

# Ipop Options: .ipop

See Ipop Documentation: <https://coin-or.github.io/Ipopt/OPTIONS.html>

List of available options

Id	Type	Default	Description
accept_after_max_steps	OT_INT	-1	Accept a trial point after maximal this number of steps. (see IPOPT documentation)
accept_every_trial_step	OT_STRING	no	Always accept the first trial step. (see IPOPT documentation)
acceptable_compl_inf_tol	OT_DOUBLE	0.010	Acceptance threshold for the complementarity conditions. (see IPOPT documentation)
acceptable_constr_viol_tol	OT_DOUBLE	0.010	Acceptance threshold for the constraint violation. (see IPOPT documentation)
acceptable_dual_inf_tol	OT_DOUBLE	1.000e+10	Acceptance threshold for the dual infeasibility. (see IPOPT documentation)
acceptable_iter	OT_INT	15	Number of acceptable iterates before triggering termination. (see IPOPT documentation)
acceptable_obj_change_tol	OT_DOUBLE	1.000e+20	Acceptance stopping criterion based on objective function change. (see IPOPT documentation)
acceptable_tol	OT_DOUBLE	0.000	Acceptable convergence tolerance (relative). (see IPOPT documentation)
adaptive_mu_globalization	OT_STRING	obj-constr-filter	Globalization strategy for the adaptive mu selection mode. (see IPOPT documentation)
adaptive_mu_kkt_norm_type	OT_STRING	2-norm-squared	Norm used for the KKT error in the adaptive mu globalization strategies. (see IPOPT documentation)
adaptive_mu_kkterror_red_fact	OT_DOUBLE	1.000	Sufficient decrease factor for kkt-error globalization strategy. (see IPOPT documentation)
adaptive_mu_kkterror_red_iters	OT_INT	4	Maximum number of iterations requiring sufficient progress. (see IPOPT documentation)
adaptive_mu_monotone_init_factor	OT_DOUBLE	0.800	Determines the initial value of the barrier parameter when switching to the monotone mode. (see IPOPT documentation)
adaptive_mu_restore_previous_iterate	OT_STRING	no	Indicates if the previous iterate should be restored if the monotone mode is entered. (see IPOPT documentation)
adaptive_mu_safeguard_factor	OT_DOUBLE	0	(see IPOPT documentation)
alpha_for_y	OT_STRING	primal	Method to determine the step size for constraint multipliers. (see IPOPT documentation)
alpha_for_y_tol	OT_DOUBLE	10	Tolerance for switching to full equality multiplier steps. (see IPOPT documentation)
alpha_min_frac	OT_DOUBLE	0.050	Safety factor for the minimal step size (before switching to restoration phase). (see IPOPT documentation)
alpha_red_factor	OT_DOUBLE	0.500	Fractional reduction of the trial step size in the backtracking line search. (see IPOPT documentation)
barrier_tol_factor	OT_DOUBLE	10	Factor for mu in barrier stop test. (see IPOPT documentation)
bound_frac	OT_DOUBLE	0.010	Desired minimum relative distance from the initial point to bound. (see IPOPT documentation)
bound_mult_init_method	OT_STRING	constant	Initialization method for bound multipliers (see IPOPT documentation)
bound_mult_init_val	OT_DOUBLE	1	Initial value for the bound multipliers. (see IPOPT documentation)
bound_mult_reset_threshold	OT_DOUBLE	1000	Threshold for resetting bound multipliers after the restoration phase. (see IPOPT documentation)
bound_push	OT_DOUBLE	0.010	Desired minimum absolute distance from the initial point to bound. (see IPOPT documentation)
bound_relax_factor	OT_DOUBLE	0.000	Factor for initial relaxation of the bounds. (see IPOPT documentation)
check_derivatives_for_naninf	OT_STRING	no	Indicates whether it is desired to check for Nan/Inf in derivative matrices (see IPOPT documentation)
chi_cup	OT_DOUBLE	1.500	LIFENG WRITES THIS. (see IPOPT documentation)
chi_hat	OT_DOUBLE	2	LIFENG WRITES THIS. (see IPOPT documentation)
chi_tilde	OT_DOUBLE	5	LIFENG WRITES THIS. (see IPOPT documentation)
compl_inf_tol	OT_DOUBLE	0.000	Desired threshold for the complementarity conditions. (see IPOPT documentation)
con_integer_md	OT_DICT	None	Integer metadata (a dictionary with lists of integers) about constraints to be passed to IPOPT
con_numeric_md	OT_DICT	None	Numeric metadata (a dictionary with lists of reals) about constraints to be passed to IPOPT
con_string_md	OT_DICT	None	String metadata (a dictionary with lists of strings) about constraints to be passed to IPOPT
constr_mult_init_max	OT_DOUBLE	1000	Maximum allowed least-square guess of constraint multipliers. (see IPOPT documentation)
