ScaLAPACK Quick Reference Guide to the Driver Routines

Release 1.5

Simple Drivers

Simple Driver Routines for Linear Equations

Matrix Type	Routine
General	`PSGESV( N, NRHS, A, IA, JA, IPIV, B, IB, JB, INFO )`
	`PCGESV( N, NRHS, A, IA, JA, IPIV, B, IB, JB, INFO )`
General Band (no pivoting)	`PSDBSV( N, BWL, BWU, NRHS, A, JA, DESCA, B, IB, DESCB, WORK,LWORK, INFO )`
	`PCDBSV( N, BWL, BWU, NRHS, A, JA, DESCA, B, IB, DESCB, WORK, LWORK, INFO )`
General Band (partial pivoting)	`PSGBSV( N, BWL, BWU, NRHS, A, JA, DESCA, IPIV, B, IB, DESCB, WORK, LWORK, INFO )`
	`PCGBSV( N, BWL, BWU, NRHS, A, JA, DESCA, IPIV, B, IB, DESCB, WORK, LWORK, INFO )`
General Tridiagonal (no pivoting)	`PSDTSV( N, NRHS, DL, D, DU, JA, DESCA, B, IB, DESCB, WORK, LWORK, INFO )`
	`PCDTSV( N, NRHS, DL, D, DU, JA, DESCA, B, IB, DESCB, WORK, LWORK, INFO )`
Symmetric/Hermitian Positive Definite	`PSPOSV( UPLO, N, NRHS, A, IA, JA, DESCA, B, IB, JB, DESCB, INFO )`
	`PCPOSV( UPLO, N, NRHS, A, IA, JA, DESCA, B, IB, JB, DESCB, INFO )`
Symmetric/Hermitian Positive Definite Band	`PSPBSV( UPLO, N, BW, NRHS, A, JA, DESCA, B, IB, DESCB, WORK, LWORK, INFO )`
	`PCPBSV( UPLO, N, BW, NRHS, A, JA, DESCA, B, IB, DESCB, WORK, LWORK, INFO )`
Symmetric/Hermitian Positive Definite Tridiagonal	`PSPTSV( N, NRHS, D, E, JA, DESCA, B, IB, DESCB, WORK, LWORK, INFO )`
	`PCPTSV( N, NRHS, D, E, JA, DESCA, B, IB, DESCB, WORK, LWORK, INFO )`

Simple Driver Routines for Standard and Generalized Linear Least Squares Problems

Problem Type	Routine
Solve Using Orthogonal Factor, Assuming Full Rank	`PSGELS( TRANS, M, N, NRHS, A, IA, JA, DESCA, B, IB, JB, DESCB, WORK, LWORK, INFO )`
	`PCGELS( TRANS, M, N, NRHS, A, IA, JA, DESCA, B, IB, JB, DESCB, WORK, LWORK, INFO )`

Simple Driver Routines for Standard Eigenvalue and Singular Value Problems

Matrix/Problem Type	Routine
Symmetric/Hermitian Eigenvalues/vectors	`PSSYEV( JOBZ, UPLO, N, A, IA, JA, DESCA, W, Z, IZ, JZ, DESCZ, WORK, LWORK, INFO )`
General Singular Values/Vectors	`PSGESVD( JOBU, JOBVT, M, N, A, IA, JA, DESCA, S, U, IU, JU, DESCU, VT, IVT, JVT, DESCVT, WORK, LWORK, INFO )`

Expert Drivers

Expert Driver Routines for Linear Equations

Matrix Type	Routine
General	PSGESVX(FACT, TRANS, N, NRHS, A, IA, JA, DESCA, AF, IAF, JAF, DESCAF, IPIV, EQUED, R, C, B, IB, JB, DESCB, X, IX, JX, DESCX, RCOND, FERR, BERR, WORK, LWORK, IWORK, LIWORK, INFO)
	PCGESVX(FACT, TRANS, N, NRHS, A, IA, JA, DESCA, AF, IAF, JAF, DESCAF, IPIV, EQUED, R, C, B, IB, JB, DESCB, X, IX, JX, DESCX, RCOND, FERR, BERR, WORK, LWORK, RWORK, LRWORK, INFO)
Symmetric/Hermitian Positive Definite	PSPOSVX(FACT, UPLO, N, NRHS, A, IA, JA, DESCA, AF, IAF, JAF, DESCAF, EQUED, S, B, IB, JB, DESCB, X, IX, JX, DESCX, RCOND, FERR, BERR, WORK, LWORK, IWORK, LIWORK, INFO)
	PCPOSVX(FACT, UPLO, N, NRHS, A, IA, JA, DESCA, AF, IAF, JAF, DESCAF, EQUED, S, B, IB, JB, DESCB, X, IX, JX, DESCX, RCOND, FERR, BERR, WORK, LWORK, RWORK, LRWORK, INFO)

Expert Driver Routines for Standard and Generalized Symmetric Eigenvalue Problems

Matrix/Problem Type	Routine
Symmetric Eigenvalues/vectors	PSSYEVX(JOBZ, RANGE, UPLO, N, A, IA, JA, DESCA, VL, VU, IL, IU, ABSTOL, M, NZ, W, ORFAC, Z, IZ, JZ, DESCZ, WORK, LWORK, IWORK, LIWORK, IFAIL, ICLUSTR, GAP, INFO)
Hermitian Eigenvalues/vectors	PCHEEVX(JOBZ, RANGE, UPLO, N, A, IA, JA, DESCA, VL, VU, IL, IU, ABSTOL, M, NZ, W, ORFAC, Z, IZ, JZ, DESCZ, WORK, LWORK, RWORK, LRWORK, IWORK, LIWORK, IFAIL, ICLUSTR, GAP, INFO)
Symmetric Eigenvalues/vectors	PSSYGVX(IBTYPE, JOBZ, RANGE, UPLO, N, A, IA, JA, DESCA, B, IB, JB, DESCB, VL, VU, IL, IU, ABSTOL, M, NZ, W, ORFAC, Z, IZ, JZ, DESCZ, WORK, LWORK, IWORK, LIWORK, IFAIL, ICLUSTR, GAP, INFO)
Hermitian Eigenvalues/vectors	PCHEGVX(IBTYPE, JOBZ, RANGE, UPLO, N, A, IA, JA, DESCA, B, IB, JB, DESCB, VL, VU, IL, IU, ABSTOL, M, NZ, W, ORFAC, Z, IZ, JZ, DESCZ, WORK, LWORK, RWORK, LRWORK, IWORK, LIWORK, IFAIL, ICLUSTR, GAP, INFO)

Meaning of prefixes

Routines beginning with "PS" are available in:

PS - REAL
PD - DOUBLE PRECISION

Routines beginning with "PC" are available in:

PC - COMPLEX
PZ - COMPLEX*16

Note: COMPLEX*16 may not be supported by all machines