HPe Metrics Description

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WEB01/02/03 VNF - Nginx, HAProxy, Squid:

1° experiment: **zoo_web01_00000**

- **exp_start** : 4/24/2019 9:32:39 AM
- **exp_stop** : 4/24/2019 9:33:39 AM

assumption : **ab** is a linux command that represent a tool for benchmarking your Apache Hypertext Transfer Protocol (HTTP) server. It is designed to give you an impression of how your current Apache installation performs. This especially shows you how many requests per second your Apache installation is capable of serving.

The following list describes the values returned by ab:

- **ab_completed_requests** : The number of successful responses received.
- **ab_concurrent_lvl** : The number of concurrent clients used during the test.
- **ab_doc_length** : This is the size in bytes of the first successfully returned document. If the document length changes during testing, the response is considered an error.
- **ab_doc_path** : The request URI parsed from the command line string
- **ab_failed_requests** : The number of requests that were considered a failure. If the number is greater than zero, another line will be printed showing the number of requests that failed due to connecting, reading, incorrect content length, or exceptions.
- **ab_html_transfer_byte** : The total number of bytes received from the server. This number is essentially the number of bytes sent over the wire.
- **ab_mean_time_per_request** : The average time spent per request. The first value is calculated with the formula concurrency * timetaken * 1000 / done while the second value is calculated with the formula timetaken * 1000 / done

- **ab_request_per_second** : This is the number of requests per second. This value is the result of dividing the number of requests by the total time taken
- **ab_rt_percentiles_csv** : Calculate percentiles for data in csv
- **ab_srv_host** : Server host ip address (all parameters equal to 20.0.0.254)
- **ab_srv_port** : Server port (8888 for all)
- **ab_srv_version** : Server version (Apache/2.4.18 for all)
- **ab_time_used_s** : This is the time(in second) taken from the moment the first socket connection is created to the moment the last response is received.
- **ab_total_transfer_byte** : The total number of bytes received from the server. This number is essentially the number of bytes sent over the wire.
- **ab_transfer_rate_kbyte_per_second** : The rate of transfer as calculated by the formula totalread / 1024 / timetaken of kbyte per second

assumption : There are various columns all the same but all with a different prefix that represents their status. There are more than 5 columns that count the number of packets received for the states: general, eth0, lo, mgmt, input, output... (example ** : stat_lo.. , stat_eth0.. , stat_data(general for all data))

eth0 : is the first Ethernet interface on the system. This type of interface is usually a NIC connected to the network by a category 5 cable

lo : is the loopback interface. This is a special network interface that the system uses to communicate with itself.

mgmt : management ports are used to configure, maintain, and support a network device (switch, server, storage array, etc.). Often times this management interface will be connected to a dedicated and segregated VLAN used only by IT for management of network hardware.

The following list describes all the values that we have for each of the states :

- ****_collisions** : Number of collisions during packet transmissions. A phenomena that occurs once any two or more nodes in the same collision domain transmit packets at the same time. When collision occurs packets are typically corrupted and discarded. They are all 0
- ****_multicast** : A single packet can be sent by a server and it will be received by many receivers, they are all 0 values.
- ****_rx_bytes** : The number of received packets.

- ****_rx_compressed** : Are groups packet received of the same type compressed using the binary transposed feed, they are all 0 values.
- ****_rx_crc_errors** : Cyclic Redundancy Check (CRC) Error indicates when data is corrupted being recived, they are all 0 values.
- ****_rx_dropped** : The number of packets dropped due to no receive buffers, they are all 0 values.
- ****_rx_errors** : The number of bad packets received, they are all 0 values.
- ****_rx_fifo_errors** : Receiver FIFO error counter. If the upload is delayed for whatever reason and there is Rx activity, the card fills in this buffer after which is stalled, not being able to receive any more packets; this situation is signalled with the Rx FIFO error,they are all 0 values.
- ****_rx_frame_errors** : Framing errors are caused by corruption of the starting or ending frame delimiters. These delimiters can be corrupted by some violation of the encoding scheme,they are all 0 values.
- ****_rx_length_errors** : That a length error occurs if an incoming packet length field in MAC header doesn't match the packet length,they are all 0 values.
- ****_rx_missed_errors** : Count missed packets on the receiver side,they are all 0 values.
- ****_rx_over_errors** : Count of overrun errors received,they are all 0 values.
- ****_rx_packets** : Count of packets received
- ****_tx_aborted_errors** : Part of aggregate "carrier" errors in /proc/net/dev, they are all 0 values.
- ****_tx_bytes** : Count of bytes transmitted
- ****_tx_carrier_errors** : Number of frame transmission errors due to loss of carrier during transmission, they are all 0 values.
- ****_tx_compressed** : Number of transmitted compressed packets. This counters is only meaningful for interfaces which support packet compression,they are all 0 values.
- ****_tx_dropped** : Number of packets dropped on their way to transmission,they are all 0 values.
- ****_tx_errors** : Total number of transmit problems,they are all 0 values.

- ****_tx_fifo_errors** : Number of frame transmission errors due to device FIFO underrun / underflow. This condition occurs when the device begins transmission of a frame but is unable to deliver the entire frame to the transmitter in time for transmission,they are all 0 values.
- ****_tx_heartbeat_errors** : Number of Heartbeat / SQE Test errors for old half-duplex Ethernet. Part of aggregate "carrier" errors in /proc/net/dev,they are all 0 values.
- ****_tx_packets** : Number of packets successfully transmitted.
- ****_tx_window_errors** : Number of frame transmission errors due to late collisions, they are all 0 values.

- **cpu_bw** : cpu bandwidth determines how often values can be accessed from memory, can be calculated by multiplying the memory frequency (one half since double data rate x 2), multiplied by the number of the bytes of width, and multiplied by the number of the channels supported for the processor.
- **io_bw** : I/O bandwidth refers to a specific I/O device. All NaN values
- **mem_max** : Maximum memory used(only 64,128,256,512)