

Equalizer functionality spotlight on... layer 7 persistence



intelligent traffic management

Layer 7, or cookie based persistence is a key feature of modern load balancer appliances for many applications - but why do you need it, and what is it?

Today, most web servers run complex applications which interact with the user rather than delivering simple static content. This usually involves storing session state or context information about individual users so that their transactions can be tracked and progressed.

From a load balancing point of view, ideally this session state is stored in a back-end database so that it can be referenced by any of the servers in a multi server environment. In this way a user can be load balanced so that consecutive accesses go to different servers but the state is maintained. For simplicity and performance reasons however, most server architectures do not do this and session state is often held locally on the server - meaning that the load balancer needs to ensure that each client is always sent to the same server.

persistence and performance

Some load balancers achieve this by using Layer 4 session persistence, or sticky client IP address. They keep a record of all client IP addresses so that subsequent accesses from the same address are sent to the original server. There are however some significant drawbacks to L4 persistence which make it unusable in many environments. For example, session state has to be stored in the load balancer for every single client IP address it has seen and this has to be timed out in order to keep it manageable. Too

short a timeout means that client sessions can be lost, too long and the load balancer becomes overloaded.

Many ISPs now implement web caching, where all clients of an ISP appear to come from a small group of cache servers rather than the client's own IP address. A problem with this is that the IP address will often change back to the client's IP address when they switch to SSL in order to complete a transaction. A common manifestation of this is when a client behind an ISP cache using L4 persistence loses their shopping cart at the moment they are about to enter payment information.

the Equalizer method

Layer 7, or cookie based persistence involves the load balancer being much more active in the connection path, working on information found within the HTTP header as well as at a pure network level. For example, in the Coyote Point Equalizer implementation of L7 persistence the load balancer inserts its own cookie into HTTP responses coming from the servers. When the client then re-connects some time later, the cookie is seen by the load balancer and used to ensure that the client is sent back to the original server. This even allows persistence to be maintained when the client makes a later SSL connection from an entirely different IP Address. Result: no more lost shopping baskets!

For more information on the Layer 7 capabilities of the Equalizer range, contact us on 01908 276650 or email info@ipcortex.co.uk.



The E550si - no more lost shopping baskets!