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1:

There are 128 data bits.
Parity bits + data bits + 1 < 2^p

parity bits + 128 + 1 <2^p
$2^p - p > 129$

$p > 8$
We will need 9 parity bits

1/72=0.0139 protection rate
1/128=0.0078 protection rate

Cost/performance $= 8/64/0.0139 = 8.9928$
Cost/performance $= 9/128/0.0078 = 9.0144$

The modern model is better because less cost is associated with more performance.

2:

Order of operations will be listed as CPU 1 = P1 and CPU 2 = P2

Order	0 X[0]	0 X[1]	1 X[0]	1 X[1]	2 X[0]	2 X[1]	3 X[0]	3 X[1]	4 X[0]	4 X[1]
$P1 \to P1 \to P2 \to P2$	0	0	1	0	1	1	3	1	3	4
$P2 \to P2 \to P1 \to P1$	0	0	3	0	3	3	4	3	4	1
$P1 \to P2 \to P2 \to P1$	0	0	1	0	3	0	3	3	3	1

The last row shows an example if the protocol doesn't ensure coherency.