constr_mult_reset_threshold	OT_DOUBLE	0	Threshold for resetting equality and inequality multipliers after restoration phase. (see IPOPT documentation)
constr_viol_tol	OT_DOUBLE	0.000	Desired threshold for the constraint violation. (see IPOPT documentation)
constraint_violation_norm_type	OT_STRING	1-norm	Norm to be used for the constraint violation in the line search. (see IPOPT documentation)
corrector_compl_avg_red_fact	OT_DOUBLE	1	Complementarity tolerance factor for accepting corrector step (unsupported!). (see IPOPT documentation)

corrector_type	OT_STRING	none	The type of corrector steps that should be taken (unsupported!). (see IPOPT documentation)
delta	OT_DOUBLE	1	Multiplier for constraint violation in the switching rule. (see IPOPT documentation)
delta_y_max	OT_DOUBLE	1.000e+12	a parameter used to check if the fast direction can be used as the line search direction (for Chen-Goldfarb line search). (see IPOPT documentation)
dependency_detection_with_rhs	OT_STRING	no	Indicates if the right hand sides of the constraints should be considered during dependency detection (see IPOPT documentation)
dependency_detector	OT_STRING	none	Indicates which linear solver should be used to detect linearly dependent equality constraints. (see IPOPT documentation)
derivative_test	OT_STRING	none	Enable derivative checker (see IPOPT documentation)
derivative_test_first_index	OT_INT	-2	Index of first quantity to be checked by derivative checker (see IPOPT documentation)
derivative_test_perturbation	OT_DOUBLE	0.000	Size of the finite difference perturbation in derivative test. (see IPOPT documentation)
derivative_test_print_all	OT_STRING	no	Indicates whether information for all estimated derivatives should be printed. (see IPOPT documentation)
derivative_test_tol	OT_DOUBLE	0.000	Threshold for indicating wrong derivative. (see IPOPT documentation)
diverging_iterates_tol	OT_DOUBLE	1.000e+20	Threshold for maximal value of primal iterates. (see IPOPT documentation)
dual_inf_tol	OT_DOUBLE	1	Desired threshold for the dual infeasibility. (see IPOPT documentation)
epsilon_c	OT_DOUBLE	0.010	LIFENG WRITES THIS. (see IPOPT documentation)
eta_min	OT_DOUBLE	10	LIFENG WRITES THIS. (see IPOPT documentation)
eta_penalty	OT_DOUBLE	0.000	Relaxation factor in the Armijo condition for the penalty function. (see IPOPT documentation)
eta_phi	OT_DOUBLE	0.000	Relaxation factor in the Armijo condition. (see IPOPT documentation)
evaluate_orig_obj_at_resto_trial	OT_STRING	yes	Determines if the original objective function should be evaluated at restoration phase trial points. (see IPOPT documentation)
expect_infeasible_problem	OT_STRING	no	Enable heuristics to quickly detect an infeasible problem. (see IPOPT documentation)
expect_infeasible_problem_ctol	OT_DOUBLE	0.001	Threshold for disabling expect_infeasible_problem option. (see IPOPT documentation)
expect_infeasible_problem_ytol	OT_DOUBLE	100000000	Multiplier threshold for activating expect_infeasible_problem option. (see IPOPT documentation)
fast_des_fact	OT_DOUBLE	0.100	a parameter used to check if the fast direction can be used as the line search direction (for Chen-Goldfarb line search). (see IPOPT documentation)
fast_step_computation	OT_STRING	no	Indicates if the linear system should be solved quickly. (see IPOPT documentation)
file_print_level	OT_INT	5	Verbosity level for output file. (see IPOPT documentation)
filter_margin_fact	OT_DOUBLE	0.000	Factor determining width of margin for obj-constr- filter adaptive globalization strategy. (see IPOPT documentation)
filter_max_margin	OT_DOUBLE	1	Maximum width of margin in obj-constr- filter adaptive globalization strategy. (see IPOPT documentation)
filter_reset_trigger	OT_INT	5	Number of iterations that trigger the filter reset. (see IPOPT documentation)
findiff_perturbation	OT_DOUBLE	0.000	Size of the finite difference perturbation for derivative approximation. (see IPOPT documentation)
first_hessian_perturbation	OT_DOUBLE	0.000	Size of first x-s perturbation tried. (see IPOPT documentation)
fixed_mu_oracle	OT_STRING	average_compl	Oracle for the barrier parameter when switching to fixed mode. (see IPOPT documentation)
fixed_variable_treatment	OT_STRING	make_parameter	Determines how fixed variables should be handled. (see IPOPT documentation)
