Experiment for DASLR

1. Experiment Environment

Computer environment:

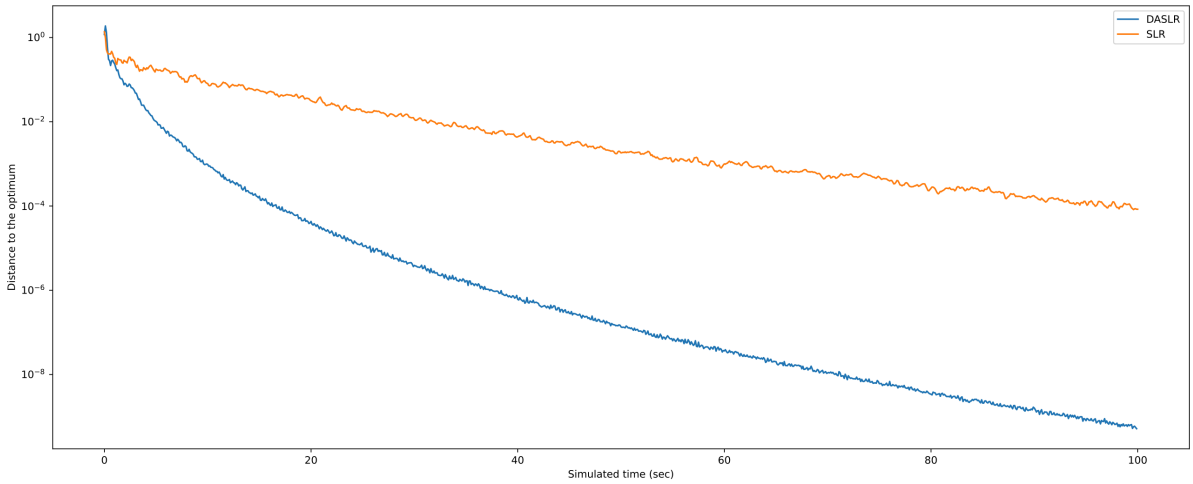
```
CPU =  AMD Ryzen Threadripper 3970X 32-Core Processor
Total number of processes = 64
Momory = 256GB
```

Python environment:

```
Make sure below solfware or packages are installed:

Python 3.8.10
ILOG CPLEX STDIO 20.10

cplex >= 20.1.0.0
docplex >= 2.18.200
numpy >= 1.21.0
pandas >= 1.2.5
seaborn >= 0.11.1
```

2. A Small Integer Programming Problem.

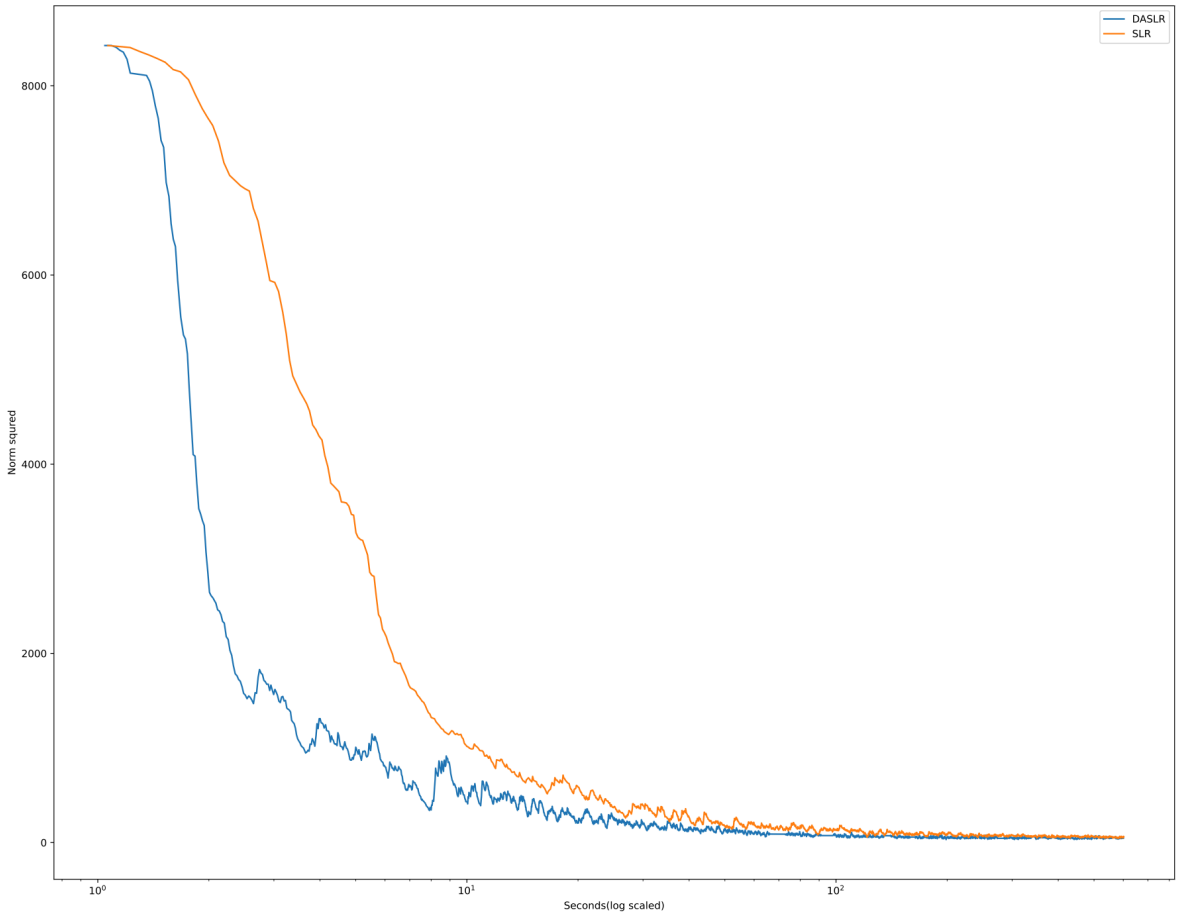
```
Run those codes in order

./case1/SLR.py
./case1/DASLR.py
./case1/draw_result.py

The experiment results are in

.case1/result_in_100sec_100avg.pdf
```

