

Problem of the week #4:

Given - Feb. 7, 2003; Due - Feb. 13, 2003 (in class).

Consider packet routing in a n -cube (assume n is even). The transpose permutation is: write i as the concatenation of two binary strings a_i and b_i each of length $n/2$, the destination of i is the concatenation of b_i and a_i . Show that the transpose permutation causes the bit-wise routing strategy (discussed in class) to take $\Omega(\sqrt{2^n/n})$ steps.