

# **Scalability Report**

Large Assignment (C)

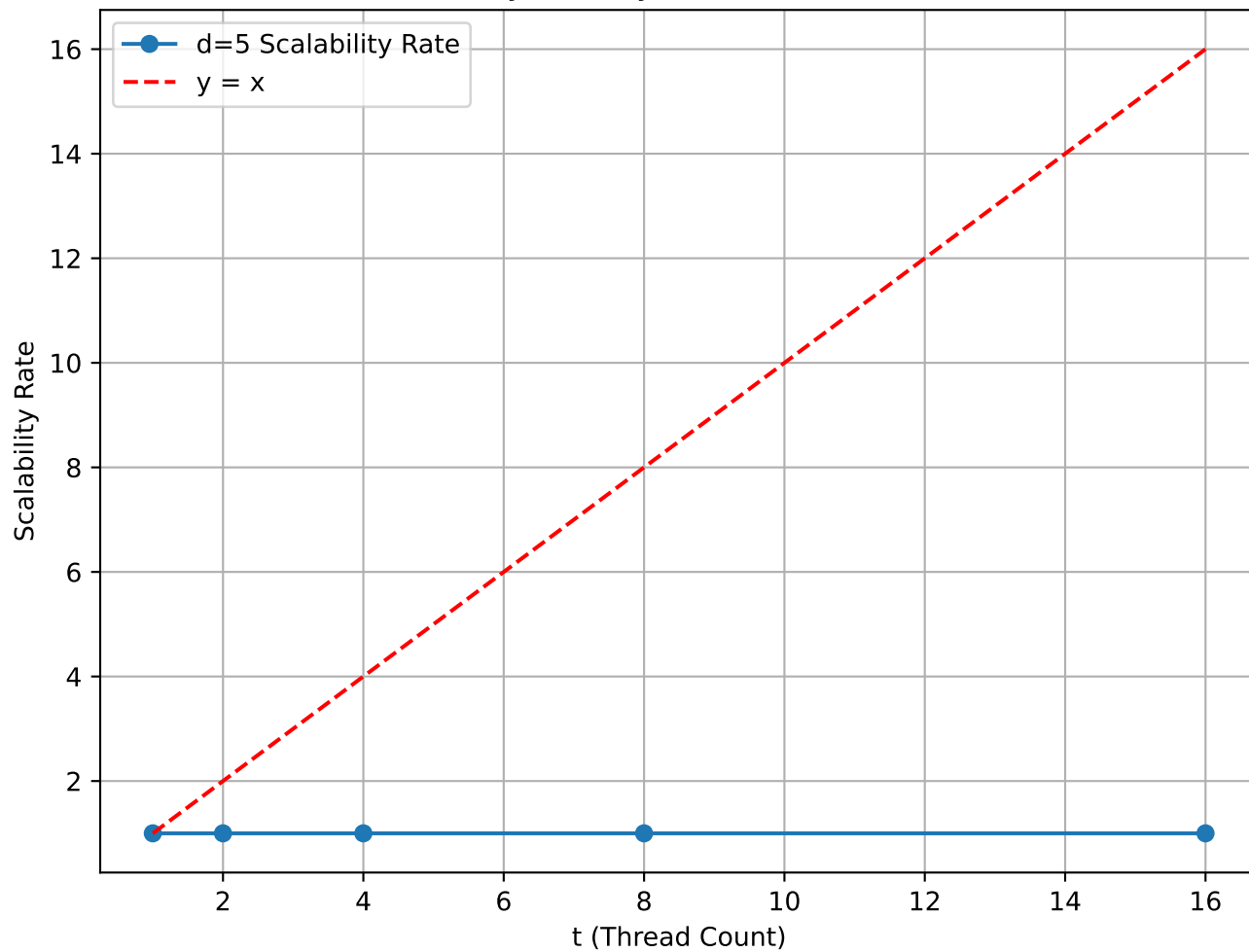
Author: Marcin Szopa

Index: 459531

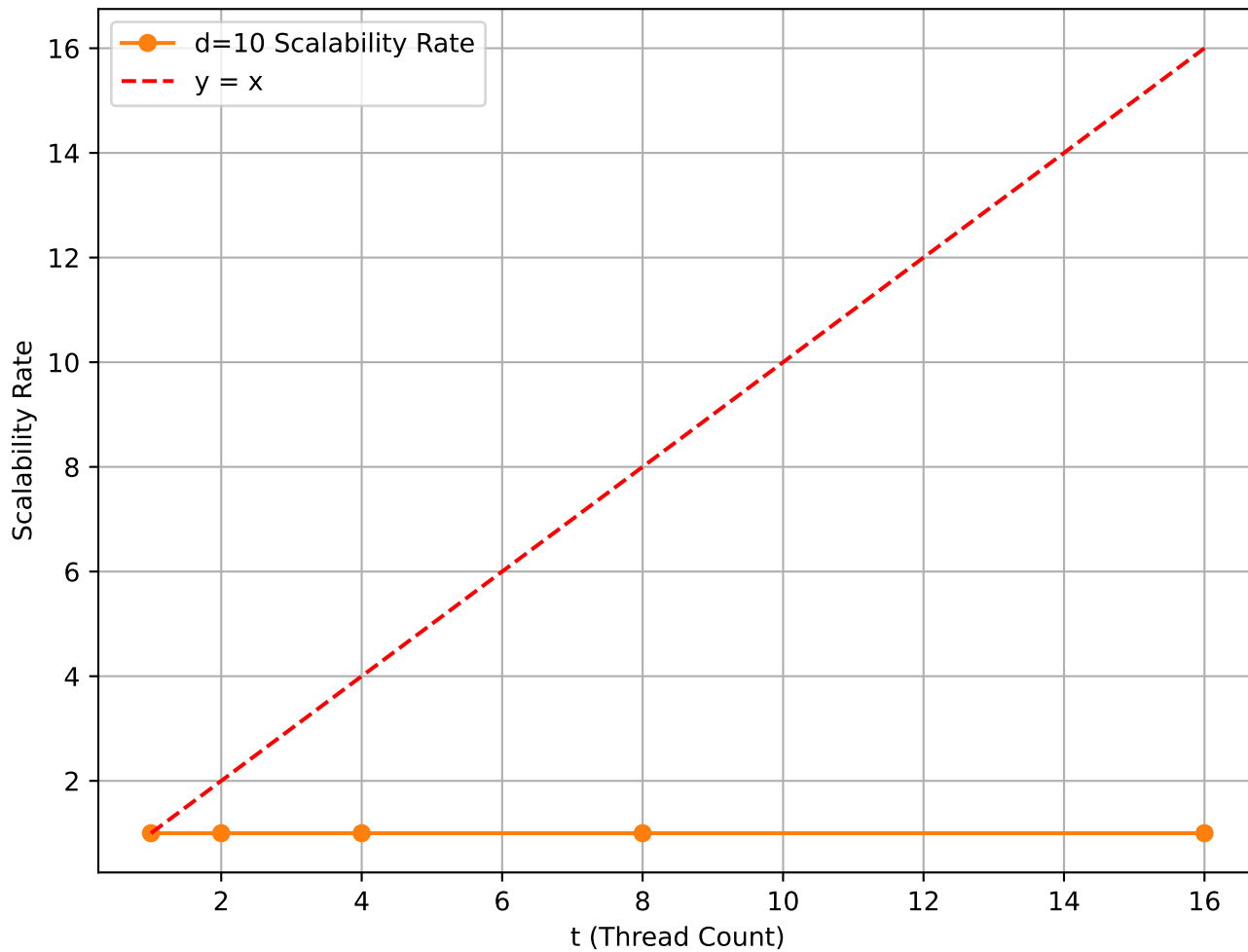
## **Structure**

1. Scalability Rate by thread count for each dataset size
2. Combined Scalability Rate by thread count (all dataset sizes)
3. Timing by thread count for each dataset size
4. Parallel Data Table
5. Reference Data Table

