1 D:\Python\Python\setroute\python.exe "D:\Python\Pycharm\setroute\PyCharm Community Edition 2021.2.3\plugins\python-ce\helpers\pydev\pydevconsole.py" --mode=client --port=27304

2

3 import sys; print('Python %s on %s' % (sys.version, sys.platform))

4 sys.path.extend(['E:\\1 □□□□\\3 □□□□□\\1 □□□□□□\\1 □□□□□□□□\\1_□□□□□□_□□□□\\1_LW_□□□□1\\4 □□□□\\3 python_code\\9 Code for this paper', 'E:/1 □□□□/3 □□□□□/1 □□□□□□/1 □□□□□□□□/1_□□□□□□_□□□□/1_LW_□□□□1/4 □□□□/3 python_code/9 Code for this paper'])

5

6 PyDev console: starting.

7

8 Python 3.9.7 (tags/v3.9.7:1016ef3, Aug 30 2021, 20:19:38) [MSC v.1929 64 bit (AMD64)] on win32

9 >>> runfile('E:/1 □□□□/3 □□□□□/1 □□□□□□/1 □□□□□□□□/1_□□□□□□_□□□□/1_LW_□□□□1/4 □□□□/3 python_code/9 Code for this paper/main_RO_BDC.py', wdir='E:/1 □□□□/3 □□□□□/1 □□□□□□/1 □□□□□□□□/1_□□□□□□_□□□□/1_LW_□□□□1/4 □□□□/3 python_code/9 Code for this paper')

10 Backend TkAgg is interactive backend. Turning interactive mode on.

11 Waiting 5s......

12

13 Optimize the ./R_14_3.xlsx instance by BDC

14

15   Master protblem status = 2 , is Optimal

16   sol_MP_obj = 464.0

17 The initial lb = -inf   ub = inf

18

19 The current iteration cnt = 0

20   Optimization was stopped with status 9

21   Dual problem status = 9

22   Add optimal cut

23   Master protblem status = 2 , is Optimal

24   Deterministic Sub problem Status= 2 , is Optimal

25   lb = 501.07166414759524   ub = 501.07166414759524

26   MPObj = 501.07166414759524   MPObj_Remove_Hua = 496.0   DualSPObj = 5.071664147595268   Hua = 5.071664147595267 Deterministic_SP_SPObj = 386.0

27

28 ub - lb = 0.0

29

30 Iteration cycle stopped by termination criterion 1: Because ub - lb <= eps, the iteration stop, and cnt = 0

31   i: 0.0 l_i: 5.0 p_i: 26.0 al_i: 2.0   sol_a_i: 2.0 sol_g_i: 0.0 d_i: 19.0 sol_taoi: 2.0 sol_deltai: 14.0 sol_deltai - sol_taoi: 12.0 sol_taoP: 2.0 sol_deltaP: 5.0 sol_deltaP - sol_taoP: 3.0 cl_i: 2974547.0 sol_c_i: 2974547.0 sol_gp_i: 0.0 total work: 3954660.0 wasted work: 3.7175623188845566

32   i: 1.0 l_i: 6.0 p_i: 20.0 al_i: 5.0   sol_a_i: 5.0 sol_g_i: 0.0 d_i: 13.0 sol_taoi: 5.0 sol_deltai: 11.0 sol_deltai - sol_taoi: 6.0 sol_taoP: 5.0 sol_deltaP: 7.0 sol_deltaP - sol_taoP: 2.0 cl_i: 1577595.0 sol_c_i: 1577595.0 sol_gp_i: 0.0 total work: 1845508.0 wasted work: 1.016192289602646

33   i: 2.0 l_i: 5.0 p_i: 15.0 al_i: 6.0   sol_a_i: 6.0 sol_g_i: 0.0 d_i: 22.0 sol_taoi: 6.0 sol_deltai: 17.0 sol_deltai - sol_taoi: 11.0 sol_taoP: 6.0 sol_deltaP: 8.0 sol_deltaP - sol_taoP: 2.0 cl_i: 2769643.0 sol_c_i: 2769643.0 sol_gp_i: 0.0 total work: 2900084.0 wasted work: 0.49476187586290604

34   i: 3.0 l_i: 5.0 p_i: 10.0 al_i: 8.0   sol_a_i: 8.0 sol_g_i: 0.0 d_i: 26.0 sol_taoi: 8.0 sol_deltai: 21.0 sol_deltai - sol_taoi: 13.0 sol_taoP: 8.0 sol_deltaP: 11.0 sol_deltaP - sol_taoP: 3.0 cl_i: 3322849.0 sol_c_i: 3322849.0 sol_gp_i: 0.0 total work: 3559194.0 wasted work: 0.8964550681980246

35   i: 4.0 l_i: 5.0 p_i: 5.0 al_i: 9.0   sol_a_i: 9.0 sol_g_i: 0.0 d_i: 31.0 sol_taoi: 9.0 sol_deltai: 26.0 sol_deltai - sol_taoi: 17.0 sol_taoP: 9.0 sol_deltaP: 14.0 sol_deltaP - sol_taoP: 5.0 cl_i: 4260173.0 sol_c_i: 4260173.0 sol_gp_i: 0.0 total work: 4481948.0 wasted work: 0.8411911517045713

