

## 标准 C 语言头文件

### ISO C 标准定义的头文件(24 项)

<assert.h> 验证程序断言	<complex.h> 支持复数算术运算	<ctype.h> 字符类型
<errno.h> 出错码	<fenv.h> 浮点环境	<float.h> 浮点常量
<inttypes.h> 整型格式转换	<iso646.h> 替代关系操作符宏	<limits.h> 实现常量
<locale.h> 局部类别	<math.h> 数学常量	<setjmp.h> 非局部 goto
<signal.h> 信号	<stdarg.h> 可变参数表	<stdbool.h> 布尔类型和值
<stddef.h> 标准定义	<stdint.h> 整型	<stdio.h> 标准 I/O 库
<stdlib.h> 实用程序库函数	<string.h> 字符串操作	<tgmath.h> 通用类型数学宏
<time.h> 时间和日期	<wchar.h> 宽字符支持	<wctype.h> 宽字符分类和映射支持

### POSIX 标准定义的必须的头文件(26 项)

<dirent.h> 目录项	<fcntl.h> 文件控制	<fnmatch.h> 文件名匹配类型
<glob.h> 路径名模式匹配类型	<grp.h> 组文件	<netdb.h> 网络数据库操作
<pwd.h> 口令文件	<regex.h> 正则表达式	<tar.h> tar 归档值
<termios.h> 终端 I/O	<unistd.h> 符号常量	<utime.h> 文件时间
<wordexp.h> 字扩展类型	<arpa/inet.h> Internet 定义	<net/if.h> 套接字本地接口
<netinet/in.h> Internet 地址族	<netinet/tcp.h> 传输控制协议	<sys/mman.h> 内存管理声明
<sys/select.h> select 函数	<sys/socket.h> 套接字接口	<sys/stat.h> 文件状态
<sys/times.h> 进程时间	<sys/types.h> 基本系统数据类型	<sys/un.h> UNIX 域套接字定义
<sys/utsname.h> 系统名	<sys/wait.h> 进程控制	

### POSIX 标准定义的 XSI 扩展头文件(26 项)

<cpio.h> cpio 归档值	<dlfcn.h> 动态链接	<fmtmsg.h> 消息显示结构
<ftw.h> 文件树漫游	<iconv.h> 代码集转换实用程序	<langinfo.h> 语言信息常量
<libgen.h> 模式匹配函数定义	<monetary.h> 货币类型	<ndbm.h> 数据库操作
<nl_types.h> 消息类别	<poll.h> 轮询函数	<search.h> 搜索表
<strings.h> 字符串操作	<syslog.h> 系统出错日志记录	<ucontext.h> 用户上下文
<ulimit.h> 用户限制	<utmpx.h> 用户帐户数据库	<sys/ipc.h> IPC
<sys/msg.h> 消息队列	<sys/resource.h> 资源操作	<sys/sem.h> 信号量
<sys/shm.h> 共享存储	<sys/statvfs.h> 文件系统信息	<sys/time.h> 时间类型
<sys/timex.h> 附加的时间	<sys/uio.h> 矢量 I/O 操作	

### POSIX 标准定义的可选头文件(8 项)

<aio.h> 异步 I/O	<mqueue.h> 消息队列	<pthread.h> 线程
<sched.h> 执行调度	<semaphore.h> 信号量	<spawn.h> 实时 spawn 接口
<stropts.h> XSI STREAMS 接口	<trace.h> 时间跟踪	