gamma_hat	OT_DOUBLE	0.040	LIFENG WRITES THIS. (see IPOPT documentation)
gamma_phi	OT_DOUBLE	0.000	Relaxation factor in the filter margin for the barrier function. (see IPOPT documentation)
gamma_theta	OT_DOUBLE	0.000	Relaxation factor in the filter margin for the constraint violation. (see IPOPT documentation)
gamma_tilde	OT_DOUBLE	4	LIFENG WRITES THIS. (see IPOPT documentation)
hessian_approximation	OT_STRING	exact	Indicates what Hessian information is to be used. (see IPOPT documentation)
hessian_approximation_space	OT_STRING	nonlinear-variables	Indicates in which subspace the Hessian information is to be approximated. (see IPOPT documentation)
hessian_constant	OT_STRING	no	Indicates whether the problem is a quadratic problem (see IPOPT documentation)
honor_original_bounds	OT_STRING	yes	Indicates whether final points should be projected into original bounds. (see IPOPT documentation)
inf_pr_output	OT_STRING	original	Determines what value is printed in the inf_pr output column. (see IPOPT documentation)
jac_c_constant	OT_STRING	no	Indicates whether all equality constraints are linear (see IPOPT documentation)
jac_d_constant	OT_STRING	no	Indicates whether all inequality constraints are linear (see IPOPT documentation)
jacobian_approximation	OT_STRING	exact	Specifies technique to compute constraint Jacobian (see IPOPT documentation)
jacobian_regularization_exponent	OT_DOUBLE	0.250	Exponent for mu in the regularization for rank-deficient constraint Jacobians. (see IPOPT documentation)

jacobian_regularization_value	OT_DOUBLE	0.000	Size of the regularization for rank- deficient constraint Jacobians. (see IPOPT documentation)
kappa_d	OT_DOUBLE	0.000	Weight for linear damping term (to handle one-sided bounds). (see IPOPT documentation)
kappa_sigma	OT_DOUBLE	1.000e+10	Factor limiting the deviation of dual variables from primal estimates. (see IPOPT documentation)
kappa_soc	OT_DOUBLE	0.990	Factor in the sufficient reduction rule for second order correction. (see IPOPT documentation)
kappa_x_dis	OT_DOUBLE	100	a parameter used to check if the fast direction can be used as the line search direction (for Chen-Goldfarb line search). (see IPOPT documentation)
kappa_y_dis	OT_DOUBLE	10000	a parameter used to check if the fast direction can be used as the line search direction (for Chen-Goldfarb line search). (see IPOPT documentation)
least_square_init_duals	OT_STRING	no	Least square initialization of all dual variables (see IPOPT documentation)
least_square_init_primal	OT_STRING	no	Least square initialization of the primal variables (see IPOPT documentation)
limited_memory_aug_solver	OT_STRING	Sherman-morrison	Strategy for solving the augmented system for low- rank Hessian. (see IPOPT documentation)
limited_memory_init_val	OT_DOUBLE	1	Value for B0 in low-rank update. (see IPOPT documentation)
limited_memory_init_val_max	OT_DOUBLE	100000000	Upper bound on value for B0 in low-rank update. (see IPOPT documentation)
limited_memory_init_val_min	OT_DOUBLE	0.000	Lower bound on value for B0 in low-rank update. (see IPOPT documentation)
limited_memory_initialization	OT_STRING	scalar1	Initialization strategy for the limited memory quasi-Newton approximation. (see IPOPT documentation)
limited_memory_max_history	OT_INT	6	Maximum size of the history for the limited quasi-Newton Hessian approximation. (see IPOPT documentation)
limited_memory_max_skipping	OT_INT	2	Threshold for successive iterations where update is skipped. (see IPOPT documentation)
limited_memory_special_for_resto	OT_STRING	no	Determines if the quasi- Newton updates should be special during the restoration phase. (see IPOPT documentation)
limited_memory_update_type	OT_STRING	bfgs	Quasi-Newton update formula for the limited memory approximation. (see IPOPT documentation)
line_search_method	OT_STRING	filter	Globalization method used in backtracking line search (see IPOPT documentation)
linear_scaling_on_demand	OT_STRING	yes	Flag indicating that linear scaling is only done if it seems required. (see IPOPT documentation)
linear_solver	OT_STRING	mumps	Linear solver used for step computations. (see IPOPT documentation)
linear_system_scaling	OT_STRING	none	Method for scaling the linear system. (see IPOPT documentation)
