

Survivable IP over WDM Network Design Based on 1 ⊕ 1 Network Coding

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Abstract : Inter-datacenter transport network is very bandwidth and delay demanding. The data transferred over such a network is also highly QoS-exigent mostly because a huge volume of data should be transported transparently with regard to the application user. To avoid the data transfer failure, a backup path should be reserved. No re-routing delay should be observed. A dedicated 1+1 protection is however not applicable in inter-datacenter transport network because of the huge spare capacity. In this context, we propose a survivable virtual network with minimal backup based on network coding (1 ⊕ 1) and solve it using a modified Dijkstra-based heuristic.

Keywords : network coding, dedicated protection, spare capacity, inter-datacenters transport network

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