OneVantage™ Transparent Cache

Network operators have traditionally focused their efforts on the optical transport and packet switching layers of their networks for creating and improving the connectivity experience of their subscribers. Recently, however, the consumption of rich media content has come to dominate the perceived Quality of Experience (QoE) for subscribers. And as the explosive growth in this traffic is pushing networks to capacity, operators are turning to application-layer content caching and delivery services as the next source of improvement for the user experience.

This represents a fundamental shift in mindset. During the past decade operators left responsibility for sourcing and delivering content largely to global CDN service providers. However, the massive popularity of OTT content coming at the expense of network operating margins is driving operators to reinsert themselves into the content delivery value chain. By deploying CDN platforms to support a variety of new and higher quality content services, these operators are addressing a current problem and protecting their long-term competitiveness.

Verivue's OneVantage™ Content Delivery Solution is a suite of turnkey CDN technologies designed to meet the next-generation content delivery needs of network operators. The OneVantage™ Content Delivery Solution is comprised of an open network virtualization platform, installed on commodity hardware, upon which CDN software modules are deployed and managed. The OneVantage ™ Transparent Cache is a bandwidth optimization tool which analyzes and responds to rerouted traffic flows of targeted content, leveraging the same high performance caching system underlying all OneVantage products.

The OneVantage™ Transparent Cache stores and delivers popular Over-the-Top (OTT) content from a distributed, high-performance CDN infrastructure, thereby reducing the amount of transit traffic that traverses the operator's Internet peering point, as well as the volume of internal traffic that is transmitted over the operator's network links. Transparent Cache leverages the same HyperCache-based caching substrate that might be deployed for other purposes, augmented with targeted request interception logic. Transparent Cache intercepts requests in concert with the operator's existing router/switch infrastructure using one of a variety of divert mechanisms.

The Transparent Cache is intercepts requests as they are being routed to the origin server and sends clients to the optimal CDN node for delivering the request. The CDN is responsible for caching and delivering targeted content to the client. If the CDN site has the content cached, the optimal node returns it to the end-user. If not, it retrieves the content from the parent peer group in the caching hierarchy or the origin, caches it, and satisfies the original client request.

Content control:
Complete flexibility of content to target for caching

Quality of Experience:
Lower latency and higher throughput for subscribers

Management control:
Extensive management controls with partitioned access for client views

Investment Protection:
Effective OTT handling with a multi operator and application independent architecture

Features and Benefits

Targeted Control:
The OneVantage™ Transparent Cache gives operators the ability to specifically target (white-list) the traffic they wish to transparently cache. Unlike promiscuous transparent caches, which often result in unpredictable behavior, the Transparent Cache allows operators to cache the content that is imposing the heaviest load on their networks. Non-targeted requests are passed through to the appropriate origin server.

Widely Distributed Caches:
The Transparent Cache leverages a common HyperCache-based CDN hierarchy, so popular OTT content can be cached near the edges of the network. The Transparent Cache is not limited to caching only at Internet peering points where requests are intercepted. This provides the operator with maximum flexibility for optimizing content delivery across its entire network.

Flexible and Scalable Networking Configurations:
Transparent Cache works together with standard HyperCache clusters, the former providing traffic interception and the latter providing caching and content delivery. This allows the content reroute and content delivery functionalities to scale out independently. In large scale networks, cache sites can be located closer to the end user, while intercept sites are centralized, easing networking configuration and manageability. Moreover, this allows operators to deploy other CDN services with Transparent Cache, leveraging the same caching hierarchy for multiple purposes.

Future Proof:
By effectively caching and delivering OTT content, operators have an opportunity to demonstrate value to OTT content providers by delivering a better end-user experience, which in turn has the potential to lead to new business agreements between operators and providers. Because Transparent Cache leverages the same underlying caching infrastructure as other content distribution applications (e.g., a multi-tenant CDN), there is no risk an investment in transparent caching will be wasted should a strong revenue-generating CDN market emerge.

OneVantage™ Content Delivery Solution

Verivue's OneVantage Content Delivery Solution is a complete CDN infrastructure solution for network operators. It offers the industry's most extensible design to meet the requirements of a diverse set of applications. Also available from Verivue are:

- HyperCache
- Request Router
- Management & Analytics
- Internet Streamer
- VoD Streamer
- Object Store

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