Data files for "New Valid Inequalities for the Optimal Communication Spanning Tree Problem" by Yogesh Kumar Agarwal and Prahalad Venkateshan

The various problem instances of the paper are included as part of the online supplement.

The input for each problem is named "inputxyz.txt". xyz refers to the "Instance" column reported in the tables. The zip file is labelled "Tablexy.zip" where xy refers to the table number reported in the paper. Table 14 input data is same as the Table 13 input data except that the flow cost for each edge in Table 14 is the corresponding flow cost in Table 13 plus a constant of 2.

The format of each input file is as follows:

Row 1:<n=Number of nodes> <m=Number of edges> <Capacity>//Note, <Capacity> is irrelevant for our work
Row 2:<Edge 1 from> <Edge 1 to> <Fixed Cost> <Flow Cost>//Note, <Fixed Cost> is irrelevant for our work
...
Row m+1:<Edge m from> <Edge m to> <Fixed Cost> <Flow Cost>
Row m+2:<k=Number of commodities>
Row m+3:<Commodity 1 from> <Commodity 1 to> <Traffic of commodity>
...
Row m+k+2:<Commodity k from> <Commodity k to> <Traffic of commodity>
<End Of File>

The optimal solution values of Table 9 problem instances in order are:

105532
103364
107021
108631
113134
106390
108359
111248
110344
107151

The optimal solution values of Table 10 problem instances in order are:

161493
175943
156425
170849
168857
189760
165749
165418
147174
161294

The optimal solution values of Table 11 problem instances in order are:

153128
153159
153795
156573
159519
159722
158270
159169
143095
154181

The optimal solution values for Table 13 problem instances in order are:

253274
171152
159277
138776
237971
190196
132538
177069
208854
166907

The optimal solution values for Table 14 problem instances that converged within 1 hour of computing time are:

Instance 3: 227075
Instance 5: 275522
Instance 6: 220391
Instance 8: 285886
Instance 9: 249277