ma27_ignore_singularity	OT_STRING	no	Enables MA27's ability to solve a linear system even if the matrix is singular. (see IPOPT documentation)
ma27_la_init_factor	OT_DOUBLE	5	Real workspace memory for MA27. (see IPOPT documentation)
ma27_liw_init_factor	OT_DOUBLE	5	Integer workspace memory for MA27. (see IPOPT documentation)
ma27_meminc_factor	OT_DOUBLE	2	Increment factor for workspace size for MA27. (see IPOPT documentation)
ma27_pivtol	OT_DOUBLE	0.000	Pivot tolerance for the linear solver MA27. (see IPOPT documentation)
ma27_pivtolmax	OT_DOUBLE	0.000	Maximum pivot tolerance for the linear solver MA27. (see IPOPT documentation)
ma27_skip_inertia_check	OT_STRING	no	Always pretend inertia is correct. (see IPOPT documentation)
ma28_pivtol	OT_DOUBLE	0.010	Pivot tolerance for linear solver MA28. (see IPOPT documentation)
ma57_automatic_scaling	OT_STRING	no	Controls MA57 automatic scaling (see IPOPT documentation)
ma57_block_size	OT_INT	16	Controls block size used by Level 3 BLAS in MA57BD (see IPOPT documentation)
ma57_node_amalgamation	OT_INT	16	Node amalgamation parameter (see IPOPT documentation)
ma57_pivot_order	OT_INT	5	Controls pivot order in MA57 (see IPOPT documentation)
ma57_pivtol	OT_DOUBLE	0.000	Pivot tolerance for the linear solver MA57. (see IPOPT documentation)
ma57_pivtolmax	OT_DOUBLE	0.000	Maximum pivot tolerance for the linear solver MA57. (see IPOPT documentation)
ma57_pre_alloc	OT_DOUBLE	1.050	Safety factor for work space memory allocation for the linear solver MA57. (see IPOPT documentation)
ma57_small_pivot_flag	OT_INT	0	If set to 1, then when small entries defined by CNTL(2) are detected they are removed and the corresponding pivots placed at the end of the factorization. This can be particularly efficient if the matrix is highly rank deficient. (see IPOPT documentation)
ma77_buffer_lpage	OT_INT	4096	Number of scalars per MA77 buffer page (see IPOPT documentation)
ma77_buffer_npage	OT_INT	1600	Number of pages that make up MA77 buffer (see IPOPT documentation)
ma77_file_size	OT_INT	2097152	Target size of each temporary file for MA77, scalars per type (see IPOPT documentation)
ma77_maxstore	OT_INT	0	Maximum storage size for MA77 in-core mode (see IPOPT documentation)

ma77_nemin	OT_INT	8	Node Amalgamation parameter (see IPOPT documentation)
ma77_order	OT_STRING	amd	Controls type of ordering used by HSL_MA77 (see IPOPT documentation)
ma77_print_level	OT_INT	-1	Debug printing level for the linear solver MA77 (see IPOPT documentation)
ma77_small	OT_DOUBLE	0.000	Zero Pivot Threshold (see IPOPT documentation)
ma77_static	OT_DOUBLE	0	Static Pivoting Threshold (see IPOPT documentation)
ma77_u	OT_DOUBLE	0.000	Pivoting Threshold (see IPOPT documentation)
ma77_umax	OT_DOUBLE	0.000	Maximum Pivoting Threshold (see IPOPT documentation)
ma86_nemin	OT_INT	32	Node Amalgamation parameter (see IPOPT documentation)
ma86_order	OT_STRING	amd	Controls type of ordering used by HSL_MA86 (see IPOPT documentation)
ma86_print_level	OT_INT	-1	Debug printing level for the linear solver MA86 (see IPOPT documentation)
ma86_scaling	OT_STRING	mc64	Controls scaling of matrix (see IPOPT documentation)
ma86_small	OT_DOUBLE	0.000	Zero Pivot Threshold (see IPOPT documentation)
ma86_static	OT_DOUBLE	0	Static Pivoting Threshold (see IPOPT documentation)
ma86_u	OT_DOUBLE	0.000	Pivoting Threshold (see IPOPT documentation)
ma86_umax	OT_DOUBLE	0.000	Maximum Pivoting Threshold (see IPOPT documentation)
ma97_nemin	OT_INT	8	Node Amalgamation parameter (see IPOPT documentation)
ma97_order	OT_STRING	auto	Controls type of ordering used by HSL_MA97 (see IPOPT documentation)
ma97_print_level	OT_INT	0	Debug printing level for the linear solver MA97 (see IPOPT documentation)
ma97_scaling	OT_STRING	dynamic	Specifies strategy for scaling in HSL_MA97 linear solver (see IPOPT documentation)
ma97_scaling1	OT_STRING	mc64	First scaling. (see IPOPT documentation)
ma97_scaling2	OT_STRING	mc64	Second scaling. (see IPOPT documentation)
ma97_scaling3	OT_STRING	mc64	Third scaling. (see IPOPT documentation)
ma97_small	OT_DOUBLE	0.000	Zero Pivot Threshold (see IPOPT documentation)
ma97_solve_blas3	OT_STRING	no	Controls if blas2 or blas3 routines are used for solve (see IPOPT documentation)
ma97_switch1	OT_STRING	od_hd_reuse	First switch, determine when ma97_scaling1 is enabled. (see IPOPT documentation)
