

Agile CDN Director

Maximize QoE and optimize network usage with seamless switching between private and/or public CDNs

The CDN Director is a central component in any CDN system regardless of whether you use multi-CDN, private CDN or private CDN with offload. Based on proven Edgeware-technology, it optimizes network utilization and user experience, and authorizes sessions to prevent unauthorized access.

What it does

The CDN Director acts as the entry point for every OTT session and assigns the session to the optimal cache based on network topology, content popularity, user location, and current load and capacity in the CDN.

This ensures that the users receive the best possible QoE while CDN resource usage is optimized.

As an example, storage is saved using consistent hashing-based routing and predictive load balancing avoids congestion during sharp increases in traffic.

In addition, it supports offloading to third-party CDNs to handle peak loads, for example during popular live sports events. It can also manage and control the delivery from multiple CDN vendors (inter CDN).

All this makes it possible to select a CDN, a PoP, or a streaming server based on current capacity and QoE. With in-stream switching it is also possible to switch seamlessly between these sources in real-time during an ongoing session, which means that if a failure occurs, the client will be instantly redirected to another server, PoP or CDN without even noticing a drop in quality.

Key features

- ✓ Inter and intra CDN selection
- ✓ Multitenancy
- ✓ Initial selection
- ✓ Mid-Stream selection
- ✓ HTTP redirect routing
- ✓ DNS routing
- ✓ Flexible routing tree
- ✓ Routing Integration API
- ✓ Traffic classification
- ✓ Routing monitoring
- ✓ Pre-Integrated with Prometheus, Grafana and Alert Manager
- ✓ URL manipulation
- ✓ Client protocol translation
- ✓ Popularity routing
- ✓ Consistent hashing routing
- ✓ Predictive load balancing
- ✓ Programmable Routing Logic
- ✓ Easy Configuration
- ✓ CDN agnostic server-side QoE tracking
- ✓ Session ID generation
- ✓ Security token generation

Key benefits

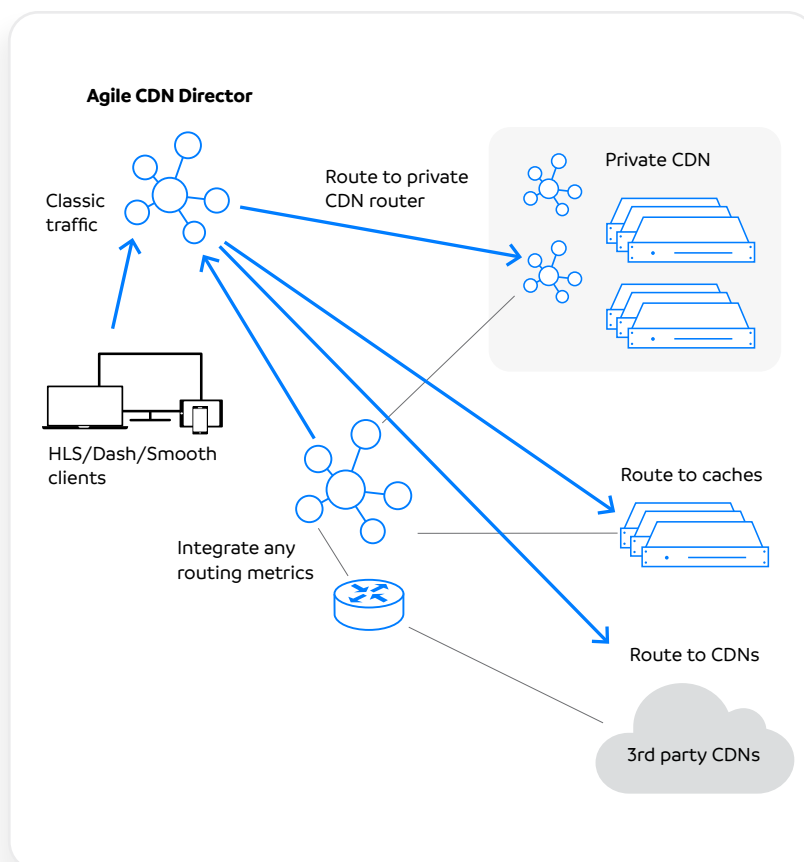
- ✓ Optimize prior investments by re-using existing caches
- ✓ Seamless "in-stream" switching from one cache/pop to the other – minimizing the risk of playback failures
- ✓ Seamless "in-stream" offloading to 3rd party CDN services
- ✓ Works with Agile Cache or leading 3rd party caches
- ✓ API-based, open, and integration-friendly facilitating automation

How it works

When a client device starts an OTT session, the first request goes to the CDN Director. First, it classifies the request into session groups, then it searches the routing tree to select the best streaming resource for the client, based on any combination of routing metrics and business rules. Finally, it responds with an HTTP redirect to the client which starts streaming from the selected resource.

The routing tree is easy to configure for common use cases but is also adaptable to custom requirements thanks to the integrated Lua environment. The routing also adapts to changes in your CDN infrastructure. Furthermore, the CDN Director validates external tokens using several hashing algorithms and generates new tokens in the redirect URLs. The flexible client protocol translation makes it possible to make custom changes required by special client devices.

DNS routing could also be used in which case a thin DNS layer is placed in front of the CDN director. The DNS protocol is not as rich as the HTTP redirect protocol so it limits the routing capabilities slightly, but in some cases, it could still be preferred.



Technical specifications

Streaming and routing protocols

HTTP(S) 1.0/1.1

TLS 1.2/1.3, x509 certificates

DNS

HLS/Dash/Smooth

Operations

Support RHEL 7/8, Oracle Linux 8

Docker/Podman

Ready for AWS/GCP/Azure clouds

Classification and Routing capabilities

User agent

URL

Hostname

BGP integrated

Headers

Query strings

Subnet families

Geo-IP

Time

Integration metrics (cache, CDN bandwidth etc)

Lua 5.1 flexibility

Performance

Up to 15k selections/s

Integrations

BGP integrated

Integration AP

Prometheus/Grafana

Hash protocols

md5

sha1