

Backend's Maximum Connections Is Too Low

PROBLEM

The dashboard shows a number of maximum connections lower than the available sessions in the Frontend or the total supported connections on Servers.



The screenshot shows a dashboard for 'smtp_in' with an 'OPEN' button. It contains two tables. The first table, 'FRONTEND', has three rows: 'Listen' with value 'ipv4@*:[25,587]', 'Sessions' with value '0 / 1000', and 'Traffic' with value 'in: 18.4MB, out: 76.8kB'. The second table, 'BACKEND', has two rows. The first row is a header with columns 'Server', 'Status', 'Conn.', and 'Traffic'. The second row shows a server 'ipv4@192.168.3.4' with status 'UP' (indicated by a green box), '170%' (indicated by a green box), '0 / 100' (indicated by a green box), and 'in: 18.4MB, out: 76.8kB'.

smtp_in		OPEN			
FRONTEND		Server	Status	Conn.	Traffic
Listen	ipv4@*:[25,587]	BACKEND	UP	0 / 100	in: 18.4MB, out: 76.8kB
Sessions	0 / 1000	ipv4@192.168.3.4	UP 170%	0 / 100	in: 18.4MB, out: 76.8kB
Traffic	in: 18.4MB, out: 76.8kB				

SOLUTION

Although it seems odd, everything is normal. The maximum connection on the backend is a reference value to the proxy engine which hint when to consider the backup as “full” of connections, and it is safe to keep it to the default value (10% of the server configuration).

The upper limit of connections is determined by the maximum numbers of connections on servers (or when this is unlimited, by the number of connections accepted by the frontend). Additionally, if you set a minimum number of connections on the servers, you are declaring a dynamic limit which depends on the backend's load. During normal workload (i.e. lower than the specified full connection value, which is 100 in the screenshot above), the number of connection to a server is well balanced between the minimum and the maximum connections. When there are exceptional workload (i.e. above the configured value), connection are chosen with a more direct approach to increase the throughput.