



Performance Statistics and Tuning

The Performance Statistics feature provides benchmarks and statistics about the performance of your ControlLogix application, including the makeup of the types of reads performed (i.e. symbolic vs. physical, device reads vs. cache reads).

It is important to note the performance of the server can be affected while Performance Statistics is enabled, as it is an additional layer of processing. Performance Statistics feature is turned off by default.

Performance Statistics provides meaningful numerical results across three scopes of your server project; device, channel and driver. **Device** statistics provide the data access performance on a particular device. **Channel** statistics provide the average data access performance for all the devices under a given channel. **Driver** statistics provide the average data access performance for all devices using the ControlLogix Ethernet Driver.

Server statistics are outputted to the Server's Event Log upon shutdown of the Server. This will require a shutdown and a reopening of the Server in order to view the statistics results.

How do I tune my application for increased performance?

- 1) Server tags referencing Atomic Logix tags (array or non-array) should be assigned to Physical Non-Blocking devices.
- 2) Server tags referencing a Structure Logix tag composing of 1/3 or less of the Structure tag, should be assigned to Physical Non-Blocking devices.
- 3) Server tags referencing a Structure Logix tag composing of 1/3 or more of the Structure tag, should be assigned to Physical Blocking devices.
- 4) If Symbolic mode is used, Logix names should be kept to a minimum in length.
- 5) Use Logix Arrays as often as possible.
- 6) Allocate only the necessary amount of System Overhead Time Slice for Ladder Logic/FBD needs. Leave the rest for driver communications.

A Note on Performance Statistics

There are general rules above to help optimize performance, but ultimately it depends on the application at hand. One thing that can obscure results is the tag scan rate. If tag requests are light, Read and Write transactions can complete before the next request comes in. In this case, Physical Blocking and Physical Non-Blocking will have the same Performance Statistics results. If tag requests are high (many tags or high scan rates), transaction completion time may take longer. This is when the strengths and weaknesses of Physical Blocking and Physical Non-Blocking become apparent. Performance Statistics can help tune your application for maximum performance.

