Value	**Description**	**Motivation from Simulation Perspective**
'U'	Uninitialized	Indicates that the signal has not been initialized, helping detect uninitialized signals during simulation.
'X'	Forcing Unknown	Represents an unknown state due to signal conflicts or undefined values, useful for detecting driver conflicts.
'0'	Logic 0	Represents logical low (false), typically used for normal binary operation.
'1'	Logic 1	Represents logical high (true), typically used for normal binary operation.
'Z'	High Impedance	Represents a tri-state condition, useful for modeling buses and tri-state buffers where signals are not driven.
'W'	Weak Unknown	Indicates a weakly driven unknown state, useful for modeling situations where the drive strength is insufficient.
'L'	Weak 0	Represents a weakly driven logic 0, commonly used for weak pull-down configurations.
'H'	Weak 1	Represents a weakly driven logic 1, commonly used for weak pull-up configurations.
'-'	Don't Care	Represents a "don't care" condition, useful for synthesis optimization where the exact value is irrelevant.

Table 1: Possible Values of the `std_logic` Type and Their Simulation Motivations