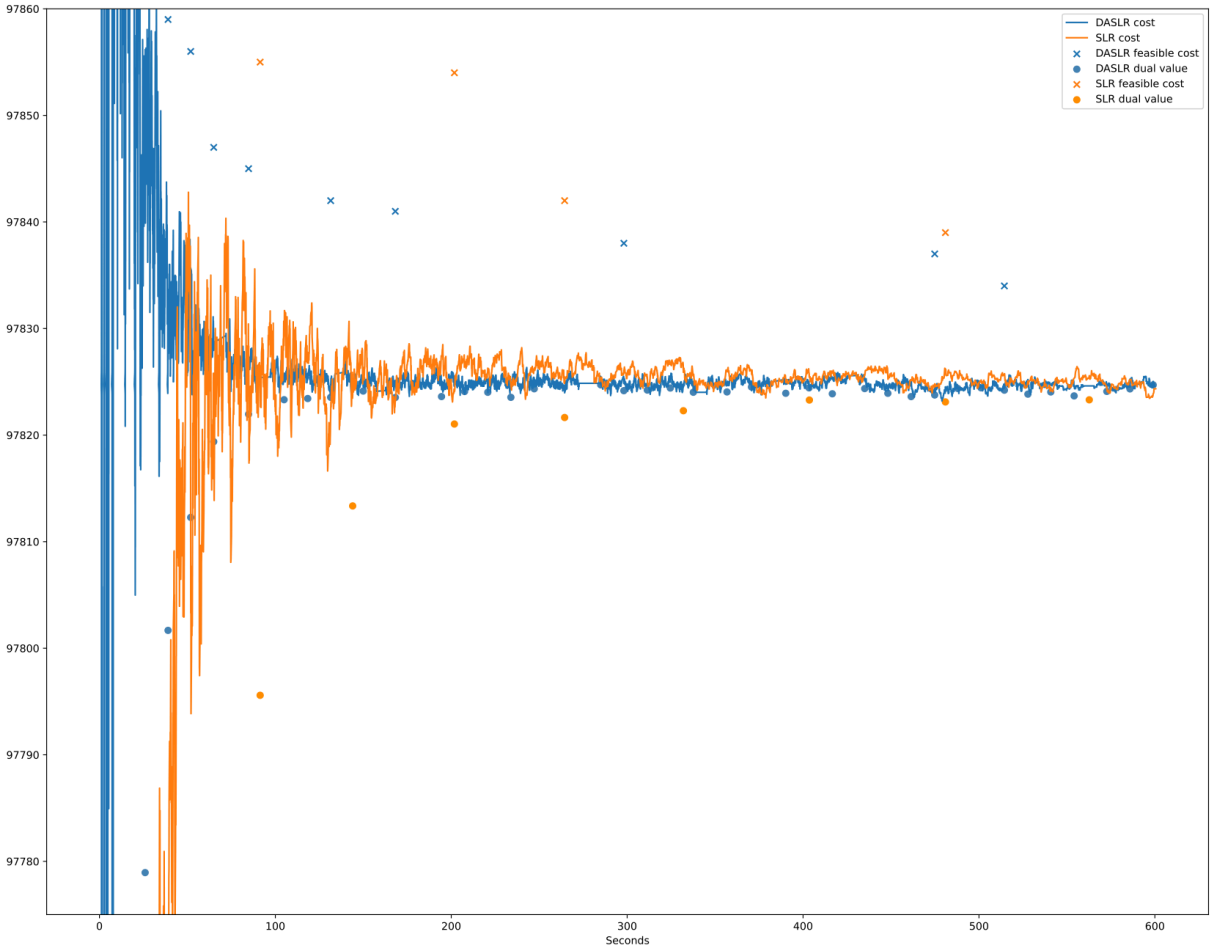


In above figure, 100 experiments are conducted repeadly. The minimum time slot is 0.1 second, the last valid result in each time slot is selected and taken average.

3. Generalized Assignment Problems(d201600)

```
Run those codes in order

./case2/SLR.py
./case2/DASLR.py
./case2/draw_result.py

The experiment results are in

./case2/DASLRlambdas.npy
./case2/DASLRlogs.npy
./case2/DASLRsolutions.npy
./case2/SLRlambdas.npy
./case2/SLRlogs.npy
./case2/SLRsolutions.npy

./case2/result_in_600sec.pdf
./case2/result_in_600sec_1.pdf
```


DASLR
SLR
8000
6000
4000
2000
0
Norm squred
10^0
10^1
10^2
Seconds(log scaled)


DASLR cost
SLR cost
DASLR feasible cost
DASLR dual value
SLR feasible cost
SLR dual value
97860
97850
97840
97830
97820
97810
97800
97790
97780
0
100
200
300
400
500
600
Seconds