ATLAS ANSI/ISO C LAPACK API REFERENCE

ROUTINE	**(ARGUMENTS)**	**DESCRIPTION**	**PREFIXES**
int clapack_◇gesv	(const enum CBLAS_ORDER Order, const int N, const int NRHS, TYPE *A, const int lda, int *ipiv, TYPE *B, const int ldb)	using $AP = LU$, $B \leftarrow A^{-1}B$, $A \leftarrow LU$, $ipiv \leftarrow P$ (U is unit diagonal, P pivots columns)	S, D, C, Z
int clapack_◇getrf	(const enum CBLAS_ORDER Order, const int M, const int N, TYPE *A, const int lda, int *ipiv)	using $AP = LU$, $A \leftarrow LU$, $ipiv \leftarrow P$ (U is unit diagonal, P pivots columns)	S, D, C, Z
int clapack_◇getrs	(const enum CBLAS_ORDER Order, const enum CBLAS_TRANSPOSE Trans, const int N, const int NRHS, const TYPE *A, const int lda, const int *ipiv, TYPE *B, const int ldb)	$B \leftarrow op(A)^{-1}B$, assuming $A = LU$, $ipiv = P$, $op(X) = X, X^T, X^H$	S, D, C, Z
int clapack_◇getri	(const enum CBLAS_ORDER Order, const int N, TYPE *A, const int lda, const int *ipiv)	$A \leftarrow A^{-1}$, assuming on entry $A = LU$, $ipiv = P$	S, D, C, Z
int clapack_◇posv	(const enum CBLAS_ORDER Order, const enum CBLAS_UPLO Uplo, const int N, const int NRHS, TYPE *A, const int lda, TYPE *B, const int ldb)	$B \leftarrow A^{-1}B$, using $A \leftarrow U^TU$ or $A \leftarrow LL^T$ or $A \leftarrow U^HU$ or $A \leftarrow LL^H$	S, D, C, Z
int clapack_◇potrf	(const enum CBLAS_ORDER Order, const enum CBLAS_UPLO Uplo, const int N, TYPE *A, const int lda)	$A \leftarrow U^TU$ or $A \leftarrow LL^T$ or $A \leftarrow U^HU$ or $A \leftarrow LL^H$	S, D, C, Z
int clapack_◇potrs	(const enum CBLAS_ORDER Order, const enum CBLAS_UPLO Uplo, const int N, const int NRHS, const TYPE *A, const int lda, TYPE *B, const int ldb)	$B \leftarrow op(A)^{-1}B$, assuming $A = U^TU$ or $A = LL^T$ or $A = U^HU$ or $A = LL^H$	S, D, C, Z
int clapack_◇potri	(const enum CBLAS_ORDER Order, const enum ATLAS_UPLO Uplo, const int N, TYPE *A, const int lda)	$A \leftarrow A^{-1}$, assuming on entry $A = U^TU$ or $A = LL^T$ or $A = U^HU$ or $A = LL^H$	S, D, C, Z
int clapack_◇lauum	(const enum ATLAS_ORDER Order, const enum ATLAS_UPLO Uplo, const int N, TYPE *A, const int lda)	$A \leftarrow UU^H$ or $A \leftarrow L^HL$	S, D, C, Z
int clapack_◇trtri	(const enum ATLAS_ORDER Order, const enum ATLAS_UPLO Uplo, const enum ATLAS_DIAG Diag, const int N, TYPE *A, const int lda)	$A \leftarrow A^{-1}$, given A is an Upper or Lower triangular matrix	S, D, C, Z

NOTES:

- C interface DESCRIPTIONs assume `Order == CblasRowMajor`. For column-major descriptions, consult the Fortran77 descriptions.
- All C functions return LAPACK's `INFO` parameter
- C Calling routines should include the BLAS header file, `cblas.h`.
- Cases seperated by *or* above depend on user input or data type.
- More information available at `http://math-atlas.sourceforge.net/`.

PREFIX RELATED DEFINITIONS :

◇is	Data operated	TYPE	UTYPE	SCALAR
s	single precision real	float	float	const float
d	double precision real	double	double	const double
c	single precision complex	void	float	const void*
z	double precision complex	void	double	const void*

ATLAS FORTRAN77 LAPACK API REFERENCE

SUBROUTINE	(ARGUMENTS)	DESCRIPTION	PREFIXES
◇GESV	(N, NRHS, A, LDA, IPIV, B, LDB, INFO)	using $PA = LU$, $B \leftarrow A^{-1}B$, $A \leftarrow LU$, $IPIV \leftarrow P$ (L is unit diagonal, P pivots rows)	S, D, C, Z
◇GETRF	(M, N, A, LDA, IPIV, INFO)	using $PA = LU$, $A \leftarrow LU$, $ipiv \leftarrow P$ (L is unit diagonal, P pivots rows)	S, D, C, Z
◇GETRS	(TRANS, N, NRHS, A, LDA, IPIV, B, LDB, INFO)	$B \leftarrow op(A)^{-1}B$, assuming $A = LU$, $ipiv = P$, $op(X) = X, X^T, X^H$	S, D, C, Z
◇GETRI	(N, A, LDA, IPIV, WORK, LWORK, INFO)	$A \leftarrow A^{-1}$, assuming $A = LU$, $ipiv = P$	S, D, C, Z
◇POSV	(UPLO, N, NRHS, A, LDA, B, LDB, INFO)	$B \leftarrow A^{-1}B$, using $A \leftarrow U^TU$ or $A \leftarrow LL^T$ or $A \leftarrow U^HU$ or $A \leftarrow LL^H$	S, D, C, Z
◇POTRF	(UPLO, N, A, LDA, INFO)	$A \leftarrow U^TU$ or $A \leftarrow LL^T$ or $A \leftarrow U^HU$ or $A \leftarrow LL^H$	S, D, C, Z
◇POTRS	(UPLO, N, NRHS, A, LDA, B, LDB, INFO)	$B \leftarrow op(A)^{-1}B$, assuming $A = U^TU$ or $A = LL^T$ or $A = U^HU$ or $A = LL^H$	S, D, C, Z
◇POTRI	(UPLO, N, A, LDA, INFO)	$B \leftarrow op(A)^{-1}B$, assuming $A = U^TU$ or $A = LL^T$ or $A = U^HU$ or $A = LL^H$	S, D, C, Z
◇LAUUM	(UPLO, N, A, LDA, INFO)	$A \leftarrow UU^H$ or $A \leftarrow L^HL$	S, D, C, Z
◇TRTRI	(UPLO, DIAG, N, A, LDA, INFO)	$A \leftarrow A^{-1}$, given A is an Upper or Lower triangular matrix	S, D, C, Z