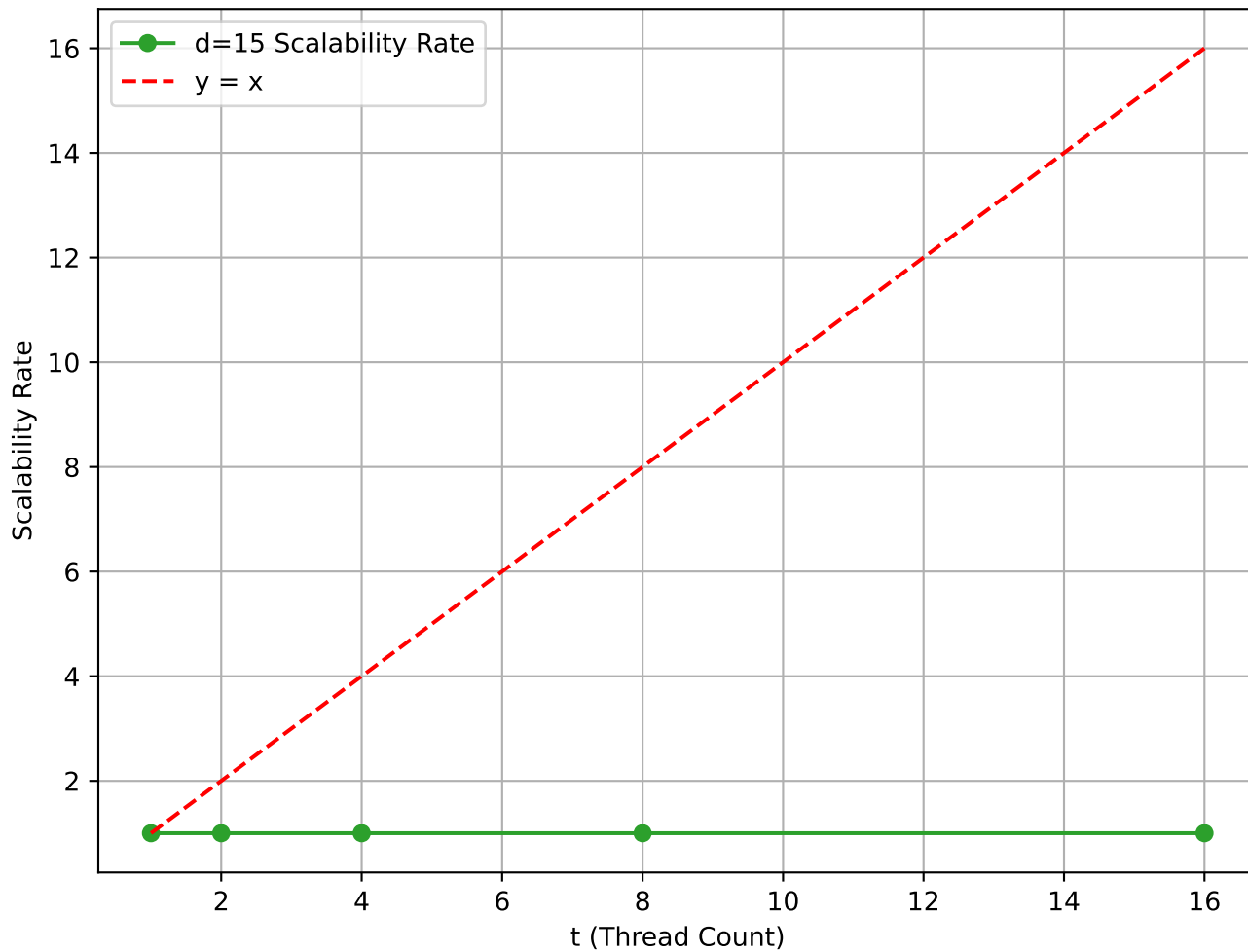
Scalability Rate by thread count for d=5



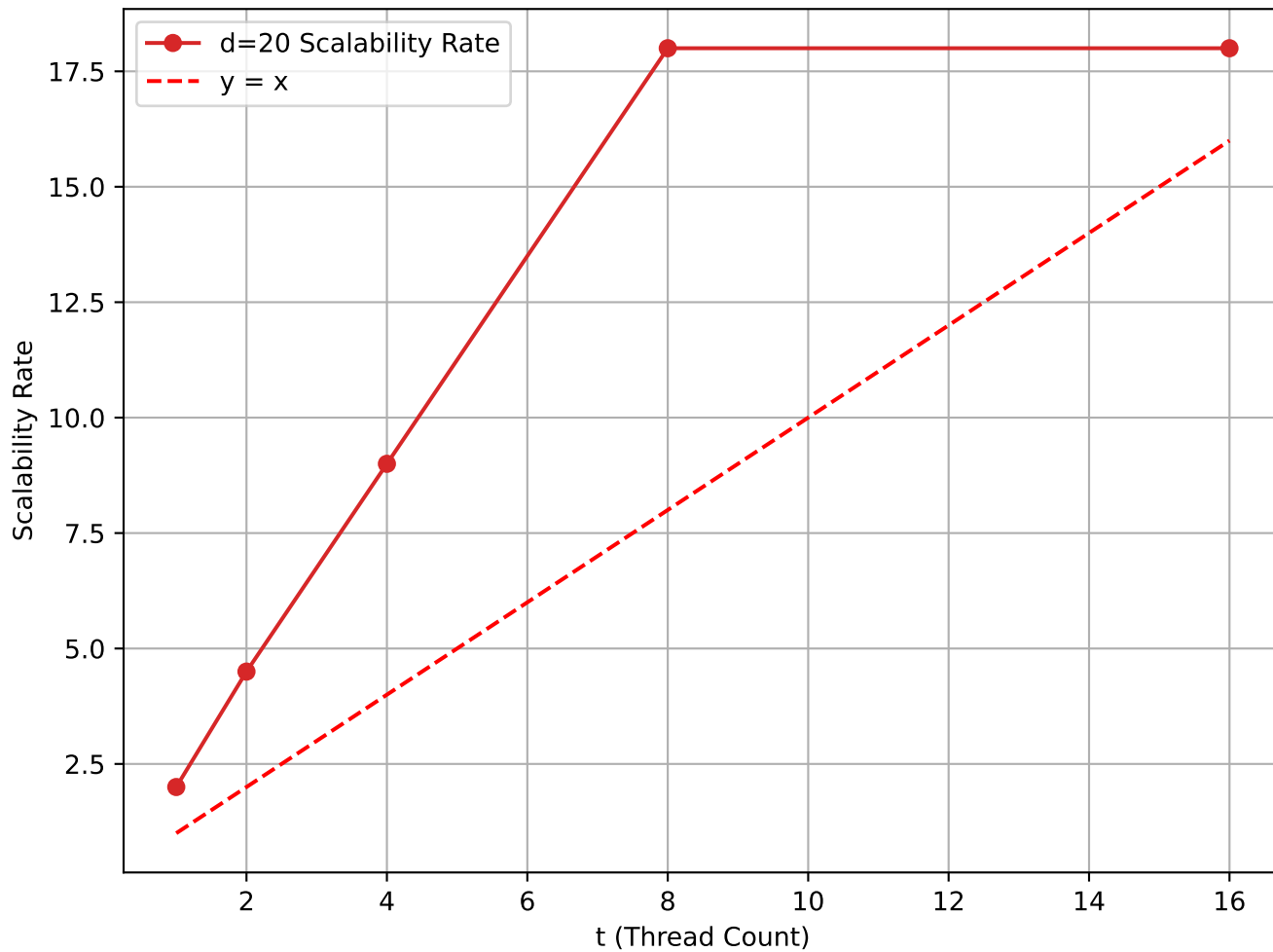
Scalability Rate by thread count for d=10



