

Measuring Ficon Director Performance

Fabio Massimo Ottaviani - EPV Tehnologies

FICON directors (FCD) are key elements in current I/O configurations. For this reason, since some years, the new SMF 74 subtype 7 record can be produced by RMF to provide information on FCD activity and performance.

However these measurements are normally not collected and properly analysed in many sites. This is probably due to the wrong idea that, as for ESCON directors, measuring channel utilization could be enough.

Unfortunately the FICON protocol is completely different from the ESCON protocol.

The most significant difference is that FICON uses buffer credits to account for packet delivery.

When the number of credits available on a link has been exhausted no new I/O operations can be initiated until some of the running I/Os (open exchanges in FICON terminology) terminates, thus freeing buffer credits. As a result frame transmission is delayed.

The average amount of delay a frame experienced before being transmitted, called frame pacing delay, is the most important metric provided in SMF 74 subtype 7 records.

In this paper, after a brief explanation of how buffer credits work, we present sample reports to analyse FCD configuration and performance.