as well as the size of the host_cache table. For operational and configuration information about the host cache, see Section 5.1.12.3, “DNS Lookups and the Host Cache”.

Because the host_cache table exposes the contents of the host cache, it can be examined using SELECT statements. This may help you diagnose the causes of connection problems.

The host_cache table has these columns:

- IP

  The IP address of the client that connected to the server, expressed as a string.

- HOST

  The resolved DNS host name for that client IP, or NULL if the name is unknown.

- HOST_VALIDATED

  Whether the IP-to-host name-to-IP DNS resolution was performed successfully for the client IP. If HOST_VALIDATED is YES, the HOST column is used as the host name corresponding to the IP so that additional calls to DNS can be avoided. While HOST_VALIDATED is NO, DNS resolution is attempted for each connection attempt, until it eventually completes with either a valid result or a permanent error. This information enables the server to avoid caching bad or missing host names during temporary DNS failures, which would negatively affect clients forever.

- SUM_CONNECT_ERRORS

  The number of connection errors that are deemed “blocking” (assessed against the max_connect_errors system variable). Only protocol handshake errors are counted, and only for hosts that passed validation (HOST_VALIDATED = YES).

  Once SUM_CONNECT_ERRORS for a given host reaches the value of max_connect_errors, new connections from that host are blocked. The SUM_CONNECT_ERRORS value can exceed the max_connect_errors value because multiple connection attempts from a host can occur simultaneously while the host is not blocked. Any or all of them can fail, independently incrementing SUM_CONNECT_ERRORS, possibly beyond the value of max_connect_errors.

  Suppose that max_connect_errors is 200 and SUM_CONNECT_ERRORS for a given host is 199. If 10 clients attempt to connect from that host simultaneously, none of them are blocked because SUM_CONNECT_ERRORS has not reached 200. If blocking errors occur for five of the clients, SUM_CONNECT_ERRORS is increased by one for each client, for a resulting SUM_CONNECT_ERRORS value of 204. The other five clients succeed and are not blocked because the value of SUM_CONNECT_ERRORS when their connection attempts began had not reached 200. New connections from the host that begin after SUM_CONNECT_ERRORS reaches 200 are blocked.

- COUNT_HOST_BLOCKED_ERRORS

  The number of connections that were blocked because SUM_CONNECT_ERRORS exceeded the value of the max_connect_errors system variable.

- COUNT_NAMEINFO_TRANSIENT_ERRORS

  The number of transient errors during IP-to-host name DNS resolution.

- COUNT_NAMEINFO_PERMANENT_ERRORS

  The number of permanent errors during IP-to-host name DNS resolution.