ma97_switch2	OT_STRING	never	Second switch, determine when ma97_scaling2 is enabled. (see IPOPT documentation)
ma97_switch3	OT_STRING	never	Third switch, determine when ma97_scaling3 is enabled. (see IPOPT documentation)
ma97_u	OT_DOUBLE	0.000	Pivoting Threshold (see IPOPT documentation)
ma97_umax	OT_DOUBLE	0.000	Maximum Pivoting Threshold (see IPOPT documentation)
magic_steps	OT_STRING	no	Enables magic steps. (see IPOPT documentation)
max_cpu_time	OT_DOUBLE	1000000	Maximum number of CPU seconds. (see IPOPT documentation)
max_filter_resets	OT_INT	5	Maximal allowed number of filter resets (see IPOPT documentation)
max_hessian_perturbation	OT_DOUBLE	1.000e+20	Maximum value of regularization parameter for handling negative curvature. (see IPOPT documentation)
max_iter	OT_INT	3000	Maximum number of iterations. (see IPOPT documentation)
max_refinement_steps	OT_INT	10	Maximum number of iterative refinement steps per linear system solve. (see IPOPT documentation)
max_resto_iter	OT_INT	3000000	Maximum number of successive iterations in restoration phase. (see IPOPT documentation)
max_soc	OT_INT	4	Maximum number of second order correction trial steps at each iteration. (see IPOPT documentation)
max_soft_resto_iters	OT_INT	10	Maximum number of iterations performed successively in soft restoration phase. (see IPOPT documentation)
mehrotra_algorithm	OT_STRING	no	Indicates if we want to do Mehrotra's algorithm. (see IPOPT documentation)
min_alpha_primal	OT_DOUBLE	0.000	LIFENG WRITES THIS. (see IPOPT documentation)
min_hessian_perturbation	OT_DOUBLE	0.000	Smallest perturbation of the Hessian block. (see IPOPT documentation)
min_refinement_steps	OT_INT	1	Minimum number of iterative refinement steps per linear system solve. (see IPOPT documentation)
mu_allow_fast_monotone_decrease	OT_STRING	yes	Allow skipping of barrier problem if barrier test is already met. (see IPOPT documentation)
mu_init	OT_DOUBLE	0.100	Initial value for the barrier parameter. (see IPOPT documentation)
mu_linear_decrease_factor	OT_DOUBLE	0.200	Determines linear decrease rate of barrier parameter. (see IPOPT documentation)
mu_max	OT_DOUBLE	100000	Maximum value for barrier parameter. (see IPOPT documentation)
mu_max_fact	OT_DOUBLE	1000	Factor for initialization of maximum value for barrier parameter. (see IPOPT documentation)
mu_min	OT_DOUBLE	0.000	Minimum value for barrier parameter. (see IPOPT documentation)
mu_oracle	OT_STRING	quality-function	Oracle for a new barrier parameter in the adaptive strategy. (see IPOPT documentation)
mu_strategy	OT_STRING	monotone	Update strategy for barrier parameter. (see IPOPT documentation)
mu_superlinear_decrease_power	OT_DOUBLE	1.500	Determines superlinear decrease rate of barrier parameter. (see IPOPT documentation)

mu_target	OT_DOUBLE	0	Desired value of complementary ity. (see IPOPT documentation)
mult_diverg_feasibility_tol	OT_DOUBLE	0.000	tolerance for deciding if the multipliers are diverging (see IPOPT documentation)
mult_diverg_y_tol	OT_DOUBLE	100000000	tolerance for deciding if the multipliers are diverging (see IPOPT documentation)
mumps_dep_tol	OT_DOUBLE	0	Pivot threshold for detection of linearly dependent constraints in MUMPS. (see IPOPT documentation)
mumps_mem_percent	OT_INT	1000	Percentage increase in the estimated working space for MUMPS. (see IPOPT documentation)
mumps_permuting_scaling	OT_INT	7	Controls permuting and scaling in MUMPS (see IPOPT documentation)
mumps_pivot_order	OT_INT	7	Controls pivot order in MUMPS (see IPOPT documentation)
mumps_pivtol	OT_DOUBLE	0.000	Pivot tolerance for the linear solver MUMPS. (see IPOPT documentation)
mumps_pivtolmax	OT_DOUBLE	0.100	Maximum pivot tolerance for the linear solver MUMPS. (see IPOPT documentation)
mumps_scaling	OT_INT	77	Controls scaling in MUMPS (see IPOPT documentation)
neg_curv_test_tol	OT_DOUBLE	0	Tolerance for heuristic to ignore wrong inertia. (see IPOPT documentation)
never_use_fact_cgpen_direction	OT_STRING	no	Toggle to switch off the fast Chen- Goldfarb direction (see IPOPT documentation)
never_use_piecewise_penalty_ls	OT_STRING	no	Toggle to switch off the piecewise penalty method (see IPOPT documentation)
nlp_lower_bound_inf	OT_DOUBLE	-1.000e+19	any bound less or equal this value will be considered -inf (i.e. not lower bounded). (see IPOPT documentation)
