem using open, standards-based interfaces for all major functions.

### Pre-Integrated

Launch quickly using the many qualified partners who have pre-integrated with the Velocix CDN solution and successfully proven interoperability in the field.

### Field Proven

Trust Velocix to install, integrate, and deploy the CDN with the speed and expertise required to make your project a success. Velocix has proven experience launching complex multi-vendor projects on-time and under budget.

## Solution Benefits

### Cost Savings

Reduce expenditures on network and storage resources by efficiently distributing content based on actual consumer demand and intelligently caching the most popular content assets closer to consumers.

### Quality of Experience

Stream video content from the CDN edge to eliminate buffering, reduce lag times, and improve visual quality. Deliver an unparalleled quality of service by routing around faults using Velocix's automated resiliency features.

### Flexible Scaling

Modularly add incremental capacity as required to accommodate growth and support architectural changes, saving money and preserving previous investments in the content delivery platform.

### Revenue Growth

Launch new multi-screen video services and monetize viewership with addressable advertising to generate more revenue per individual stream. Personalize services to improve differentiation and bolster subscriber loyalty.

### Consumer Intelligence

Use detailed session tracking information from the Velocix CDN to better understand consumer behavior on every device. Employ this data to improve your service, insert relevant advertising, or monetize audience measurement.

### Time to Market

Launch quickly and eliminate integration challenges using Velocix CDN's qualified interfaces with market leading content management, encoding, middleware, DRM, advertising, and user experience solutions.

## In Summary

The market leading Velocix CDN is a powerful content delivery network solution that supports a wide range of applications. It provides the flexibility, proven reliability, and advanced features today's video operators need to launch scalable, revenue generating services to any device, over any network.

Contact a Velocix salesperson to learn more.