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## Reference

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## &lt;iostream&gt;

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## iostream

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## C++ Method

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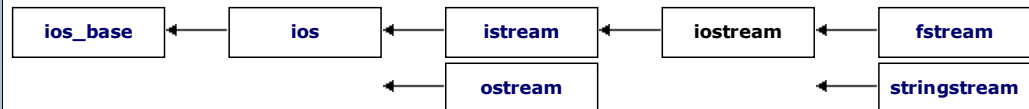
class

## std::iostream

&lt;iostream&gt; &lt;iostream&gt;

typedef basic\_iostream&lt;char&gt; iostream;

## Input/output stream



[NOTE: This page describes the iostream class, for a description of the iostream library, see [Input/Output library](#).]

This is an instantiation of `basic_iostream` with the following template parameters:

template parameter	definition	comments
charT	char	Aliased as member <code>char_type</code>
traits	<code>char_traits&lt;char&gt;</code>	Aliased as member <code>traits_type</code>

This class inherits all members from its two parent classes `istream` and `ostream`, thus being able to perform both input and output operations.

The class relies on a single `streambuf` object for both the input and output operations.

Objects of these classes keep a set of internal fields inherited from `ios_base`, `ios` and `istream`:

	field	member functions	description
Formatting	format flags	<code>flags</code> <code>setf</code> <code>unsetf</code>	A set of internal flags that affect how certain input/output operations are interpreted or generated. See member type <code>fmtflags</code> .
	field width	<code>width</code>	Width of the next formatted element to insert.
	display precision	<code>precision</code>	Decimal precision for the next floating-point value inserted.
	locale	<code>getloc</code> <code>imbue</code>	The <code>locale</code> object used by the function for formatted input/output operations affected by localization properties.
	fill character	<code>fill</code>	Character to pad a formatted field up to the <i>field width</i> ( <code>width</code> ).
State	error state	<code>rdstate</code> <code>setstate</code> <code>clear</code>	The current error state of the stream. Individual values may be obtained by calling <code>good</code> , <code>eof</code> , <code>fail</code> and <code>bad</code> . See member type <code>istate</code> .
	exception mask	<code>exceptions</code>	The state flags for which a <code>failure</code> exception is thrown. See member type <code>istate</code> .
Other	callback stack	<code>register_callback</code>	Stack of pointers to functions that are called when certain events occur.
	extensible arrays	<code>iword</code> <code>pword</code> <code>xalloc</code>	Internal arrays to store objects of type <code>long</code> and <code>void*</code> .
	tied stream	<code>tie</code>	Pointer to output stream that is flushed before each i/o operation on this stream.
	stream buffer	<code>rdbuf</code>	Pointer to the associated <code>streambuf</code> object, which is charge of all input/output operations.
	character count	<code>gcount</code>	Count of characters read by last unformatted input operation (input streams only).

## Member types

C++98

C++11



Member types `char_type`, `traits_type`, `int_type`, `pos_type` and `off_type` are ambiguous (multiple inheritance).

These member types inherited from its base classes (`istream`, `ostream` and `ios_base`):

<b>event</b>	Type to indicate event type (public member type)
<b>event_callback</b>	Event callback function type (public member type)
<b>failure</b>	Base class for stream exceptions (public member class)
<b>fmtflags</b>	Type for stream format flags (public member type)
<b>Init</b>	Initialize standard stream objects (public member class)
<b>istate</b>	Type for stream state flags (public member type)
<b>openmode</b>	Type for stream opening mode flags (public member type)
<b>seekdir</b>	Type for stream seeking direction flag (public member type)

<b>istream::sentry</b>	Prepare stream for input (public member class )
<b>ostream::sentry</b>	Prepare stream for output (public member class )

*fx* **Public member functions**

<b>(constructor)</b>	Construct object (public member function )
<b>(destructor)</b>	Destroy object (public member function )

*fx* **Protected member functions**

<b>operator=</b> <small>C++11</small>	Move assignment (protected member function )
<b>swap</b> <small>C++11</small>	Swap internals (protected member function )

