

C++: Rules for Different Ways of Initialization

	always has defined value	narrowing is error	works for initializer _list<>	explicit conversion supported	works for aggregates	works for auto	works for members
<i>Type i;</i>	no	-	no	-	✓ (no init)	no	✓
<i>Type i{};</i>	✓	-	✓	-	✓	no	✓
<i>Type i();</i>	function declaration						
direct initialization	<i>Type i{x};</i>	✓	✓ ¹	✓	✓	✓	✓ ²
	<i>Type i(x);</i>	✓	no	no	✓	since C++20, not nested	no
	<i>Type i(x, y);</i>	✓ (2 args)	no	no	✓	since C++20, not nested	no
copy initialization	<i>Type i = x;</i>	✓	no	no	no	no	✓
	<i>Type i = {x};</i>	✓	✓ ¹	✓	no	✓ init-list	✓
	<i>Type i = (x);</i>	✓ (1 arg)	no	no	no	since C++20, not nested	✓ (1 arg)
	<i>Type i = (x, y);</i>	✓ (last arg)	no	no	no	since C++20, not nested	✓ (last arg)

¹: g++ needs `-pedantic-errors` or `-Werror=narrowing` to detect narrowing errors

²: `std::initializer_list<>` before g++ 5, clang 3.8, and Visual Studio 2015