

extrinsic	time (μs)
groth16_verification	29261.578
groth16_verification_optimized	5800.978
bls12_377_pairing	9754.468
bls12_377_pairing_optimized	216.636
bls12_377_msm_g1_10	7115.691
bls12_377_msm_g1_10_optimized	51.477
bls12_377_msm_g1_1000	238300.297
bls12_377_msm_g1_1000_optimized	4484.671
bls12_377_msm_g2_10	26029.44
bls12_377_msm_g2_10_optimized	89.927
bls12_377_msm_g2_1000	814884.622
bls12_377_msm_g2_1000_optimized	7948.464
bls12_377_mul_projective_g1	9.805
bls12_377_mul_projective_g1_optimized	11.416
bls12_377_mul_affine_g1	10.171
bls12_377_mul_affine_g1_optimized	11.111
bls12_377_mul_projective_g2	19.476
bls12_377_mul_projective_g2_optimized	16.643
bls12_377_mul_affine_g2	19.047

extrinsic	time (μ s)
bls12_377_mul_affine_g2_optimized	17.18
bls12_381_pairing	11812.518
bls12_381_pairing_optimized	448.965
bls12_381_msm_g1_10	9312.992
bls12_381_msm_g1_10_optimized	87.626
bls12_381_msm_g1_1000	249843.64
bls12_381_msm_g1_1000_optimized	6486.429
bls12_381_msm_g2_10	28072.381
bls12_381_msm_g2_10_optimized	10738.188
bls12_381_msm_g2_1000	696497.443
bls12_381_msm_g2_1000_optimized	9896.667
bls12_381_mul_projective_g1	8.718
bls12_381_mul_projective_g1_optimized	12.136
bls12_381_mul_affine_g1	9.742
bls12_381_mul_affine_g1_optimized	12.065
bls12_381_mul_projective_g2	16.721
bls12_381_mul_projective_g2_optimized	18.218
bls12_381_mul_affine_g2	16.719
bls12_381_mul_affine_g2_optimized	16.41

extrinsic	time (μ s)
bw6_761_pairing	52369.903
bw6_761_pairing_optimized	844.095
bw6_761_msm_g1_10	46821.263
bw6_761_msm_g1_10_optimized	161.278
bw6_761_msm_g1_1000	1315753.364
bw6_761_msm_g1_1000_optimized	13526.839
bw6_761_msm_g2_10	47162.819
bw6_761_msm_g2_10_optimized	161.919
bw6_761_msm_g2_1000	1305178.478
bw6_761_msm_g2_1000_optimized	13633.296
bw6_761_mul_projective_g1	21.793
bw6_761_mul_projective_g1_optimized	21.991
bw6_761_mul_affine_g1	21.879
bw6_761_mul_affine_g1_optimized	21.354
bw6_761_mul_projective_g2	21.825
bw6_761_mul_projective_g2_optimized	21.641
bw6_761_mul_affine_g2	21.835
bw6_761_mul_affine_g2_optimized	21.571
ed_on_bls12_377_msm_10	6204.935

extrinsic	time (μ s)
ed_on_bls12_377_msm_10_optimized	43.235
ed_on_bls12_377_msm_1000	109514.281
ed_on_bls12_377_msm_optimized_1000	2326.741
ed_on_bls12_377_mul_projective	9.901
ed_on_bls12_377_mul_projective_optimized	7.002
ed_on_bls12_377_mul_affine	9.648
ed_on_bls12_377_mul_affine_optimized	8.469
ed_on_bls12_381_msm_sw_10	3474.642
ed_on_bls12_381_msm_sw_10_optimized	36.295
ed_on_bls12_381_msm_sw_1000	93899.066
ed_on_bls12_381_msm_sw_1000_optimized	2465.594
ed_on_bls12_381_mul_projective_sw	6.076
ed_on_bls12_381_msm_te_10	5258.601
ed_on_bls12_381_msm_te_10_optimized	35.205
ed_on_bls12_381_msm_te_1000	5382.254
ed_on_bls12_381_msm_te_1000_optimized	2391.212
ed_on_bls12_381_mul_projective_sw_optimized	6.689
ed_on_bls12_381_mul_affine_sw	6.172
ed_on_bls12_381_mul_affine_sw_optimized	6.476

extrinsic	time (μs)
ed_on_bls12_381_mul_projective_te	9.301
ed_on_bls12_381_mul_projective_te_optimized	7.692
ed_on_bls12_381_mul_affine_te	6.553
ed_on_bls12_381_mul_affine_te_optimized	7.608
do_nothing	3.976