Rede de Teste

TOPOLOGIA FÍSICA DA REDE

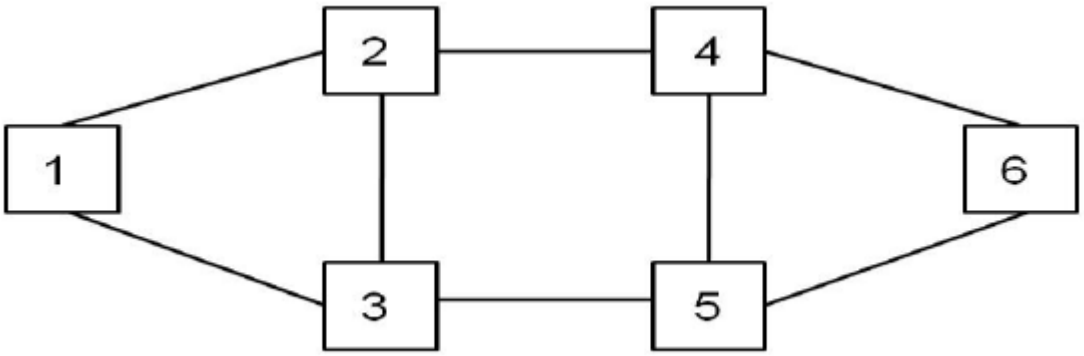

TABELA DE VALORES

Discrição / Constantes	Pouco trafego	Muito Trafego
Número de Nós: **N**	**6**	**6**
Número de Ligações: **L**	**8**	**8**
Média de grau nodal: **<∂>**	**2,66(6)**	**2,66(6)**
Comp. do Link: **<len>**	**500 km**	**500 km**
Número Medio de Hops: **<h>**	**1,533**	**1,533**
Número Medio de Hops': **<h'>**	**2,467**	**2,467**
Quant. total de tráfego: **T**	**0.5 Tbits/s**	**5 Tbits/s**

Como tínhamos falado em relação ao trafego (pouco: 0.1 Tbits/s, muito:1 Tbits/s) assumi os valores em cima referidos porque facilitou-me um pouco os cálculos. Também atribui o valor medio do comprimento dos links.

MATRIZES DE POUCO TRÁFEGO

ODU0=1.25 Gbits/s; ODU1=2.5 Gbits/s; ODU2=10 Gbits/s; ODU3=40 Gbits/s; ODU4=100 Gbits/s;

$$\text{ODU0} = \begin{matrix} 0 & 5 & 1 & 3 & 1 & 3 \\ 5 & 0 & 0 & 1 & 5 & 0 \\ 1 & 0 & 0 & 1 & 4 & 1 \\ 3 & 1 & 1 & 0 & 1 & 1 \\ 1 & 5 & 4 & 1 & 0 & 3 \\ 3 & 0 & 1 & 1 & 3 & 0 \end{matrix} \quad \text{ODU1} = \begin{matrix} 0 & 2 & 4 & 2 & 0 & 5 \\ 2 & 0 & 0 & 3 & 1 & 1 \\ 4 & 0 & 0 & 1 & 1 & 0 \\ 2 & 3 & 1 & 0 & 1 & 3 \\ 0 & 1 & 1 & 1 & 0 & 1 \\ 5 & 1 & 0 & 3 & 1 & 0 \end{matrix} \quad \text{ODU2} = \begin{matrix} 0 & 1 & 1 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 & 1 & 0 \\ 1 & 0 & 0 & 1 & 1 & 0 \\ 1 & 0 & 1 & 0 & 1 & 0 \\ 0 & 1 & 1 & 1 & 0 & 1 \\ 0 & 0 & 0 & 0 & 1 & 0 \end{matrix}$$

T_1^0 = 60x1.25 = 75 Gbits/s T_1^1= 50x2.5 = 125 Gbits/s T_1^2= 16x10 = 160 Gbits/s

$$\text{ODU4} = \begin{matrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 1 \\ 0 & 1 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 & 0 \end{matrix} \qquad \text{ODU4} = \begin{matrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 \\ 0 & 1 & 0 & 0 & 1 & 0 \end{matrix}$$

T_1^4= 6x40 = 240 Gbits/s $\qquad$ T_1^4= 4x100 = 400 Gbits/s

T_{1total} = 75 + 125 + 160 + 240 + 400 = 1000 Gbtis/s

T_{total} = 1000/2 = **0.5 Tbits/s**

Matrizes de Muito Tráfego

ODU0=1.25 Gbits/s; ODU1=2.5 Gbits/s; ODU2=10 Gbits/s; ODU3=40 Gbits/s; ODU4=100 Gbits/s;

$$\text{ODU0} = \begin{matrix} 0 & 25 & 5 & 15 & 5 & 15 \\ 25 & 0 & 0 & 5 & 25 & 0 \\ 5 & 0 & 0 & 5 & 20 & 5 \\ 15 & 5 & 5 & 0 & 5 & 5 \\ 5 & 25 & 20 & 5 & 0 & 15 \\ 15 & 0 & 5 & 5 & 15 & 0 \end{matrix} \quad \text{ODU1} = \begin{matrix} 0 & 10 & 20 & 10 & 0 & 25 \\ 10 & 0 & 0 & 15 & 5 & 5 \\ 20 & 0 & 0 & 5 & 5 & 0 \\ 10 & 15 & 5 & 0 & 5 & 15 \\ 0 & 5 & 5 & 5 & 0 & 5 \\ 5 & 5 & 0 & 15 & 5 & 0 \end{matrix} \quad \text{ODU2} = \begin{matrix} 0 & 5 & 5 & 5 & 0 & 0 \\ 5 & 0 & 0 & 0 & 5 & 0 \\ 5 & 0 & 0 & 5 & 5 & 0 \\ 5 & 0 & 5 & 0 & 5 & 0 \\ 0 & 5 & 5 & 5 & 0 & 5 \\ 0 & 0 & 0 & 0 & 5 & 0 \end{matrix}$$

T_1^0 = 300x1.25 = 375 Gbits/s $\qquad$ T_1^1= 250x2.5 = 625 Gbits/s $\qquad$ T_1^2= 80x10 = 800 Gbits/s

$$\text{ODU4} = \begin{matrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 5 & 0 & 0 & 5 \\ 0 & 5 & 0 & 0 & 5 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 5 & 0 & 0 & 0 \\ 0 & 5 & 0 & 0 & 0 & 0 \end{matrix} \qquad \text{ODU4} = \begin{matrix} 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 5 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 5 \\ 0 & 5 & 0 & 0 & 5 & 0 \end{matrix}$$

T_1^4= 30x40 = 1200 Gbits/s $\qquad$ T_1^4= 20x100 = 2000 Gbits/s

T_{1total} = 375 + 625 + 800 + 1200 + 2000 = 5000 Gbtis/s

T_{total} = 5000/2 = **5 Tbits/s**