## 标准 C++ 语言头文件 ( 54 个其中 16 个用于构建 STL,3 个为附加非必须 )

<u>&lt;algorithm&gt;</u> STL 通用算法	<u>&lt;bitset&gt;</u> STL 位集容器	<u>&lt;cassert&gt;</u> 用于在程序运行时执行断言
<u>&lt;cctype&gt;</u> 字符处理	<u>&lt;cerrno&gt;</u> 错误码	<u>&lt;cfloat&gt;</u> 用于测试浮点类型属性
<u>&lt;ciso646&gt;</u> ISO646 变体字符集	<u>&lt;climits&gt;</u> 测试整数类型属性	<u>&lt;locale&gt;</u> 本地化函数
<u>&lt;cmath&gt;</u> 数学函数	<u>&lt;complex&gt;</u> 复数类	<u>&lt;csetjmp&gt;</u> 执行非内部的 goto 语句
<u>&lt;csignal&gt;</u> 信号	<u>&lt;cstdarg&gt;</u> 访问参数数量变化的函数	<u>&lt;stddef&gt;</u> 用于定义实用的类型和宏
<u>&lt;cstdio&gt;</u> 输入/输出	<u>&lt;cstdlib&gt;</u> 杂项函数及内存分配	<u>&lt;cstring&gt;</u> 字符串
<u>&lt;ctime&gt;</u> 时间	<u>&lt;cwchar&gt;</u> 宽字符处理及输入/输出	<u>&lt;cwctype&gt;</u> 宽字符分类
<u>&lt;deque&gt;</u> STL 双端队列容器	<u>&lt;exception&gt;</u> 异常处理类	<u>&lt;fstream&gt;</u> 文件流
<u>&lt;functional&gt;</u> STL 函数对象	<u>&lt;iomanip&gt;</u> 参数化输入/输出	<u>&lt;ios&gt;</u> 基本输入/输出支持
<u>&lt;iosfwd&gt;</u> 输入/输出前置声明	<u>&lt;iostream&gt;</u> 数据流输入/输出	<u>&lt;istream&gt;</u> 基本输入流
<u>&lt;iterator&gt;</u> 遍历序列的类	<u>&lt;limits&gt;</u> 各种数据类型最值常量	<u>&lt;list&gt;</u> STL 线性列表容器
<u>&lt;locale&gt;</u> 国际化支持	<u>&lt;map&gt;</u> STL 映射容器	<u>&lt;memory&gt;</u> 专用内存分配器
<u>&lt;new&gt;</u> 基本内存分配和释放	<u>&lt;numeric&gt;</u> 通用的数字操作	<u>&lt;ostream&gt;</u> 基本输出流
<u>&lt;queue&gt;</u> STL 队列容器	<u>&lt;set&gt;</u> STL 集合容器	<u>&lt;sstream&gt;</u> 基于字符串的流
<u>&lt;stack&gt;</u> STL 堆栈容器	<u>&lt;stdexcept&gt;</u> 标准异常类	<u>&lt;streambuf&gt;</u> istream 的缓冲区类
<u>&lt;string&gt;</u> 字符串类	<u>&lt;strstream&gt;</u> 非内存字符序列的流类	<u>&lt;typeinfo&gt;</u> 运行时类型标识
<u>&lt;utility&gt;</u> STL 通用模板类	<u>&lt;valarray&gt;</u> 支持值数组的类和模版类	<u>&lt;vector&gt;</u> STL 动态数组容器