*fx* **Public member functions inherited from istream**

<b>operator&gt;&gt;</b>	Extract formatted input (public member function )
<b>gcount</b>	Get character count (public member function )
<b>get</b>	Get characters (public member function )
<b>getline</b>	Get line (public member function )
<b>ignore</b>	Extract and discard characters (public member function )
<b>peek</b>	Peek next character (public member function )
<b>read</b>	Read block of data (public member function )
<b>readsome</b>	Read data available in buffer (public member function )
<b>putback</b>	Put character back (public member function )
<b>unget</b>	Unget character (public member function )
<b>tellg</b>	Get position in input sequence (public member function )
<b>seekg</b>	Set position in input sequence (public member function )
<b>sync</b>	Synchronize input buffer (public member function )

*fx* **Public member functions inherited from ostream**

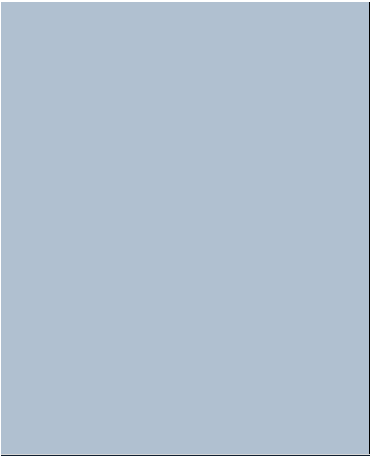
<b>operator&lt;&lt;</b>	Insert formatted output (public member function )
<b>put</b>	Put character (public member function )
<b>write</b>	Write block of data (public member function )
<b>tellp</b>	Get position in output sequence (public member function )
<b>seekp</b>	Set position in output sequence (public member function )
<b>flush</b>	Flush output stream buffer (public member function )

*fx* **Public member functions inherited from ios**

<b>good</b>	Check whether state of stream is good (public member function )
<b>eof</b>	Check whether eofbit is set (public member function )
<b>fail</b>	Check whether either failbit or badbit is set (public member function )
<b>bad</b>	Check whether badbit is set (public member function )
<b>operator!</b>	Evaluate stream (not) (public member function )
<b>operator bool</b> <small>C++11</small>	Evaluate stream (public member function )
<b>rdstate</b>	Get error state flags (public member function )
<b>setstate</b>	Set error state flag (public member function )
<b>clear</b>	Set error state flags (public member function )
<b>copyfmt</b>	Copy formatting information (public member function )
<b>fill</b>	Get/set fill character (public member function )
<b>exceptions</b>	Get/set exceptions mask (public member function )
<b>imbue</b>	Imbue locale (public member function )
<b>tie</b>	Get/set tied stream (public member function )
<b>rdbuf</b>	Get/set stream buffer (public member function )
<b>narrow</b>	Narrow character (public member function )
<b>widen</b>	Widen character (public member function )

*fx* **Public member functions inherited from ios\_base**

<b>flags</b>	Get/set format flags (public member function )
<b>setf</b>	Set specific format flags (public member function )
<b>unsetf</b>	Clear specific format flags (public member function )



<b>precision</b>	Get/Set floating-point decimal precision ( <a href="#">public member function</a> )
<b>width</b>	Get/set field width ( <a href="#">public member function</a> )
<b>imbue</b>	Imbue locale ( <a href="#">public member function</a> )
<b>getloc</b>	Get current locale ( <a href="#">public member function</a> )
<b>xalloc</b>	Get new index for extensible array [static] ( <a href="#">public static member function</a> )
<b>word</b>	Get integer element of extensible array ( <a href="#">public member function</a> )
<b>pword</b>	Get pointer element of extensible array ( <a href="#">public member function</a> )
<b>register_callback</b>	Register event callback function ( <a href="#">public member function</a> )
<b>sync_with_stdio</b>	Toggle synchronization with cstdio streams [static] ( <a href="#">public static member function</a> )



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