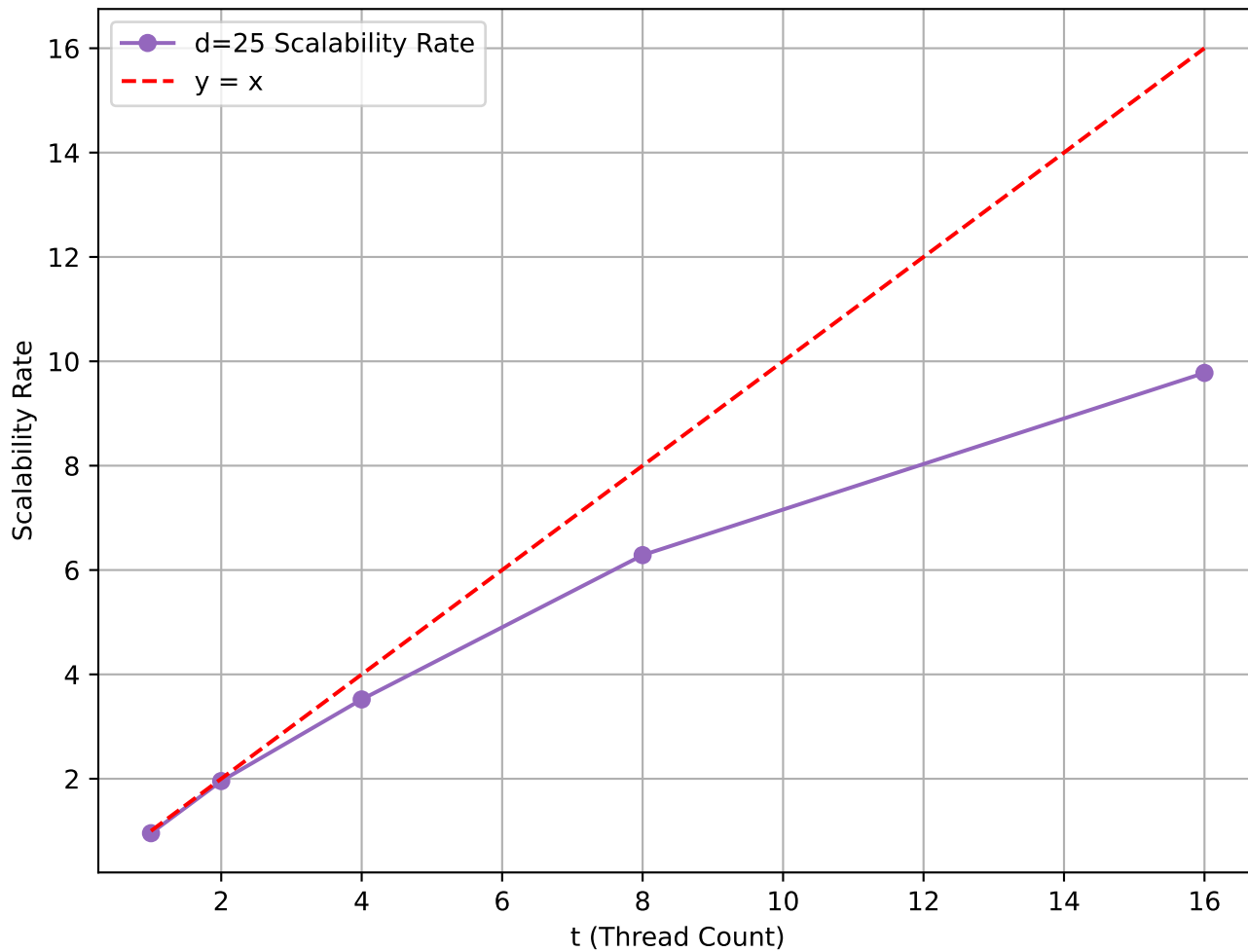
Scalability Rate by thread count for d=15



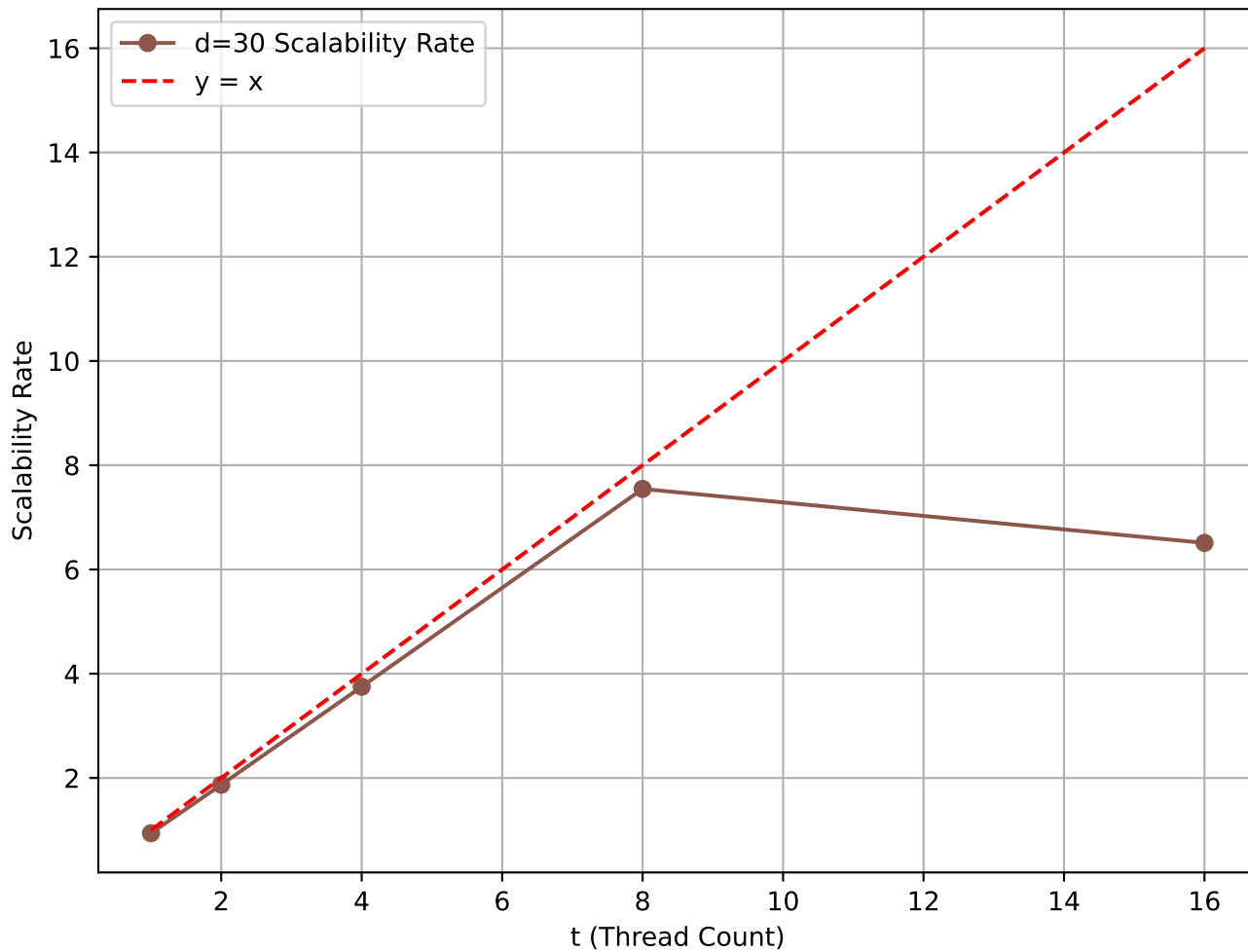
Scalability Rate by thread count for d=20