## 标准 C++ 附加的头文件(3 个)非必须

<u>&lt;hash_map&gt;</u>	<u>&lt;hash_set&gt;</u>	<u>&lt;slist&gt;</u>
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The Standard C++ library consists of 51 required headers. This implementation also includes three additional headers, `<hash_map>`, `<hash_set>`, and `<slist>`, not required by the C++ Standard, for a total of 54 headers. Of these 54 headers, 16 constitute the Standard Template Library, or STL. These are indicated below with the notation

```
<algorithm> -- (STL) for defining numerous templates that implement useful algorithms
<bitset>    -- for defining a template class that administers sets of bits
<complex>   -- for defining a template class that supports complex arithmetic
<deque>     -- (STL) for defining a template class that implements a deque container
<exception> -- for defining several functions that control exception handling
<fstream>   -- for defining several iostreams template classes that manipulate external files
<functional> -- (STL) for defining several templates that help construct predicates for
               the templates defined in <algorithm> and <numeric>
<hash_map>  -- (STL) for defining template classes that implement hashed associative containers
               that map keys to values
<hash_set>  -- (STL) for defining template classes that implement hashed associative containers
<iomanip>    -- for declaring several iostreams manipulators that take an argument
<ios>       -- for defining the template class that serves as the base for many iostreams classes
<iosfwd>    -- for declaring several iostreams template classes before they are necessarily
               defined
<iostream>  -- for declaring the iostreams objects that manipulate the standard streams
<istream>   -- for defining the template class that performs extractions
<iterator>  -- (STL) for defining several templates that help define and manipulate iterators
<limits>    -- for testing numeric type properties
<list>      -- (STL) for defining a template class that implements a doubly linked list container
<locale>    -- for defining several classes and templates that control
               locale-specific behavior, as in the iostreams classes
<map>       -- (STL) for defining template classes that implement associative containers that
               map keys to values
<memory>    -- (STL) for defining several templates that allocate and free storage for various
               container classes
<new>       -- for declaring several functions that allocate and free storage
<numeric>   -- (STL) for defining several templates that implement useful numeric functions
<ostream>   -- for defining the template class that performs insertions
<queue>     -- (STL) for defining a template class that implements a queue container
<set>       -- (STL) for defining template classes that implement associative containers
<slist>     -- (STL) for defining a template class that implements a singly linked list container
<sstream>    -- for defining several iostreams template classes that manipulate string containers
<stack>     -- (STL) for defining a template class that implements a stack container
<stdexcept> -- for defining several classes useful for reporting exceptions
<streambuf> -- for defining template classes that buffer iostreams operations
<string>    -- for defining a template class that implements a string container
<stringstream> -- for defining several iostreams classes that manipulate in-memory character
               sequences
<typeinfo>  -- for defining class type_info, the result of the typeid operator
<utility>   -- (STL) for defining several templates of general utility
<valarray>  -- for defining several classes and template classes that support value-oriented
               arrays
```

**<vector>** -- (STL) for defining a template class that implements a vector container

#### 新的 C 标准库

**<cassert>** -- for enforcing assertions when functions execute  
**<cctype>** -- for classifying characters  
**<cerrno>** -- for testing error codes reported by library functions  
**<cfloat>** -- for testing floating-point type properties  
**<ciso646>** -- for programming in ISO 646 variant character sets  
**<climits>** -- for testing integer type properties  
**<locale>** -- for adapting to different cultural conventions  
**<cmath>** -- for computing common mathematical functions  
**<setjmp>** -- for executing nonlocal goto statements  
**<csignal>** -- for controlling various exceptional conditions  
**<cstdlib>** -- for accessing a varying number of arguments  
**<stddef>** -- for defining several useful types and macros  
**<stdio>** -- for performing input and output  
**<stdlib>** -- for performing a variety of operations  
**<cstring>** -- for manipulating several kinds of strings  
**<ctime>** -- for converting between various time and date formats  
**<wchar>** -- for manipulating wide streams and several kinds of strings  
**<wctype>** -- for classifying wide characters

#### 旧的 C 标准库

**<assert.h>** -- for enforcing assertions when functions execute  
**<ctype.h>** -- for classifying characters  
**<errno.h>** -- for testing error codes reported by library functions  
**<float.h>** -- for testing floating-point type properties  
**<iso646.h>** -- for programming in ISO 646 variant character sets  
**<limits.h>** -- for testing integer type properties  
**<locale.h>** -- for adapting to different cultural conventions  
**<math.h>** -- for computing common mathematical functions  
**<setjmp.h>** -- for executing nonlocal goto statements  
**<signal.h>** -- for controlling various exceptional conditions  
**<stdarg.h>** -- for accessing a varying number of arguments  
**<stddef.h>** -- for defining several useful types and macros  
**<stdio.h>** -- for performing input and output  
**<stdlib.h>** -- for performing a variety of operations  
**<string.h>** -- for manipulating several kinds of strings  
**<time.h>** -- for converting between various time and date formats  
**<wchar.h>** -- for manipulating wide streams and several kinds of strings  
**<wctype.h>** -- for classifying wide characters

Finally, in this implementation, the Standard C++ library also includes several headers for compatibility with traditional C++ libraries:

**<fstream.h>** -- for defining several iostreams template classes that manipulate external files  
**<iomanip.h>** -- for declaring several iostreams manipulators that take an argument  
**<iostream.h>** -- for declaring the iostreams objects that manipulate the standard streams  
**<new.h>** -- for declaring several functions that allocate and free storage  
**<stl.h>** -- for declaring several template classes that aid migration from older versions of the Standard Template Library