

LumenSM

CDN Delivery Services

LumenSM Content Delivery Network (CDN) Services, delivered over our combined global IP and CDN network, can help provide the security, reliability and performance required to meet the demands of your business and create an optimal end user experience.

Our CDN accommodates various delivery models to facilitate the distribution of content around the globe, including:

Video delivery

Lumen solutions for video on demand (VOD) and live linear internet video channels (alternatively, over-the-top video) combine the advantages of our proven, global Origin Storage Platform with our broadcast video services to deliver video to end users quickly, securely and reliably.

Digital downloads

End users expect quick, secure and reliable updates. Our Digital Download service enables you to seamlessly deliver your files, security patches, apps and more to an increasingly connected world.

Web delivery

Lumen Website Acceleration services help transform your website by optimizing performance at the network, code, delivery and browser levels to get content virtually wherever it needs to be at lightning speed.

Benefits

Scalability

Lumen offers a truly global CDN solution that enables you to grow your customer base through the reach and reliability of our high-capacity, high-speed network

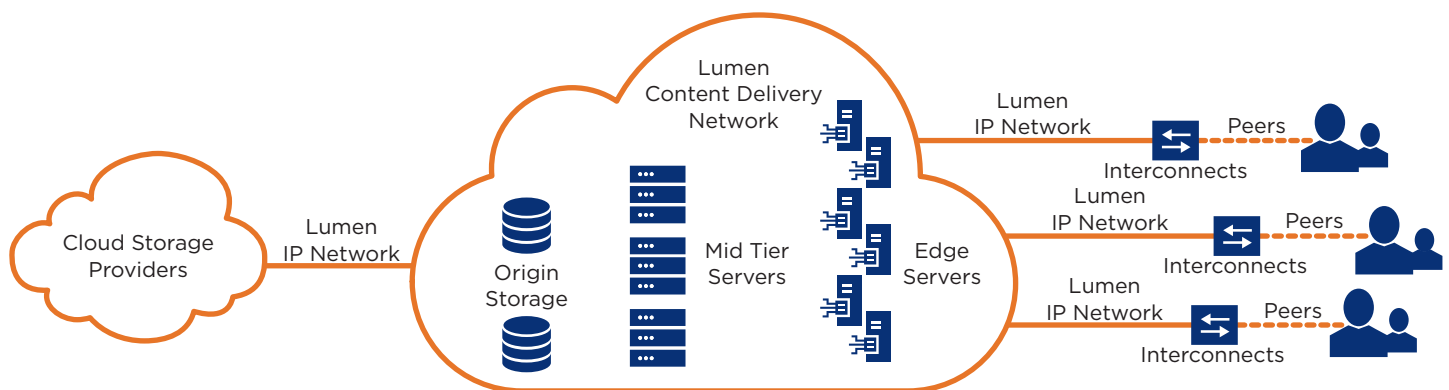
Performance

The Lumen CDN is architected for high capacity, high availability and low latency, resulting in rapid and reliable delivery of content to end users.

Security

Our CDN provides content protection and encrypted delivery over our IP network, which is actively monitoring and mitigating security threats daily to provide a comprehensive, layered strategy to security.

Architecture



Capability	Description	Details
Delivery protocols	HTTP	Hypertext Transfer Protocol
	HTTPS	Hypertext Transfer Protocol Secured Supported: TLS (up to 1.2), NPN, ALPN, OCSP Stapling, SNI
	HTTP2	Hypertext Transfer Protocol v2.0 (est. 2017)
Video delivery technologies	Supported	HLS: Apple® HTTP Live Streaming All versions supported if customer prepackages content DCP and Live supported up to version 5 HDS: Adobe® HTTP Dynamic Streaming Smooth: Microsoft® Smooth Streaming MPEG-DASH: MPEG Dynamic Adaptive Streaming over HTTP
	Not supported	FMS: Adobe Flash® RTMP WMS: Windows Media Audio & Video delivery RM: RealMedia
Content protection features	Geographic intelligence	Prevent deliveries to and from specific geographic locations around the globe. CenturyLink utilizes the geographic database from a thirdparty provider. Additionally, we have numerous overrides should any inaccuracies be identified in third-party geographic databases Standard geographic filters can be specified for: Country code Premium geographic filters can be specified for: Region City Zip code Designated market area (DMA) Line speed
	Token authentication	Verify that requests to access or obtain content are coming from an authenticated source Standard formats include: HMAC-SHA1, MD5 Additional configuration required for: HMAC-SHA256 Other formats require review to determine configuration needs
	Proxy authentication	Configuration to process cookie, HTTP, and query-string validation requests with authentication servers external to the CenturyLink CDN
	Header authentication	Configuration to block requests based on any (arbitrary) header value
	Referrer blocking	Configuration on the CenturyLink CDN to block or redirect requests from specific referring URL addresses
	IP/CIDR blocking	Configuration on the CenturyLink CDN to block requests from specific IP addresses or Classless Inter-Domain Routing Blocks
	Response code redirect	Configuration on the CenturyLink CDN to deny or redirect requests based on the value of HTTP response codes

Capability	Description	Details
Service optimization	Dynamic cache optimization	Custom configuration to apply rules and modules to improve site speed and performance, control content cached at edge, enhance content availability, save bandwidth costs and realize origin offload Attributes include: MIME, path, path extension, Cache-Control header override, query string handling and Vary header
Service management	Log file collection	CDN request logs delivered to the Origin Storage Platform Format: W3C, compressed in GNU Zipped Archive Frequency: Processed and delivered within two hours
	Dynamic origin failover	Custom configuration on the CenturyLink CDN to ingest content from multiple origin locations for failover or from multiple origin redirects
SLA		Availability: 99.9%