Scalability Rate by thread count for d=25

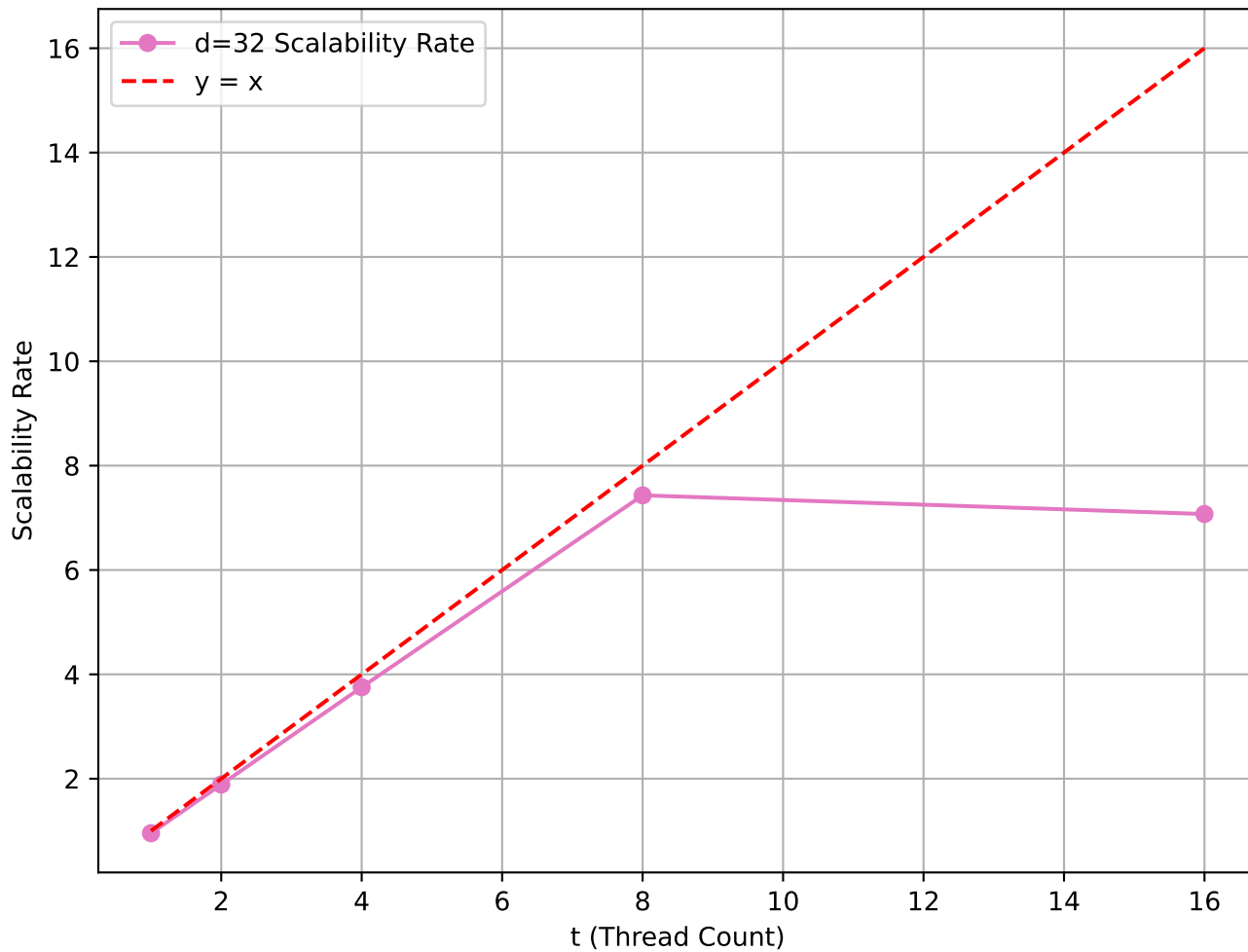


Scalability Rate by thread count for d=30

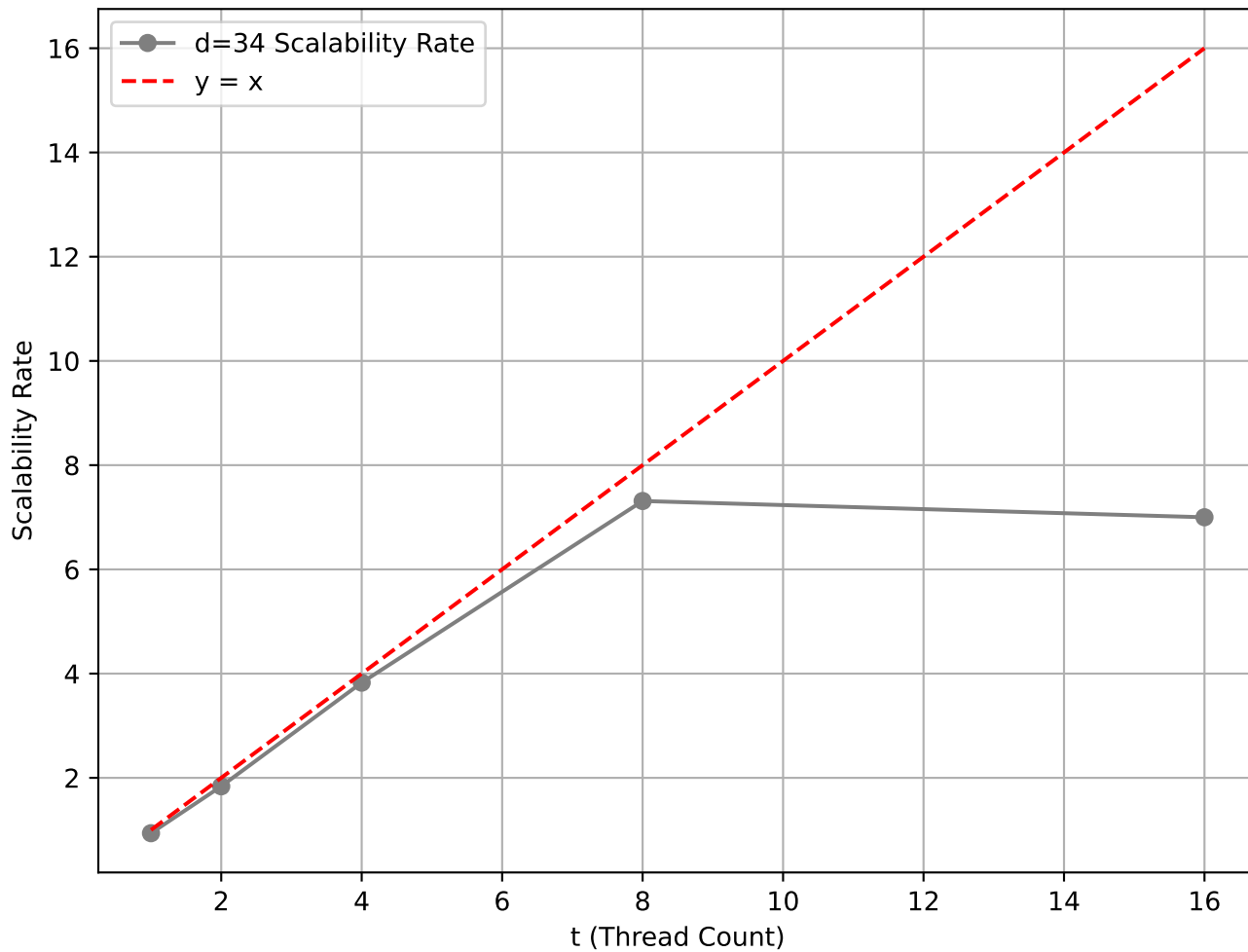




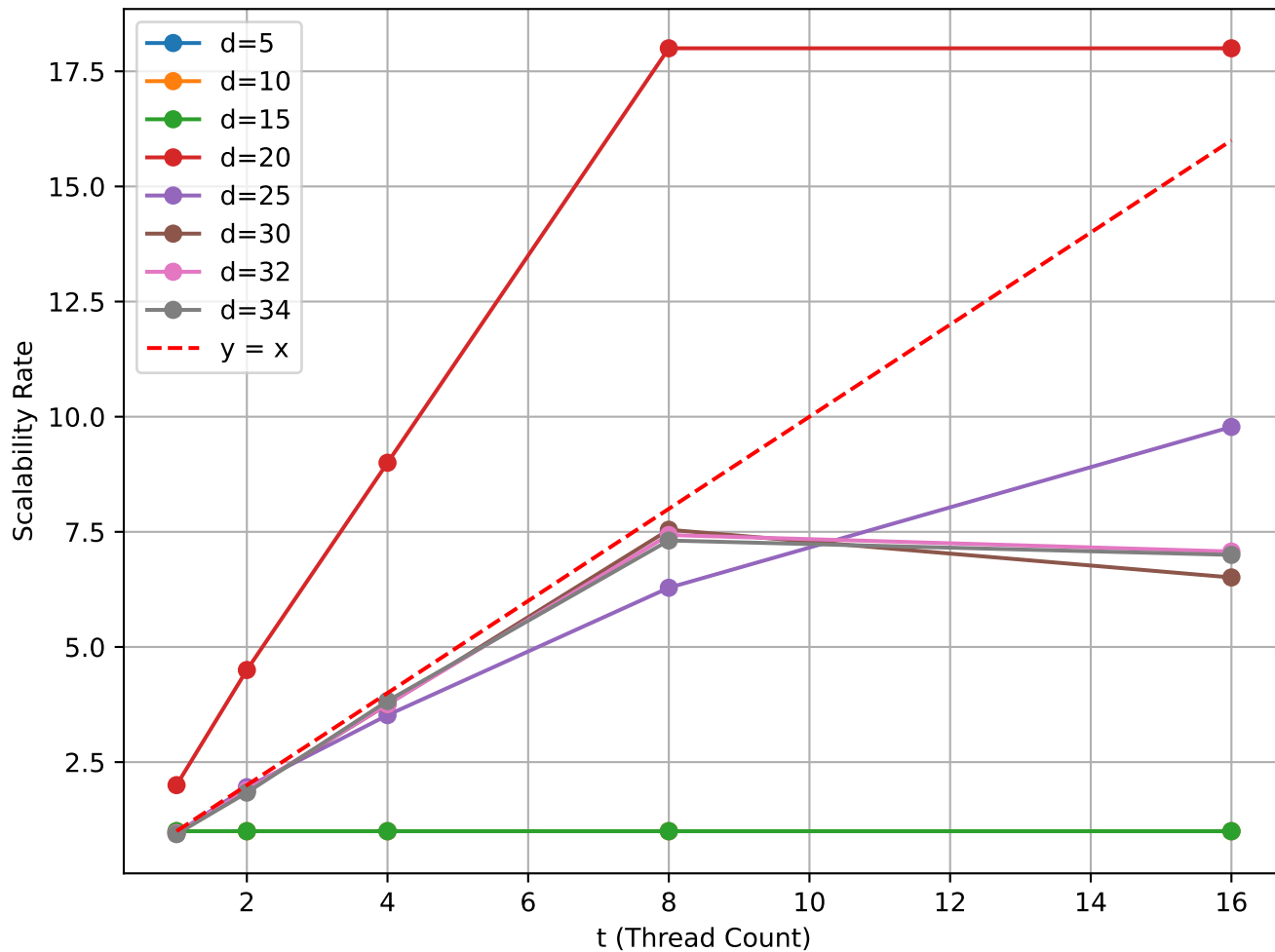
Scalability Rate by thread count for d=32