nlp_scaling_constr_target_gradient	OT_DOUBLE	0	Target value for constraint function gradient size. (see IPOPT documentation)
nlp_scaling_max_gradient	OT_DOUBLE	100	Maximum gradient after NLP scaling. (see IPOPT documentation)
nlp_scaling_method	OT_STRING	gradient-based	Select the technique used for scaling the NLP. (see IPOPT documentation)
nlp_scaling_min_value	OT_DOUBLE	0.000	Minimum value of gradient- based scaling values. (see IPOPT documentation)
nlp_scaling_obj_target_gradient	OT_DOUBLE	0	Target value for objective function gradient size. (see IPOPT documentation)
nlp_upper_bound_inf	OT_DOUBLE	1.000e+19	any bound greater or this value will be considered +inf (i.e. not upper bounded). (see IPOPT documentation)
nu_inc	OT_DOUBLE	0.000	Increment of the penalty parameter. (see IPOPT documentation)
nu_init	OT_DOUBLE	0.000	Initial value of the penalty parameter. (see IPOPT documentation)
num_linear_variables	OT_INT	0	Number of linear variables (see IPOPT documentation)
obj_max_inc	OT_DOUBLE	5	Determines the upper bound on the acceptable increase of barrier objective function. (see IPOPT documentation)
obj_scaling_factor	OT_DOUBLE	1	Scaling factor for the objective function. (see IPOPT documentation)
option_file_name	OT_STRING	ipopt.opt	File name of options file. (see IPOPT documentation)
output_file	OT_STRING		File name of desired output file (leave unset for no file output). (see IPOPT documentation)
pardiso_iter_coarse_size	OT_INT	5000	Maximum Size of Coarse Grid Matrix (see IPOPT documentation)
pardiso_iter_dropping_factor	OT_DOUBLE	0.500	dropping value for incomplete factor (see IPOPT documentation)
pardiso_iter_dropping_schur	OT_DOUBLE	0.100	dropping value for sparsify schur complement factor (see IPOPT documentation)
pardiso_iter_inverse_norm_factor	OT_DOUBLE	5000000	(see IPOPT documentation)
pardiso_iter_max_levels	OT_INT	10	Maximum Size of Grid Levels (see IPOPT documentation)
pardiso_iter_max_row_fill	OT_INT	10000000	max fill for each row (see IPOPT documentation)
pardiso_iter_relative_tol	OT_DOUBLE	0.000	Relative Residual Convergence (see IPOPT documentation)
pardiso_iterative	OT_STRING	no	Switch on iterative solver in Pardiso library (see IPOPT documentation)
pardiso_matching_strategy	OT_STRING	complete+2x2	Matching strategy to be used by Pardiso (see IPOPT documentation)
pardiso_max_droptol_corrections	OT_INT	4	Maximal number of decreases of drop tolerance during one solve. (see IPOPT documentation)
pardiso_max_iter	OT_INT	500	Maximum number of Krylov- Subspace Iteration (see IPOPT documentation)
pardiso_max_iterative_refinement_steps	OT_INT	0	Limit on number of iterative refinement steps. (see IPOPT documentation)
pardiso_msglvl	OT_INT	0	Pardiso message level (see IPOPT documentation)
pardiso_order	OT_STRING	five	Controls the fill-in reduction ordering algorithm for the input matrix. (see IPOPT documentation)
pardiso_redo_symbolic_fact_only_if_inertia_wrong	OT_STRING	no	Toggle for handling case when elements were perturbed by Pardiso. (see IPOPT documentation)
pardiso_repeated_perturbation_means_singular	OT_STRING	no	Interpretation of perturbed elements. (see IPOPT documentation)
pardiso_skip_inertia_check	OT_STRING	no	Always pretend inertia is correct. (see IPOPT documentation)
pass_nonlinear_variables	OT_BOOL	False	n/a
pen_des_fact	OT_DOUBLE	0.200	a parameter used in penalty parameter computation (for Chen- Goldfarb line search). (see IPOPT documentation)
pen_init_fac	OT_DOUBLE	50	a parameter used to choose initial penalty parameterswhen the regularized Newton method is used. (see IPOPT documentation)

pen_theta_max_fact	OT_DOUBLE	10000	Determines upper bound for constraint violation in the filter. (see IPOPT documentation)
penalty_init_max	OT_DOUBLE	100000	Maximal value for the intial penalty parameter (for Chen-Goldfarb line search). (see IPOPT documentation)
penalty_init_min	OT_DOUBLE	1	Minimal value for the intial penalty parameter for line search(for Chen-Goldfarb line search). (see IPOPT documentation)
penalty_max	OT_DOUBLE	1.000e+30	Maximal value for the penalty parameter (for Chen-Goldfarb line search). (see IPOPT documentation)
penalty_update_compl_tol	OT_DOUBLE	10	LIFENG WRITES THIS. (see IPOPT documentation)
