How to enforce better security for entire server farm together using NetScaler ADC?

Use Case

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Introduction

NetScaler infrastructure supports different queues for various protection features. Most of these queuing features relate to server farm reliability, security and scalability. We will discuss various NetScaler queues and their purpose briefly here.

NetScaler queues for better security: -

Queuing mechanism such as SureConnect queue, Priority queue, DoS (Denial-of-Service) queue and Surge queue are managed by NetScaler AppQoE feature. We will explain these queues along with their priorities of execution at virtual server layer.

- SureConnect Queue: This queue can be configured on NetScaler using AppQoE policy where all client request will be served first and will get preference over any other types of queue. When services are busy serving other requests, all new connections will be put under this queue and different kind of responses can be generated from NetScaler to the Client, until services are not free.

- Priority Queue: It can support 4 levels (HIGH | MEDUIM | LOW | LOWEST) of priority queueing for incoming requests and these 4 levels are maintained separately. Level 1 i.e. HIGH priority queue will have precedence over other levels. We can set the threshold for each priority queue, once that threshold is reached all subsequent request will be sent to LOWEST priority queue.

- DoS Queue: This queue helps with identifying Layer 7 DoS attack and keeping requests in this specific queue in case of attack. When NetScaler detects DoS attack, it will send the DoS challenge to client machine for the sampled client connections based on the configured policy. When client respond back to challenge, that connection will be put in DoS queue which has precedence over surge queue requests.

- Surge Queue: This is default queue for all the incoming requests if none of the above queue is configured with AppQoE policy. This queue regulates the speed at which connection should be opened up with back-end servers.

Following screenshot represent the priority order for various queues,

NetScaler Queues	Priority
SureConnect	0
PQ – Level1	1
PQ – Level2	2
PQ – Level3	3
DOS Queue	4
Surge Queue	5

It is very clear that, if you have enabled all these queuing in an AppQoE policy at a time, then SureConnect queue will take precedence over the other queues and each queue has threshold limit set to implement fair queuing mechanism under which each queue does not get resources share larger than its demand. Fair queuing manages requests to load-balanced web servers and applications at the virtual server level instead of at the service level, allowing it to handle queuing of all requests to a web site or application as one group before load balancing, instead of as separate streams after load balancing.

To configure AppQoE feature on NetScaler, see – 'How to protect back-end servers from DOS using AppQoE' and 'How to prioritize incoming traffic in order to use resources appropriately'.