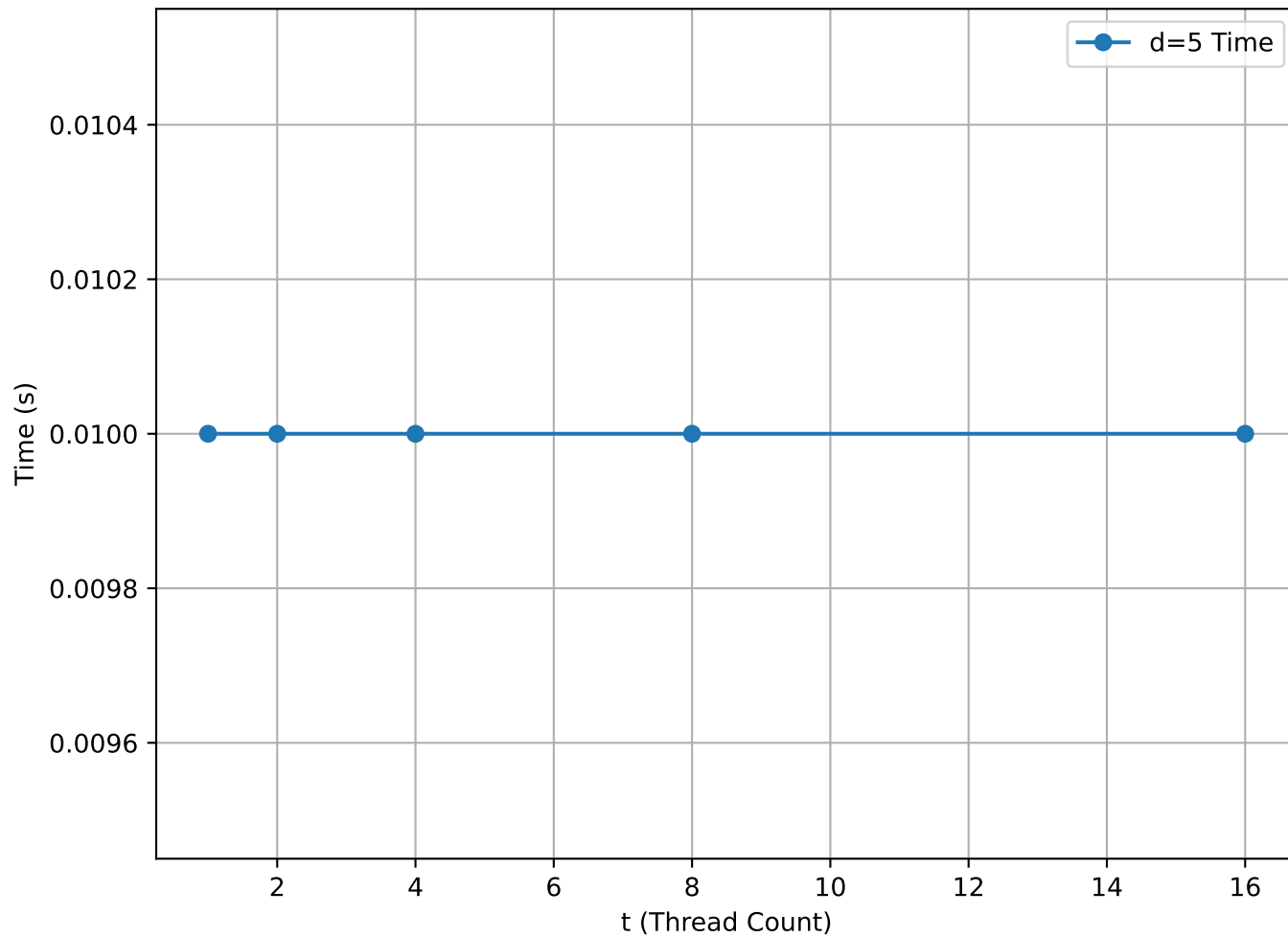
Scalability Rate by thread count for d=34



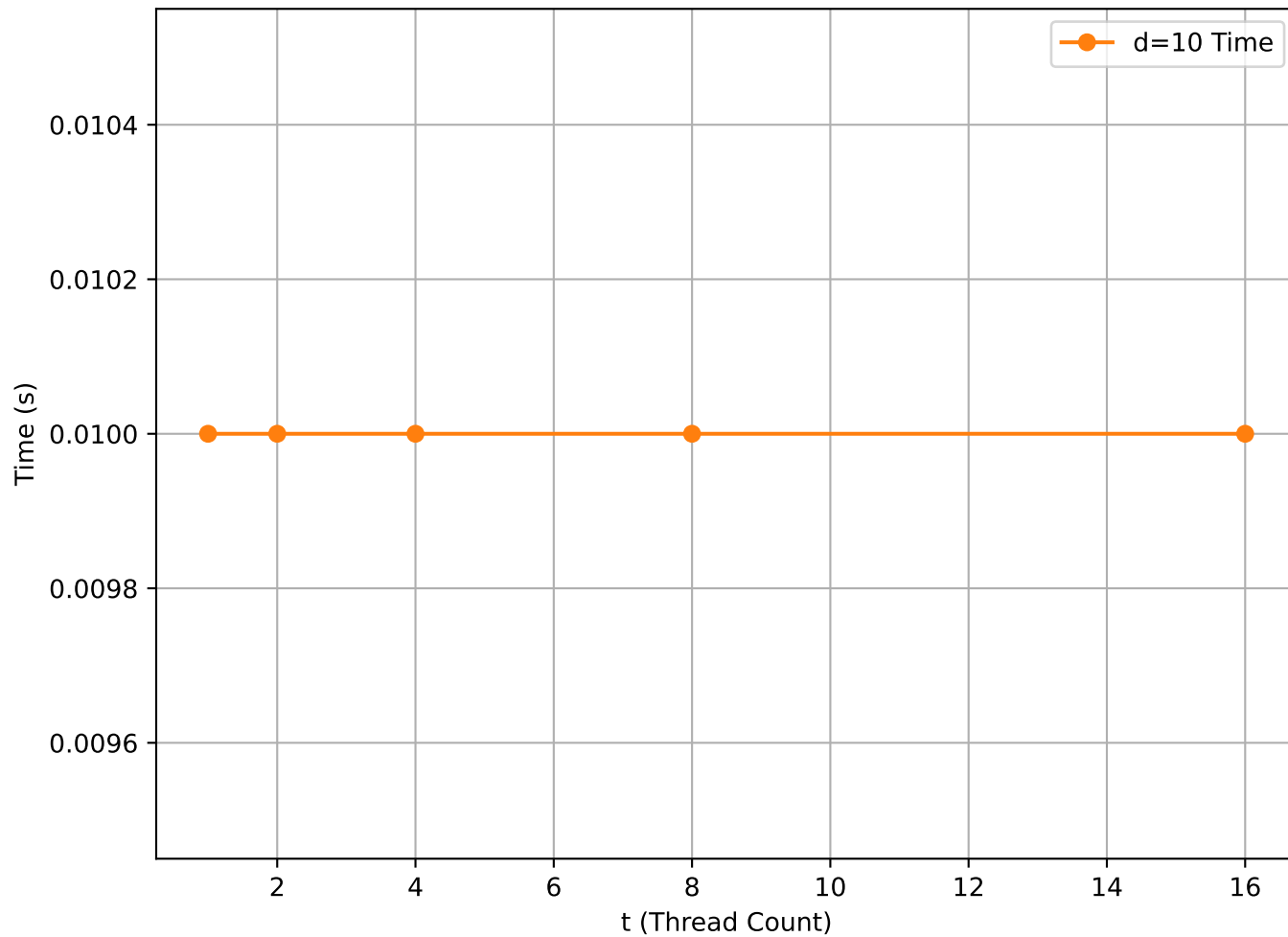
Scalability Rate by thread count (all d values)



