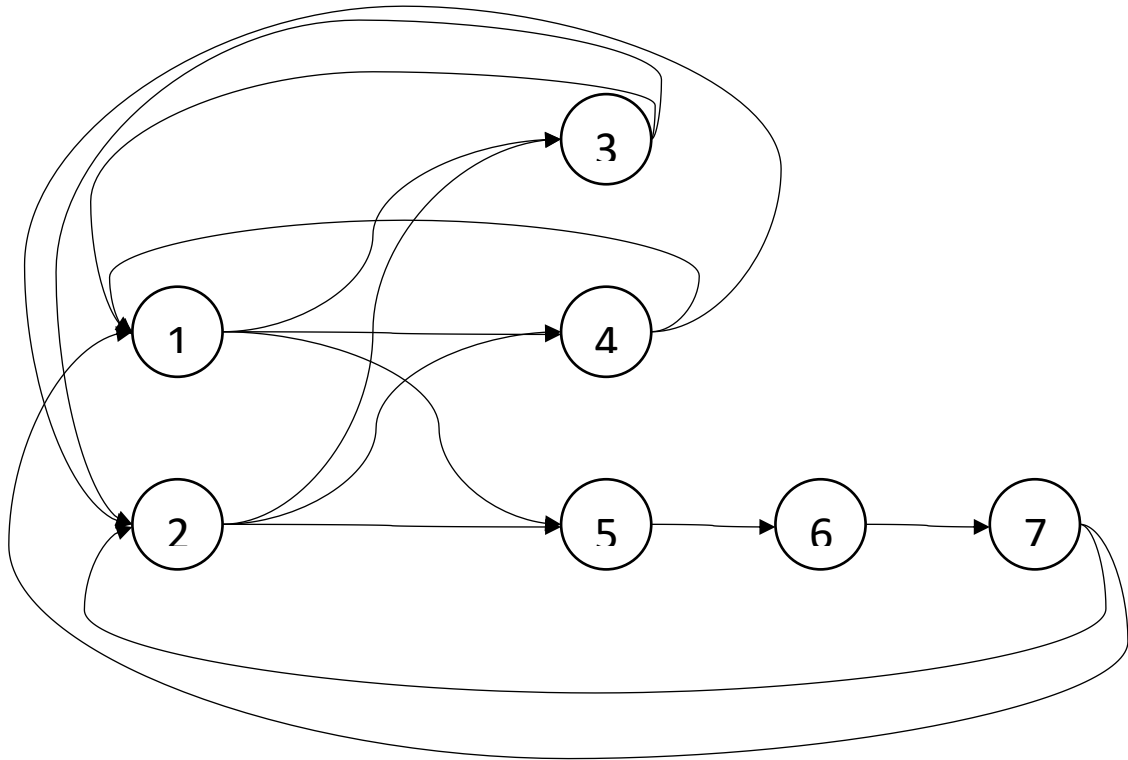


Embedded system

The state machine and performance vector and matrices describing the considered system are the following:



$$\alpha_{\text{computing}} = [1, 1, 0, 0, 0, 0, 0]$$

$$\alpha_{\text{WiFi}} = [0, 0, 1, 1, 0, 0, 0]$$

$$\alpha_{4G} = [0, 0, 0, 0, 1, 1, 1]$$

$$\xi_X = \begin{vmatrix} 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 1 & 1 & 0 & 0 & 0 & 0 & 0 \\ 1 & 1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 1 & 1 & 0 & 0 & 0 & 0 & 0 \end{vmatrix}$$

Results are:

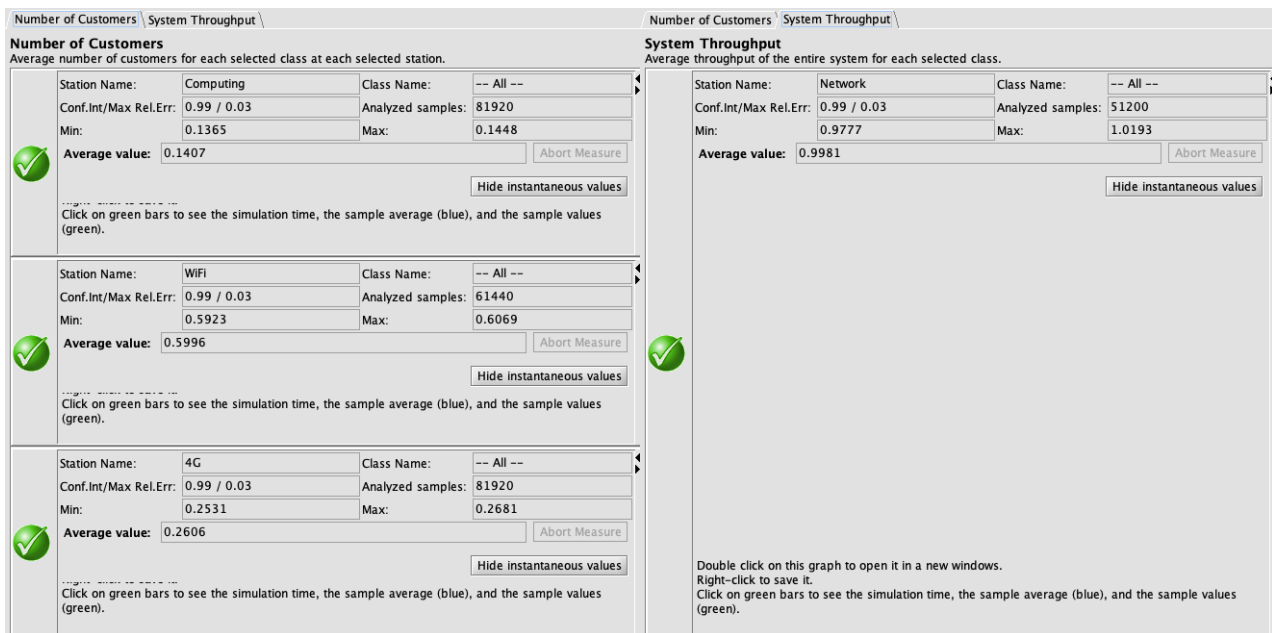
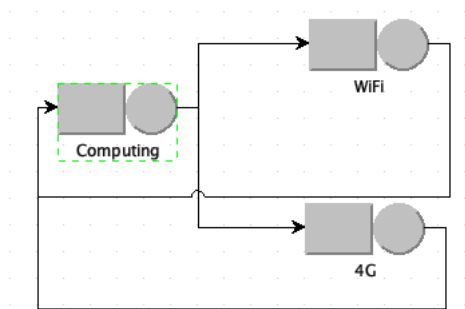
$$X = 0.997506$$

$$P_{\text{Computing}} = 0.139651$$

$$P_{\text{WiFi}} = 0.598504$$

$$P_{4G} = 0.261845$$

Results are confirmed with a JSimGraph model:



If results are different, check that you used the correct parameters for the distributions (JMT show probability then rates for the HyperExponential, and rate then stages for the Erlang):

Editing Computing Properties...

Class	Strategy	Service Time Distribution
Class1	Loa...	hyp(0.4,5,10)

Editing WiFi Properties...

Class	Strategy	Service Time Distribution
Class1	Load...	hyp(0.75,1,0.2)

Editing 4G Properties...

Class	Strategy	Service Time Distribution
Class1	Loa...	erl(8,3)