


| What the user Explicitly Provides | STATUS OF WHAT THE COMPILER WILL GENERATE FOR US  |                  |                  |                          |                  |                          |
|-----------------------------------|---|------------------|------------------|--------------------------|------------------|--------------------------|
|                                   | Default Constructor   | Destructor       | Copy Constructor | Copy Assignment Operator | Move Constructor | Move Assignment Operator |
|                                   | User Provides Nothing   |                  |                  |                          |                  |                          |
|                                   | Default Provided  | Default Provided | Default Provided | Default Provided         | Default Provided | Default Provided         |
| Any Constructor                   | NOT PROVIDED  | Default Provided | Default Provided | Default Provided         | Default Provided | Default Provided         |
| Default Constructor               | USER PROVIDED   | Default Provided | Default Provided | Default Provided         | Default Provided | Default Provided         |
| Destructor                        | Default Provided  | USER PROVIDED    | Default Provided | Default Provided         | NOT PROVIDED     | NOT PROVIDED             |
| Copy Constructor                  | NOT PROVIDED  | Default Provided | USER PROVIDED    | Default Provided         | NOT PROVIDED     | NOT PROVIDED             |
| Copy Assignment Operator          | Default Provided  | Default Provided | Default Provided | USER PROVIDED            | NOT PROVIDED     | NOT PROVIDED             |
| Move Constructor                  | NOT PROVIDED  | Default Provided | DELETED          | DELETED                  | USER PROVIDED    | NOT PROVIDED             |
| Move Assignment Operator          | Default Provided  | Default Provided | DELETED          | DELETED                  | NOT PROVIDED     | USER PROVIDED            |

“Default Provided” → Compiler will generate the function. “DELETED” → the functions still participate in overload resolution; but it is a compile time error to make calls to them. “NOT PROVIDED” → Compiler will not generate these functions (so the functions are NOT part of overload resolution). – please report errors, omissions, improvements to: shankar swamy.

| Assignment to ...  | value categories to be assigned to the category on the first column  |   |                                   |   |          |          |
|--|---|---|-----------------------------------|---|----------|----------|
|  | lvalue  | const lvalue                                      | lvalue&                           | const lvalue&                                     | rvalue   | rvalue&& |
|  | YES (1)   | YES (2)   | YES (3)                           | YES (4)   | YES (5)  | YES (6)  |
| lvalue =   | YES (1)   | YES (2)   | YES (3)                           | YES (4)   | YES (5)  | YES (6)  |
| const lvalue =   | YES (7)   | YES (8)   | YES (9)                           | YES (10)  | YES (11) | YES (12) |
| lvalue& =  | YES (13)  | NO (14)   | YES (15)                          | NO (16)   | NO (17)  | NO (18)  |
| const lvalue& =  | YES (19)  | YES (20)  | YES (21)                          | YES (22)  | YES (23) | YES (24) |
| rvalue =   | YES (25)  | YES (26)  | YES (27)                          | YES (28)  | YES (29) | YES (30) |
| rvalue&& =  | YES (31)<br>via<br>std::move(...)   | YES (32)<br>remove const<br>and<br>std::move(...) | YES (33)<br>via<br>std::move(...) | YES (34)<br>remove const<br>and<br>std::move(...) | YES (35) | YES (36) |