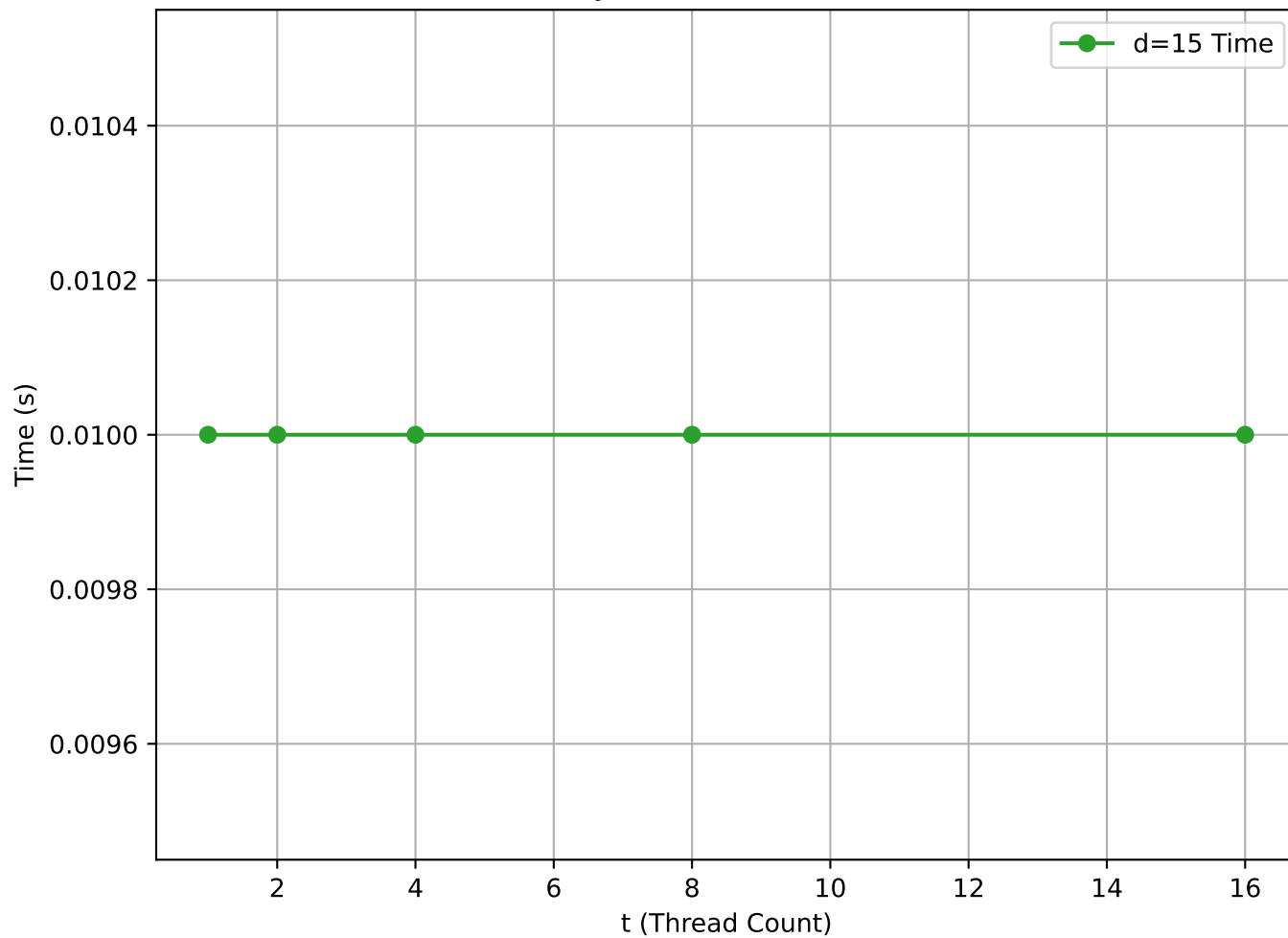
Time by thread count for d=5



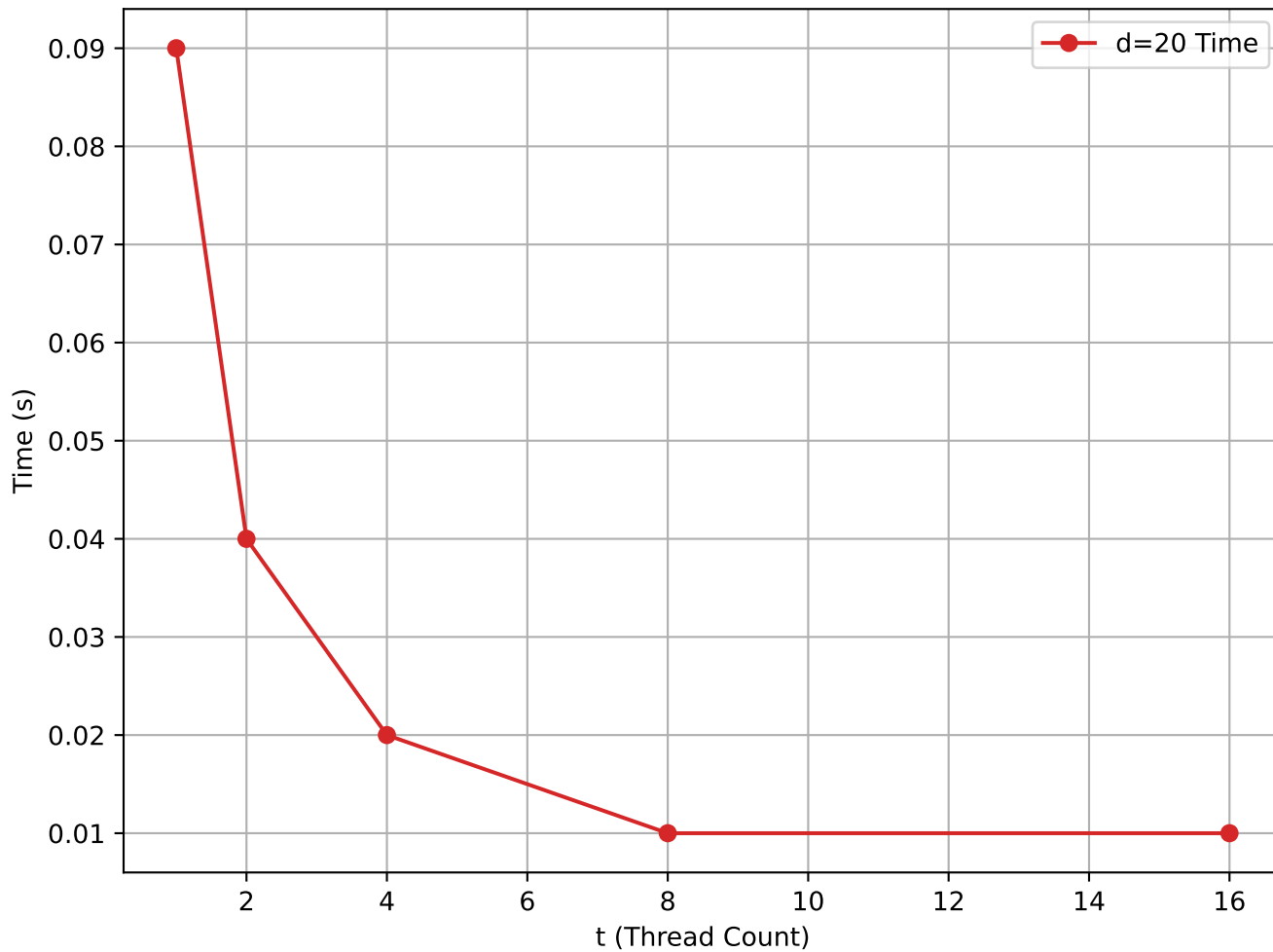
Time by thread count for d=10



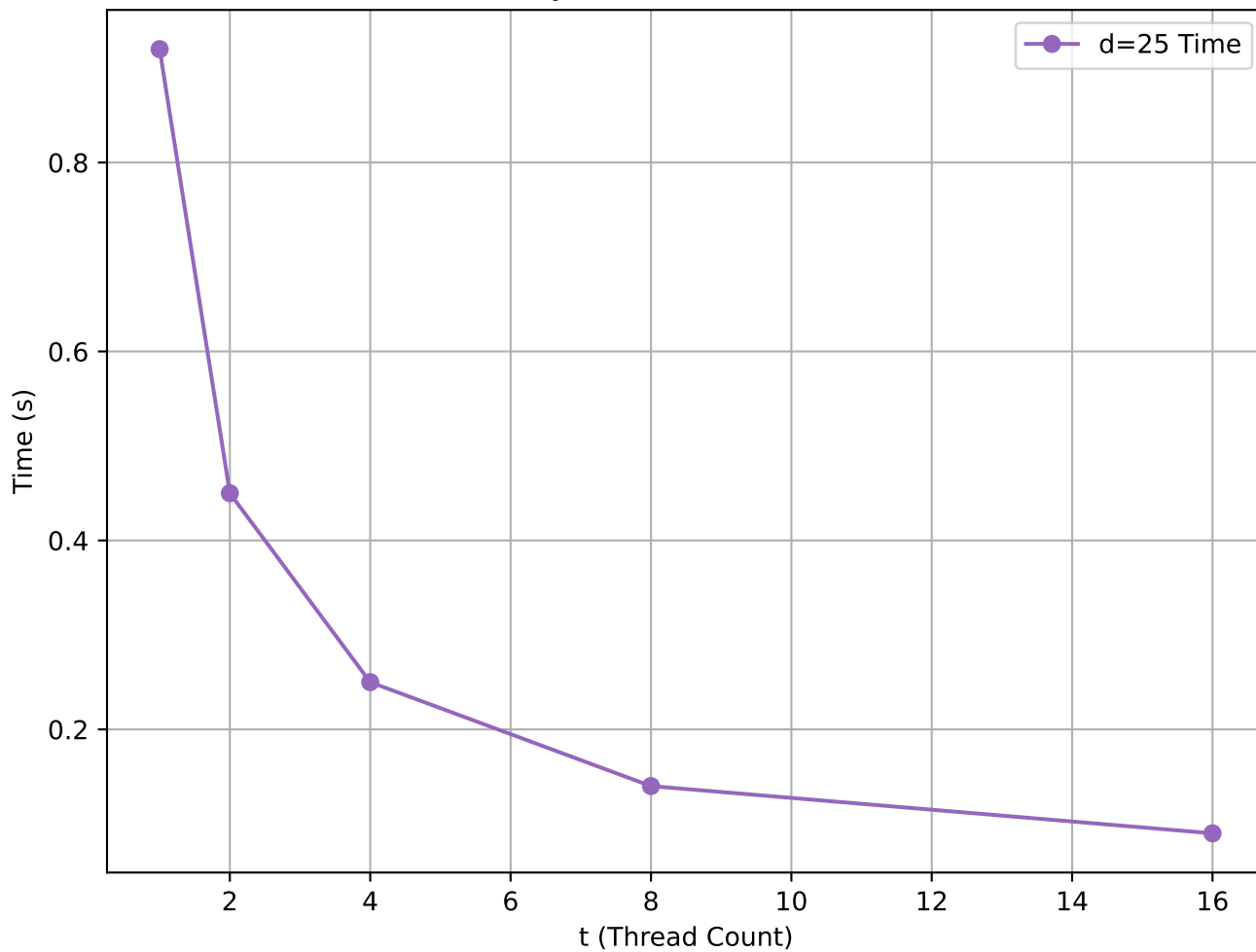
Time by thread count for d=15



Time by thread count for d=20

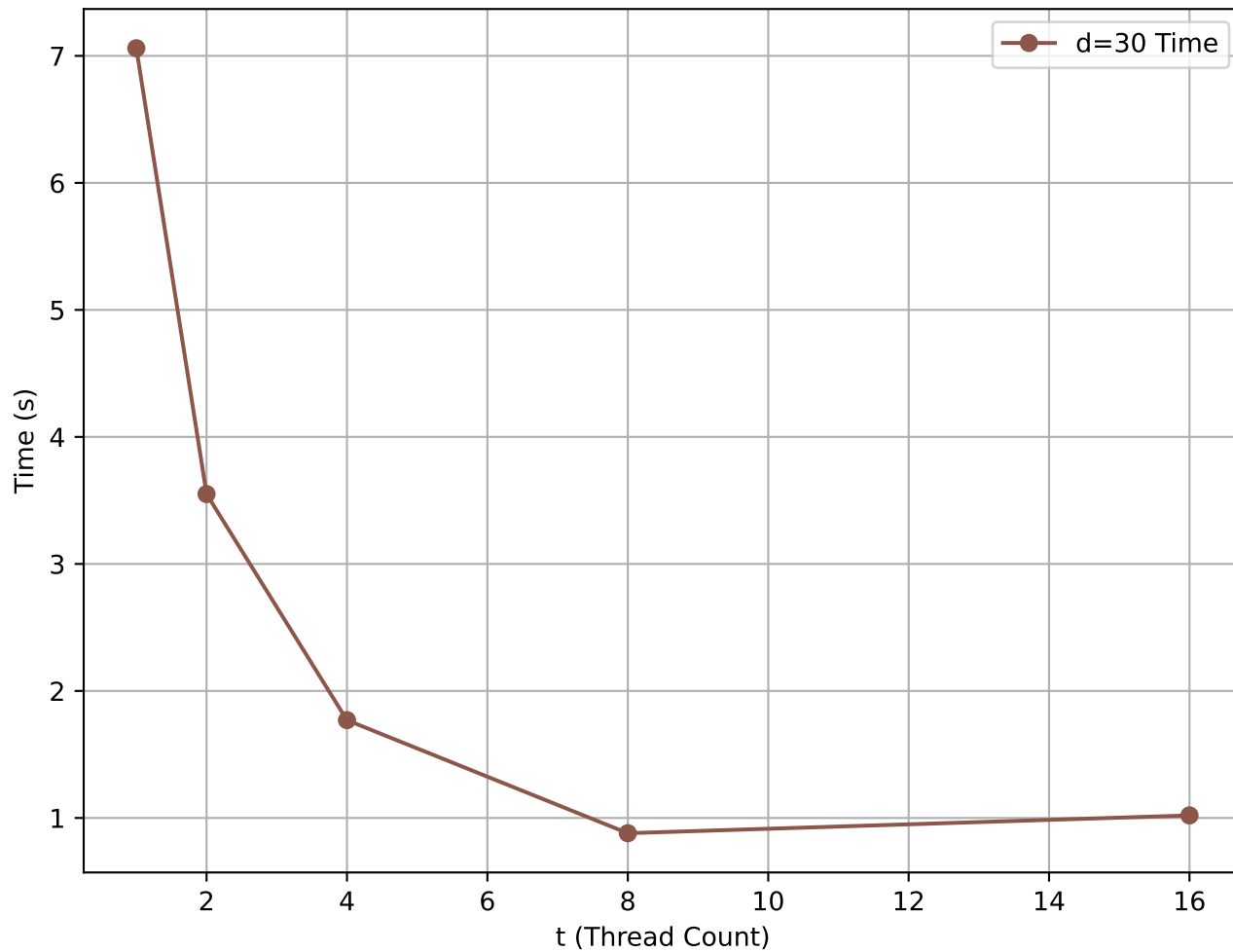


Time by thread count for d=25

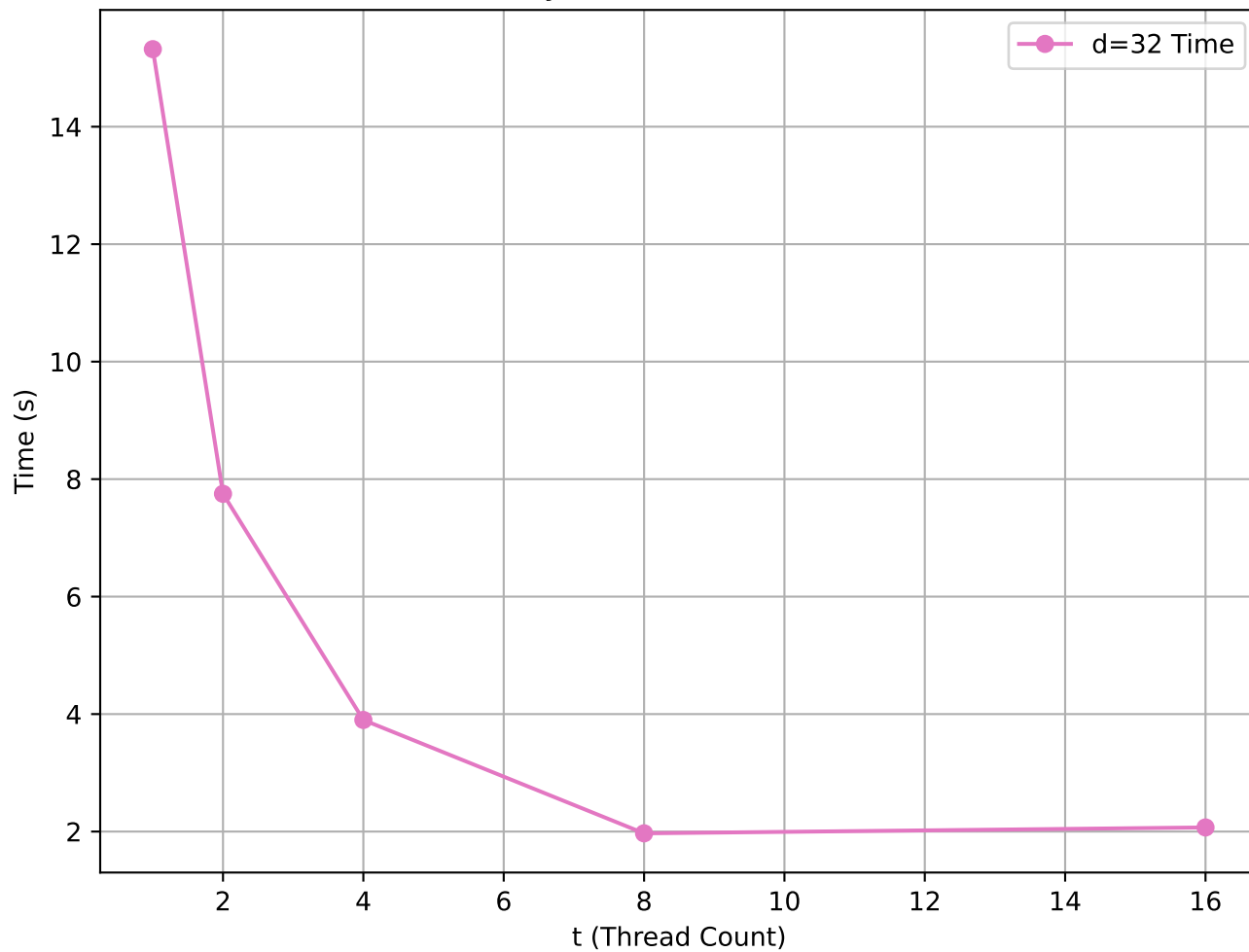




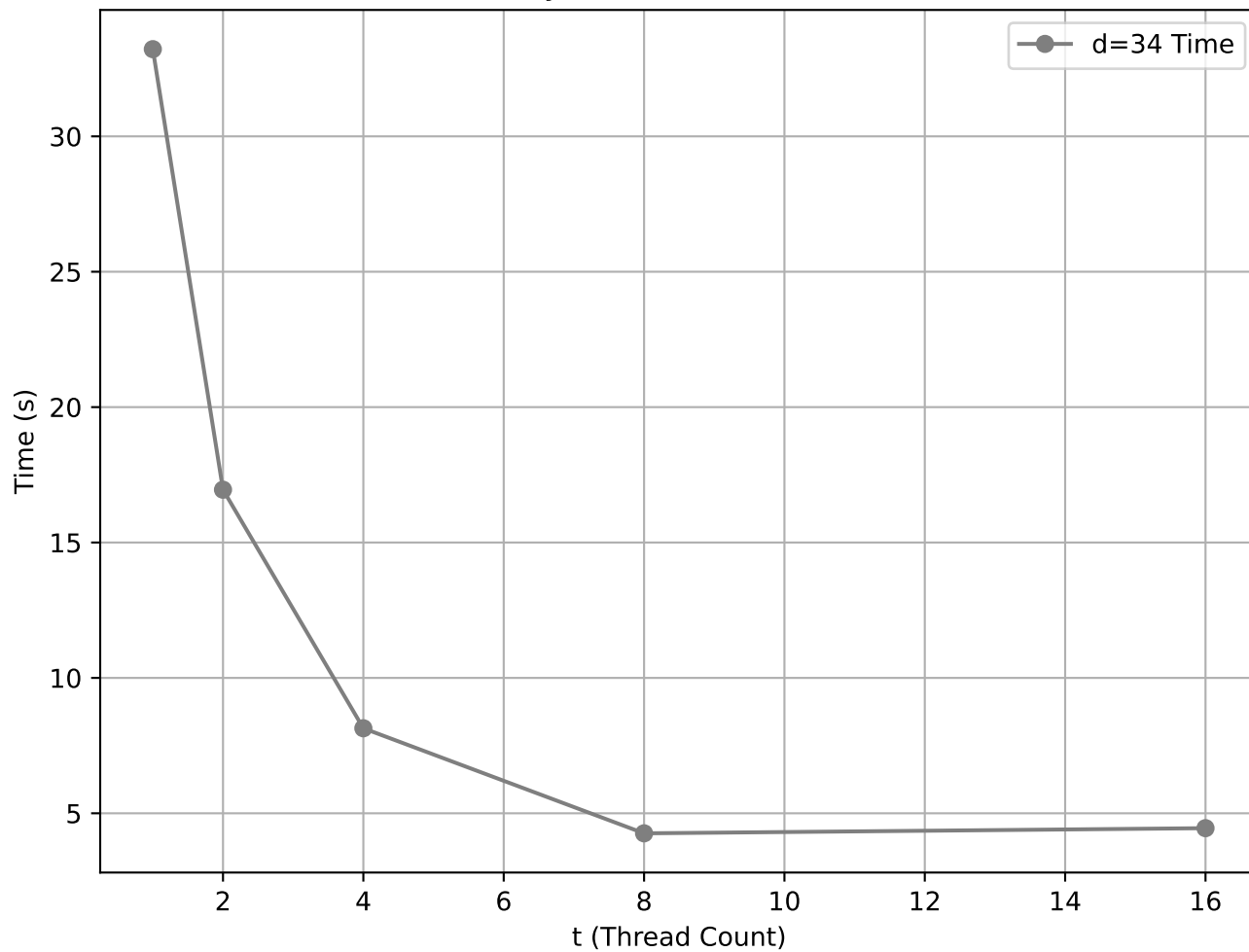
Time by thread count for d=30



Time by thread count for d=32



Time by thread count for d=34



**Scalability Data Table**

d	t	time	scalability_rate
5.0	1.0	0.01	1.0
5.0	2.0	0.01	1.0