penalty_update_infeasibility_tol	OT_DOUBLE	0.000	Threshold for infeasibility in penalty parameter update test. (see IPOPT documentation)
perturb_always_cd	OT_STRING	no	Active permanent perturbation of constraint linearization. (see IPOPT documentation)
perturb_dec_fact	OT_DOUBLE	0.333	Decrease factor for x-s perturbation. (see IPOPT documentation)
perturb_inc_fact	OT_DOUBLE	8	Increase factor for x-s perturbation. (see IPOPT documentation)
perturb_inc_fact_first	OT_DOUBLE	100	Increase factor for x-s perturbation for very first perturbation. (see IPOPT documentation)
piecisewisepenalty_gamma_infeasi	OT_DOUBLE	0.000	LIFENG WRITES THIS. (see IPOPT documentation)
piecisewisepenalty_gamma_obj	OT_DOUBLE	0.000	LIFENG WRITES THIS. (see IPOPT documentation)
point_perturbation_radius	OT_DOUBLE	10	Maximal perturbation of an evaluation point. (see IPOPT documentation)
print_frequency_iter	OT_INT	1	Determines at which iteration frequency the summarizing iteration output line should be printed. (see IPOPT documentation)
print_frequency_time	OT_DOUBLE	0	Determines at which time frequency the summarizing iteration output line should be printed. (see IPOPT documentation)
print_info_string	OT_STRING	no	Enables printing of additional info string at end of iteration output. (see IPOPT documentation)
print_level	OT_INT	5	Output verbosity level. (see IPOPT documentation)
print_options_documentation	OT_STRING	no	Switch to print all algorithmic options. (see IPOPT documentation)
print_options_latex_mode	OT_STRING	no	Undocumented (see IPOPT documentation)
print_time	OT_BOOL	True	print information about execution time
print_timing_statistics	OT_STRING	no	Switch to print timing statistics. (see IPOPT documentation)
print_user_options	OT_STRING	no	Print all options set by the user. (see IPOPT documentation)
quality_function_balancing_term	OT_STRING	none	The balancing term included in the quality function for centrality. (see IPOPT documentation)
quality_function_centrality	OT_STRING	none	The penalty term for centrality that is included in quality function. (see IPOPT documentation)
quality_function_max_section_steps	OT_INT	8	Maximum number of search steps during direct search procedure determining the optimal centering parameter. (see IPOPT documentation)
quality_function_norm_type	OT_STRING	2-norm-squared	Norm used for components of the quality function. (see IPOPT documentation)
quality_function_section_qf_tol	OT_DOUBLE	0	Tolerance for the golden section search procedure determining the optimal centering parameter (in the function value space). (see IPOPT documentation)
quality_function_section_sigma_tol	OT_DOUBLE	0.010	Tolerance for the section search procedure determining the optimal centering parameter (in sigma space). (see IPOPT documentation)
recalc_y	OT_STRING	no	Tells the algorithm to recalculate the equality and inequality multipliers as least square estimates. (see IPOPT documentation)
recalc_y_feas_tol	OT_DOUBLE	0.000	Feasibility threshold for recomputation of multipliers. (see IPOPT documentation)
replace_bounds	OT_STRING	no	Indicates if all variable bounds should be replaced by inequality constraints (see IPOPT documentation)
required_infeasibility_reduction	OT_DOUBLE	0.900	Required reduction of infeasibility before leaving restoration phase. (see IPOPT documentation)
residual_improvement_factor	OT_DOUBLE	1.000	Minimal required reduction of residual test ratio in iterative refinement. (see IPOPT documentation)
residual_ratio_max	OT_DOUBLE	0.000	Iterative refinement tolerance (see IPOPT documentation)
residual_ratio_singular	OT_DOUBLE	0.000	Threshold for declaring linear system singular after failed iterative refinement. (see IPOPT documentation)
resto_failure_feasibility_threshold	OT_DOUBLE	0	Threshold for primal infeasibility to declare failure of restoration phase. (see IPOPT documentation)
resto_penalty_parameter	OT_DOUBLE	1000	Penalty parameter in the restoration phase objective function. (see IPOPT documentation)
resto_proximity_weight	OT_DOUBLE	1	Weighting factor for the proximity term in restoration phase objective. (see IPOPT documentation)
rho	OT_DOUBLE	0.100	Value in penalty parameter update formula. (see IPOPT documentation)
s_max	OT_DOUBLE	100	Scaling threshold for the NLP error. (see IPOPT documentation)
