

Constraints
Dictionary

Timing Domain	
Used By	Synthesis, Timing Analysis, Timing-Driven Layout, Logic Optimization

Name	Semantics	Type	Applies To	Parameters		
				Name	Value Type	Semantics
Waveform	A description of an abstract waveform	Environment condition	None	Edges (exact)	List of floats	Offsets from an implicit reference point in time
				Edges (min/max ranges)	List of min/max ranges (float)	Offsets from an implicit reference point in time. Min/max range describes uncertainty region in which edge can occur
Derived waveform	A waveform which is derived from another waveform (by a clock multiplier or divider, for example)	Environment condition	None	Parent waveform	Waveform name	The waveform from which this waveform is derived. The parent may be a derived waveform itself.
				Phase shift	Float	Offset from the parent waveform
				Frequency multiplier	Float	Multiplier relative to parent waveform frequency. 0.5 corresponds to divide-by-two
				Skew adjustment (exact)	List of floats	Additional skew. Each value is both added to and subtracted from corresponding edges in the parent waveform
				Skew adjustment (min/max)	List of min/max ranges (float)	Additional skew. Min value is subtracted, max value is added to corresponding edges in the parent waveform
Clock	Specifies a set of points in the design at which a clock waveform originates	Environment condition	Hierarchical pins or primitive outputs	Waveform name	String	Name of the abstract waveform
Arrival time	A range of time during which a transition is assumed to occur at a given pin	Environment condition	Hierarchical pins or primitive pins	Waveform name	String	Name of the abstract waveform which is the reference for the arrival time
				Reference edge	Rising or falling	Relevant edge of the waveform
				Arrival value	Min/max ranges (float) for rising and falling data edges	Uncertainty region, added to the relevant edge
Required time	A range of time during which a transition is not allowed to occur, expressed as setup and hold constraints on a virtual register at the pin	Constraint	Hierarchical pins or primitive pins	Waveform name	String	Name of the abstract waveform which is the reference for the required time
				Reference edge	Rising or falling	Relevant edge of the waveform
				Setup	Float pair for rising and falling data edges	Subtracted from relevant edge of the waveform to define latest a transition may occur
				Hold	Float pair for rising and falling data edges	Added to relevant edge of the waveform to define earliest a transition may occur