

Vjerovatnosti proslijedivanja paketa:

$$\begin{aligned} a &= 0.2 & e &= 0.2 \\ b &= 0.3 & f &= 0.6 \\ c &= 0.5 & g &= 0.2 \\ d &= 0.3 & h &= 0.3 \end{aligned}$$

Srednja vremena obrade paketa:

$$\begin{aligned} S_1 &= 0.003 \text{ s/p} & S_5 &= 0.1 \text{ s/p} \\ S_2 &= 0.001 \text{ s/p} & S_6 &= 0.13 \text{ s/p} \\ S_3 &= 0.01 \text{ s/p} & S_7 &= 0.15 \text{ s/p} \\ S_4 &= 0.04 \text{ s/p} \end{aligned}$$

$$T = f(\lambda)$$

$$\begin{aligned} \lambda_2 &= \lambda_1 + 0.6\lambda_6 \\ \lambda_3 &= 0.2\lambda_3 + 0.3\lambda_4 \\ \lambda_4 &= 0.3\lambda_2 + 0.2\lambda_3 \\ \lambda_5 &= 0.5\lambda_2 \\ \lambda_6 &= 0.3\lambda_r \\ \lambda_7 &= 0.7\lambda \\ \lambda_8 &= 0.4\lambda_6 + \lambda_7 \end{aligned}$$

$$\begin{aligned} \lambda_2 &= 1.21952 \cdot \lambda \\ \lambda_3 &= 0.3762 \cdot \lambda \\ \lambda_4 &= 0.44112 \cdot \lambda \\ \lambda_5 &= 0.60982 \cdot \lambda \\ \lambda_6 &= 0.3659 \cdot \lambda \\ \lambda_7 &= 0.8536 \cdot \lambda \end{aligned}$$

Iskoristivost poslužitelja:

$$\rho_i = \lambda_i \cdot S_i$$

$$\rho_1 = 0.003 \cdot \lambda$$

$$\rho_2 = 0.0012 \cdot \lambda$$

$$\rho_3 = 0.0038 \cdot \lambda$$

$$\rho_4 = 0.0610 \cdot \lambda$$

$$\rho_5 = 0.0476 \cdot \lambda$$

$$\rho_6 = 0.0476 \cdot \lambda$$

$$\rho_7 = 0.1280 \cdot \lambda$$

Prosječan broj zahtjeva na poslužitelju:

$$N_i = \frac{\rho_i}{1 - \rho_i}$$

$$N_1 = \frac{0.003 \cdot \lambda}{1 - 0.003 \cdot \lambda}$$

$$N_2 = \frac{0.0012 \cdot \lambda}{1 - 0.0012 \cdot \lambda}$$

$$N_3 = \frac{0.0038 \cdot \lambda}{1 - 0.0038 \cdot \lambda}$$

$$N_4 = \frac{0.0176 \cdot \lambda}{1 - 0.0176 \cdot \lambda}$$

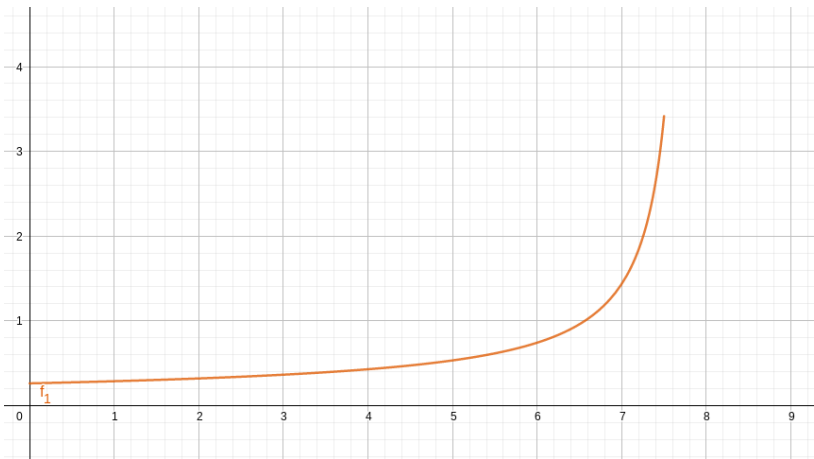
$$N_5 = \frac{0.061 \cdot \lambda}{1 - 0.061 \cdot \lambda}$$