s_phi	OT_DOUBLE	2.300	Exponent for linear barrier function model in the switching rule. (see IPOPT documentation)
s_theta	OT_DOUBLE	1.100	Exponent for current constraint violation in the switching rule. (see IPOPT documentation)
sb	OT_STRING	no	(see IPOPT documentation)
sigma_max	OT_DOUBLE	100	Maximum value of the centering parameter. (see IPOPT documentation)

sigma_min	OT_DOUBLE	0.000	Minimum value of the centering parameter. (see IPOPT documentation)
skip_corr_if_neg_curv	OT_STRING	yes	Skip the corrector step in negative curvature iteration (unsupported!). (see IPOPT documentation)
skip_corr_in_monotone_mode	OT_STRING	yes	Skip the corrector step during monotone barrier parameter mode (unsupported!). (see IPOPT documentation)
skip_finalize_solution_call	OT_STRING	no	Indicates if call to NLP::FinalizeSolution after optimization should be suppressed (see IPOPT documentation)
slack_bound_frac	OT_DOUBLE	0.010	Desired minimum relative distance from the initial slack to bound. (see IPOPT documentation)
slack_bound_push	OT_DOUBLE	0.010	Desired minimum absolute distance from the initial slack to bound. (see IPOPT documentation)
slack_move	OT_DOUBLE	0.000	Correction size for very small slacks. (see IPOPT documentation)
soft_resto_pderror_reduction_factor	OT_DOUBLE	1.000	Required reduction in primal-dual error in the soft restoration phase. (see IPOPT documentation)
start_with_resto	OT_STRING	no	Tells algorithm to switch to restoration phase in first iteration. (see IPOPT documentation)
suppress_all_output	OT_STRING	no	Undocumented (see IPOPT documentation)
tau_min	OT_DOUBLE	0.990	Lower bound on fraction-to-the-boundary parameter tau. (see IPOPT documentation)
theta_max_fact	OT_DOUBLE	10000	Determines upper bound for constraint violation in the filter. (see IPOPT documentation)
theta_min	OT_DOUBLE	0.000	LIFENG WRITES THIS. (see IPOPT documentation)
theta_min_fact	OT_DOUBLE	0.000	Determines constraint violation threshold in the switching rule. (see IPOPT documentation)
tiny_step_tol	OT_DOUBLE	0.000	Tolerance for detecting numerically insignificant steps. (see IPOPT documentation)
tiny_step_y_tol	OT_DOUBLE	0.010	Tolerance for quitting because of numerically insignificant steps. (see IPOPT documentation)
tol	OT_DOUBLE	0.000	Desired convergence tolerance (relative). (see IPOPT documentation)
var_integer_md	OT_DICT	None	Integer metadata (a dictionary with lists of integers) about variables to be passed to IPOPT
var_numeric_md	OT_DICT	None	Numeric metadata (a dictionary with lists of reals) about variables to be passed to IPOPT
var_string_md	OT_DICT	None	String metadata (a dictionary with lists of strings) about variables to be passed to IPOPT
vartheta	OT_DOUBLE	0.500	a parameter used to check if the fast direction can be used as the line search direction (for Chen-Goldfarb line search). (see IPOPT documentation)
warm_start_bound_frac	OT_DOUBLE	0.001	same as bound_frac for the regular initializer. (see IPOPT documentation)
warm_start_bound_push	OT_DOUBLE	0.001	same as bound_push for the regular initializer. (see IPOPT documentation)
warm_start_entire_iterate	OT_STRING	no	Tells algorithm whether to use the GetWarmStarIterate method in the NLP. (see IPOPT documentation)
warm_start_init_point	OT_STRING	no	Warm-start for initial point (see IPOPT documentation)
warm_start_mult_bound_push	OT_DOUBLE	0.001	same as mult_bound_push for the regular initializer. (see IPOPT documentation)
warm_start_mult_init_max	OT_DOUBLE	1000000	Maximum initial value for the equality multipliers. (see IPOPT documentation)
warm_start_same_structure	OT_STRING	no	Indicates whether a problem with a structure identical to the previous one is to be solved. (see IPOPT documentation)
warm_start_slack_bound_frac	OT_DOUBLE	0.001	same as slack_bound_frac for the regular initializer. (see IPOPT documentation)
warm_start_slack_bound_push	OT_DOUBLE	0.001	same as slack_bound_push for the regular initializer. (see IPOPT documentation)
warm_start_target_mu	OT_DOUBLE	0	Unsupported! (see IPOPT documentation)
watchdog_shortened_iter_trigger	OT_INT	10	Number of shortened iterations that trigger the watchdog. (see IPOPT documentation)
watchdog_trial_iter_max	OT_INT	3	Maximum number of watchdog iterations. (see IPOPT documentation)
wsmp_iterative	OT_STRING	no	Switches to iterative solver in WSMP. (see IPOPT documentation)