5.0	4.0	0.01	1.0
5.0	8.0	0.01	1.0
5.0	16.0	0.01	1.0
10.0	1.0	0.01	1.0
10.0	2.0	0.01	1.0
10.0	4.0	0.01	1.0
10.0	8.0	0.01	1.0
10.0	16.0	0.01	1.0
15.0	1.0	0.01	1.0
15.0	2.0	0.01	1.0
15.0	4.0	0.01	1.0
15.0	8.0	0.01	1.0
15.0	16.0	0.01	1.0
20.0	1.0	0.09	2.0
20.0	2.0	0.04	4.5
20.0	4.0	0.02	9.0
20.0	8.0	0.01	18.0
20.0	16.0	0.01	18.0
25.0	1.0	0.92	0.9565217391304347
25.0	2.0	0.45	1.9555555555555555
25.0	4.0	0.25	3.52
25.0	8.0	0.14	6.285714285714286
25.0	16.0	0.09	9.777777777777779
30.0	1.0	7.06	0.9405099150141644
30.0	2.0	3.55	1.8704225352112676
30.0	4.0	1.77	3.7514124293785307
30.0	8.0	0.88	7.545454545454545
30.0	16.0	1.02	6.509803921568627

d	t	time	scalability_rate
32.0	1.0	15.32	0.9556135770234987
32.0	2.0	7.75	1.8890322580645162
32.0	4.0	3.9	3.7538461538461543
32.0	8.0	1.97	7.431472081218274
32.0	16.0	2.07	7.072463768115943
34.0	1.0	33.22	0.9376881396748946
34.0	2.0	16.95	1.8377581120943953
34.0	4.0	8.14	3.8267813267813264
34.0	8.0	4.26	7.312206572769953
34.0	16.0	4.45	6.999999999999999

**Reference Data Table**

t	d	time	memory
1.0	5.0	0.01	1540.0
1.0	10.0	0.01	1456.0
1.0	15.0	0.01	1472.0
1.0	20.0	0.18	1464.0
1.0	25.0	0.88	1512.0
1.0	30.0	6.64	1484.0
1.0	32.0	14.64	1484.0
1.0	34.0	31.15	1640.0