0.1. Online sla aware route/s assigment

- Minimize:

$$z = \sum_{(u,v)\in E} W_{uv} x_{uv}$$

- Subject to:

$$\sum_{v|(u,v)\in E} x_{uv}^k - x_{vu}^k = \begin{cases} 1 & \text{if } u = s \\ -1 & \text{if } u = d \\ 0 & \text{otherwise} \end{cases} \qquad \forall u \in \{0,1,...,M\}$$

$$x_{uv} \geq x_{uv}^k + x_{vu}^k \qquad \forall k \in 1,2,..,K_{max}, (u,v) \in E$$

$$s_i^k \geq (1 - S_{ij})(x_{uv}^k + x_{vu}^k) \qquad \forall k \in 1,2,..,K_{max}, E_j = (u,v) \in E$$

$$s_i \geq 1 + \sum_{k=1}^{K_{max}} (s_i^k - 1) \qquad \forall i \in \{1,2,...,|\mathbf{S'}|\}$$

$$\sum_{i\in\{1,2,...,|\mathbf{S'}|\}} \pi_i(1 - s_i) = p$$

$$p \geq SLA$$

$$x_{uv}^k, x_{uv}, s_i^k, s_i \in \{0,1\}$$
$$p \geq 0$$

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