

Annex B

Legacy BLAS

B.1 Introduction

This chapter addresses additional language findings for the original Level 1, 2, and 3 BLAS. The Level 1, 2, and 3 BLAS will hereafter be referred to as the Legacy BLAS.

B.2 C interface to the Legacy BLAS

This section gives a detailed discussion of the proposed C interface to the legacy BLAS. Every mention of “BLAS” in this chapter should be taken to

B.2.2 Indices and I_

In practice, programmers' methods of handling complex types in C vary. Som

array of pointers as shown in the preceding example in order to use this kind of interface. At any rate, a library accepting pointers to pointers cannot be supported on top of the Fortran 77 BLAS, while one supporting simple pointers can.

If the programmer is utilizing the pointer to pointer style of array indexing, it is still possible to use this library providing that the user ensures that the operand matrix is contiguous, and that the rows are constantly strided. If this is the case, the user may pass the operand matrix to the library in precisely the same way as with a 2D C array:

```
cblas_rout(... &A[i][j] ...);.
```

```
pb pb)pb)pb)
```


Level 3 BLAS

GEMM

C call `cblas`

SYMM/HEMM

C call `cblas_chemm(CblasRowMajor, CblasLeft, CblasUpper, m, n, α , A, lda, B, ldb, β , C, ldc)`
 C op $C \leftarrow \alpha AB + \beta C$
 F77 op $C^T \leftarrow \alpha B^T A^T + \beta C^T$
 F77 call `CHEMM('R', 'L', n, m, α , A, lda, B, ldb, β , C, ldc)`

C call `cblas_chemm(CblasRowMajor, CblasRight, CblasUpper, m, n, α , A, lda, B, ldb, β , C, ldc)`
 C op $C \leftarrow \alpha BA + \beta C$
 F77 op $C^T \leftarrow \alpha A^T B^T + \beta C^T$
 F77 call `CHEMM('L', 'L', n, m, α , A, lda, B, ldb, β , C, ldc)`

SY

cblas