36   i: 5.0 l_i: 5.0 p_i: 0.0 al_i: 15.0   sol_a_i: 15.0 sol_g_i: 0.0 d_i: 34.0 sol_taoi: 15.0 sol_deltai: 29.0 sol_deltai - sol_taoi: 14.0 sol_taoP: 15.0 sol_deltaP: 19.0 sol_deltaP - sol_taoP: 4.0 cl_i: 3561592.0 sol_c_i: 3561592.0 sol_gp_i: 0.0 total work: 4218304.0 wasted work: 2.490904401389753

37   i: 6.0 l_i: 5.0 p_i: 15.0 al_i: 20.0   sol_a_i: 20.0 sol_g_i: 0.0 d_i: 37.0 sol_taoi: 20.0 sol_deltai: 32.0 sol_deltai - sol_taoi: 12.0 sol_taoP: 20.0 sol_deltaP: 22.0 sol_deltaP - sol_taoP: 2.0 cl_i: 2942946.0 sol_c_i: 2942946.0 sol_gp_i: 0.0 total work: 3163728.0 wasted work: 0.8374247090773922

38   i: 7.0 l_i: 5.0 p_i: 10.0 al_i: 20.0   sol_a_i: 22.0 sol_g_i: 0.4 d_i: 51.0 sol_taoi: 22.0 sol_deltai: 34.0 sol_deltai - sol_taoi: 12.0 sol_taoP: 22.0 sol_deltaP: 25.0 sol_deltaP - sol_taoP: 3.0 cl_i: 2972796.0 sol_c_i: 4238287.2 sol_gp_i: 0.8 total work: 4613770.0 wasted work: 1.424203850647084

39   i: 8.0 l_i: 6.0 p_i: 20.0 al_i: 25.0   sol_a_i: 25.0 sol_g_i: 0.0 d_i: 55.0 sol_taoi: 25.0 sol_deltai: 30.0 sol_deltai - sol_taoi: 5.0 sol_taoP: 25.0 sol_deltaP: 26.0 sol_deltaP - sol_taoP: 1.0 cl_i: 1132760.0 sol_c_i: 1554590.4 sol_gp_i: 0.4 total work: 1581864.0 wasted work: 0.10344858976498647

40   i: 9.0 l_i: 5.0 p_i: 10.0 al_i: 33.0   sol_a_i: 43.0 sol_g_i: 1.0 d_i: 77.0 sol_taoi: 43.0 sol_deltai: 57.0 sol_deltai - sol_taoi: 14.0 sol_taoP: 43.0 sol_deltaP: 48.0 sol_deltaP - sol_taoP: 5.0 cl_i: 3660030.0 sol_c_i: 3870945.2 sol_gp_i: 0.2 total work: 3954660.0 wasted work: 0.31752969913974483

41   i: 10.0 l_i: 5.0 p_i: 0.0 al_i: 35.0   sol_a_i: 42.0 sol_g_i: 1.0 d_i: 69.0 sol_taoi: 42.0 sol_deltai: 53.0 sol_deltai - sol_taoi: 11.0 sol_taoP: 42.0 sol_deltaP: 47.0 sol_deltaP - sol_taoP: 5.0 cl_i: 2645247.0 sol_c_i: 4490755.0 sol_gp_i: 1.0 total work: 4745592.0 wasted work: 0.9665951055210814

42   i: 11.0 l_i: 5.0 p_i: 20.0 al_i: 39.0   sol_a_i: 43.2 sol_g_i: 0.6 d_i: 71.0 sol_taoi: 44.0 sol_deltai: 55.0 sol_deltai - sol_taoi: 11.0 sol_taoP: 44.0 sol_deltaP: 46.0 sol_deltaP - sol_taoP: 2.0 cl_i: 2663169.0 sol_c_i: 2663169.0 sol_gp_i: 0.0 total work: 2900084.0 wasted work: 0.8986170745399099

43   i: 12.0 l_i: 5.0 p_i: 5.0 al_i: 45.0   sol_a_i: 48.6 sol_g_i: 0.6 d_i: 74.0 sol_taoi: 49.0 sol_deltai: 57.0 sol_deltai - sol_taoi: 8.0 sol_taoP: 49.0 sol_deltaP: 52.0 sol_deltaP - sol_taoP: 3.0 cl_i: 1997374.0 sol_c_i: 2788306.0 sol_gp_i: 0.6 total work: 2900084.0 wasted work: 0.4239732366372836

44   i: 13.0 l_i: 5.0 p_i: 15.0 al_i: 49.0   sol_a_i: 52.6 sol_g_i: 0.4 d_i: 82.0 sol_taoi: 53.0 sol_deltai: 60.0 sol_deltai - sol_taoi: 7.0 sol_taoP: 53.0 sol_deltaP: 56.0 sol_deltaP - sol_taoP: 3.0 cl_i: 1600015.0 sol_c_i: 3709167.0 sol_gp_i: 1.0 total work: 4745592.0 wasted work: 3.9311533734884923

45

46 Optimal objective = 882.0

47

48 Time: 1235.000000

49

50

51