$$N_6 = \frac{0.0476 \cdot \lambda}{1 - 0.0476 \cdot \lambda}$$

$$N_7 = \frac{0.128 \cdot \lambda}{1 - 0.128 \cdot \lambda}$$

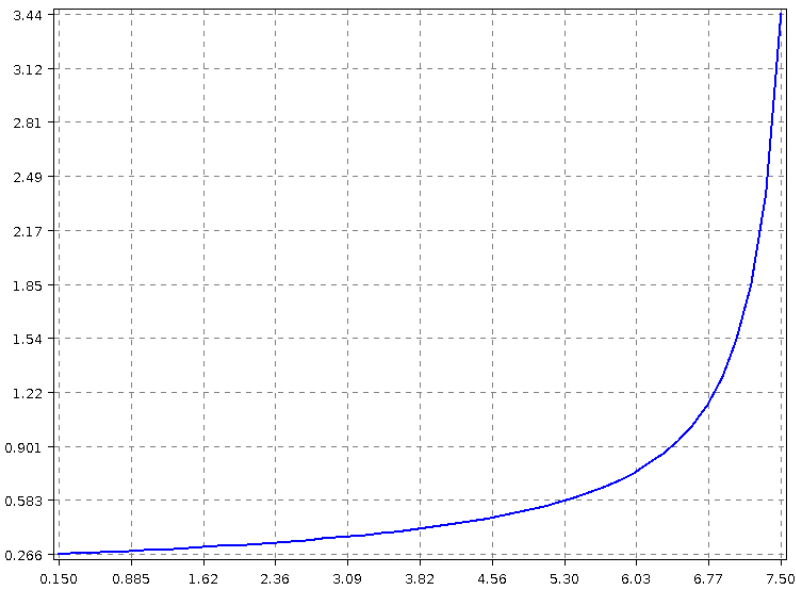
**Prosječno vrijeme trajanja zahtjeva:**

$$T = \frac{N_1 + N_2 + N_3 + N_4 + N_5 + N_6 + N_7}{\lambda}$$



L	T
1	0.2877
2	0.3204
3	0.3646
4	0.4288
5	0.5332
6	0.7424
7	1.4369

Programsko rješenje



Lambda = 0.150,	T = 0.266
Lambda = 0.300,	T = 0.269
Lambda = 0.450,	T = 0.273
Lambda = 0.600,	T = 0.277
Lambda = 0.750,	T = 0.281
Lambda = 0.900,	T = 0.285
Lambda = 1.050,	T = 0.289
Lambda = 1.200,	T = 0.294
Lambda = 1.350,	T = 0.298
Lambda = 1.500,	T = 0.303
Lambda = 1.650,	T = 0.308
Lambda = 1.800,	T = 0.313
Lambda = 1.950,	T = 0.319
Lambda = 2.100,	T = 0.324
Lambda = 2.250,	T = 0.330
Lambda = 2.400,	T = 0.336
Lambda = 2.550,	T = 0.343
Lambda = 2.700,	T = 0.350
Lambda = 2.850,	T = 0.357
Lambda = 3.000,	T = 0.365
Lambda = 3.150,	T = 0.373
Lambda = 3.300,	T = 0.381
Lambda = 3.450,	T = 0.390
Lambda = 3.600,	T = 0.400
Lambda = 3.750,	T = 0.410
Lambda = 3.900,	T = 0.421
Lambda = 4.050,	T = 0.433
Lambda = 4.200,	T = 0.446
Lambda = 4.350,	T = 0.459
Lambda = 4.500,	T = 0.474
Lambda = 4.650,	T = 0.490
Lambda = 4.800,	T = 0.507
Lambda = 4.950,	T = 0.527
Lambda = 5.100,	T = 0.548
Lambda = 5.250,	T = 0.571
Lambda = 5.400,	T = 0.597
Lambda = 5.550,	T = 0.627
Lambda = 5.700,	T = 0.660
Lambda = 5.850,	T = 0.699
Lambda = 6.000,	T = 0.743
Lambda = 6.150,	T = 0.795
Lambda = 6.300,	T = 0.857
Lambda = 6.450,	T = 0.932
Lambda = 6.600,	T = 1.026
Lambda = 6.750,	T = 1.145
Lambda = 6.900,	T = 1.303
Lambda = 7.050,	T = 1.523
Lambda = 7.200,	T = 1.849
Lambda = 7.350,	T = 2.386
Lambda = 7.500,	T = 3.440