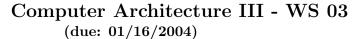
University of the Saarland Department 6.2 - Informatik

Prof. Dr. W.J. Paul





Excercise 1: (Congestion)

(5 points)

Choose destinations randomly. Let $\alpha > 0$. Show

$$Prob(cong \leq O(\alpha p) + o(\alpha log n)) \geq 1 - N^{-\alpha}.$$

Hint: in the proof of theorem 1 set $r = 2ep\alpha$ respectively $r = \frac{2e\alpha log N}{log \frac{log N}{log}}$.

Excercise 2: (Random Key Protocol)

(8 points)

Choose destinations and keys randomly. Let $\alpha > 0$. Show

$$Prob(time \le log N + o(log N) + O(p)) \ge 1 - N^{-\alpha}.$$

Hint: use exercise 1; in the proof of theorem 2 substitute $s = \alpha s'$ and $K = \alpha K'$.