

The lines of the *portErrShow* output...

Frames tx/rx N/A counters representing the number of frames transmitted

Enc_in: 8bit/10bit encoding errors inside frame. Words inside of frames are encoded, if this encoding is corrupted or an error is detected enc_in is generated.

Minimum compliance with the link bit error rate specification on a link continuously receiving frames would cause approximately one error every 20 minutes. Re-initialisation / reboots of the associated Nx-port can also cause these errors.

Crc_err: crc errors – a mathematical formula generates counters at sending port, receiving port uses the same formula to check and compare.

Statistically, crc_err and enc_out errors together imply GBIC/SFP problem.

Also see “bad_eof” below.

Too_long: FC frames are 2148 bytes maximum. Frames that were longer than the FC maximum (SOF+header+2112bytes+CRC+EOF). If an eof is corrupted or data generation is incorrect a too_long error is reported.

Too_short: The too_short error statistics counter is incremented whenever a frame, bounded by an SOF and EOF, is received and the number of words between the SOF and EOF is less than 7 words (6 words header plus 1 word CRC), i.e. 38 bytes (not 48) including the SOF and EOF.

This could be caused by the transmitter, or an unreliable link.

Bad_eof: After a loss of synchronization error, continuous-mode alignment allows the receiver to re-establish word alignment at any point in the incoming bit stream while the receiver is operational. If such a re-alignment occurs, detection of the resulting error condition is dependant upon higher level functions (eg: invalid CRC, missing EOF)

Enc_out: 8bit/10bit encoding errors occurred in words (ordered sets) outside of the FC frame. Words outside of frames are encoded, if this encoding is corrupted or an error is detected enc_out is generated. It indicates a problem if it increments faster than the link-bit error rate allows, approximately once every 20 minutes for 1 Gbit/s. *Statistically, enc_out errors on their own imply a cable/connector problem. Enc_out errors and crc_err together imply GBIC/SFP problem.*

Such errors are also expected every time a user brings a port down and up (i.e. reboot host, power-cycle storage subsystem, unplug/plug cable or portdisable/portenable etc). Such errors will also be generated on a link which has a 1Gbit/s port connected to a 2Gbit/s port when autonegotiation is turned off.

Disc c3: Discard class 3 errors could be generated by switch when devices send frames without FLOGging first or with an invalid destination. This error is just reporting that a discard occurred.

Link-fail: If a port remains in the LR Receive State for a period of time greater than a timeout period (R_A_TOV), a link reset protocol timeout shall be detected which results in a link failure condition (enter the NOS transmit state). The link failure also indicates that loss of signal or loss of sync lasting longer than the R_ATOV value was detected while not in the offline state.

Loss sync: Synchronisation failures on either bit or transmission-word boundaries are not separately identifiable and cause loss-of-synchronisation errors.
Such errors are also expected every time a user brings a port down and up (i.e. reboot host, power-cycle storage subsystem, unplug/plug cable or portdisable/portenable etc).

Loss sig: Occurs when a signal is transmitted but none is being received on the same port.
Such errors are also expected every time a user brings a port down and up (i.e. reboot host, power-cycle storage subsystem, unplug/plug cable or portdisable/portenable etc).

Frjt: If the fabric can't process a class 2 frame a F_RJT is returned

Frbsy: If a fabric can't deliver a class 2 frame within E_D_TOV frame will be discarded and a F_BSY returned