You are here: Synthesis Man Pages > **Synthesis Tool Commands** > **s** > set_driving_cell

set_driving_cell

NAME
SYNTAX
ARGUMENTS
DESCRIPTION
EXAMPLES
SEE ALSO

NAME

set_driving_cell

Sets attributes on input or inout ports of the current design that specify that a library cell or output pin of a library cell drives the specified ports.

SYNTAX

```
status set_driving_cell
    [-lib_cell lib_cell_name]
    [-library lib]
    [-rise]
    [-fall]
    [-min]
    [-max]
    [-pin pin_name]
    [-from_pin from_pin_name]
    [-dont_scale]
    [-no_design_rule]
    [-none]
    [-input_transition_rise rtran]
    [-input_transition_fall ftran]
    [-multiply_by factor]
    port_list
    [-cell obsolete_-_please_use_-lib_cell_instead]
```

Data Types

```
lib_cell_name      string
lib                string
pin_name           string
from_pin_name      string
rtran              float
ftran              float
factor             float
port_list          list
```

ARGUMENTS

-lib_cell *lib_cell_name*

Specifies the name of the library cell to use to drive ports. You can use this option with the **-pin** option when the cell has more than one output pin to set the **driving_cell_rise** and the **driving_cell_fall** string attributes to *lib_cell_name* on the ports. To specify different cells for the rising and falling cases, execute the command twice, once using the **-rise** option and once using the **-fall** option, specifying the appropriate *lib_cell_name* for each. When you use this option, you must also use the **-dont_scale** and **-multiply_by** options. By default, the command searches the libraries in **link_library** for the cell.

-library *lib*

Specifies the library name or a collection of libraries in which to find the name of the library cell to use to drive ports (*lib_cell_name*). If the lib cell can be found in multiple libraries, the library with matching operating condition on the port will be used. When no library is specified, all the libraries will be searched for the lib cell with matching operating condition. If a library cell with a matching operating condition cannot be found, the first one found with a matching lib cell name will be used.

You can use this option only with the **-lib_cell** option. It sets the **driving_cell_library_rise** and the **driving_cell_library_fall** string attributes to the library name on the ports. To specify different libraries for the rising and falling cases, execute the command twice, using the **-rise** option once and the **-fall** option once, specifying the appropriate *lib* for each.

-rise

Specifies that the *lib_cell_name*, *lib*, *pin_name*, and *from_pin_name* correspond to the rising case, and sets the **driving_cell_rise**, **driving_cell_library_rise**, **driving_cell_pin_rise**, and **driving_cell_from_pin_rise** attribute strings, respectively, on the objects. You can use this option with the **-fall** option to specify both the rising and falling cases.

-fall

Specifies that the *lib_cell_name*, *lib*, *pin_name*, and *from_pin_name* correspond to the falling case, and sets the **driving_cell_fall**, **driving_cell_library_fall**, **driving_cell_pin_fall**, and **driving_cell_from_pin_fall** attribute strings, respectively, on the objects. You can use this option with **-rise** to specify both the rising and falling cases.

-min

Sets driving cell information for analysis at the minimum operating condition only.

-max

Sets driving cell information for analysis at the maximum operating condition only.

-pin *pin_name*

Specifies the output pin on the driving cell that is to drive the ports. The **-pin** option is required when you use the **-lib_cell** option and the driving cell has more than one output pin or when using the **-from_pin** option. This option sets the **driving_cell_pin_rise** and the **driving_cell_pin_fall** string attributes to *pin_name* on the ports. To specify different pins for the rising and falling cases, execute the command twice, once using the **-rise** option and once using the **-fall** option, specifying the appropriate *pin_name* for each. The default is to use the first timing arc found on the library cell.

-from_pin *from_pin_name*

Specifies the input pin on the driving cell to use when finding a timing arc. This option is required when the driving cell has more than one input pin and the arcs from those pins have different drive characteristics, and when using the **-pin** and **-lib_cell** options. The **-from_pin** option sets the **driving_cell_from_pin_rise** and **driving_cell_from_pin_fall** string attributes to *from_pin_name* on the ports. The default is to use the first timing arc found on the library cell.

-dont_scale

Specifies that the timing analyzer is not to scale the drive capability of the ports according to the current operating conditions. You can use this option only with the **-lib_cell** option. The **-dont_scale** option sets the **driving_cell_dont_scale** Boolean attribute to **true** on the ports. By default, the port drive capability is scaled for operating conditions exactly as the driving cell would be scaled.

-no_design_rule

Indicates that the design rules associated with the driving cell are not to be applied to the driven port. This option sets the **driving_cell_no_drc** Boolean attribute to **true** on the ports. Timing-related attributes are still applied. The tool issues a warning if this option is not used. By default, design rule attributes (**max_fanout**, **max_capacitance**, **max_transition**, **min_fanout**, **min_capacitance**, **min_transition**)

are derived from the driving cell and its library and applied to the port.

-none

> Removes previous driving cell information.

-input_transition_rise *rtran*

> Specifies the input rise transition time associated with the **-from_pin** option. Use the **-input_transition_rise** and **-input_transition_fall** options to obtain a more accurate transition time and delay time at the output pin by capturing the accurate transition time associated with the **-from_pin**. The default value is **0**.

-input_transition_fall *ftran*

> Specifies the input fall transition time associated with the **-from_pin** option. The default value is **0**.

-multiply_by *factor*

> Specifies a factor by which to multiply the delay characteristics of the ports. You can use this option only with the **-lib_cell** option. It affects both the load delay and the transition times of the port. It sets the **driving_cell_multiply_by** float attribute to the specified factor on the ports. The default is **1.0**.

port_list

> Specifies a list of names of input or inout ports in the current design on which the driving cell attributes are to be placed. If more than one port is specified, they must be enclosed in either quotes or braces ({}).

DESCRIPTION

This command sets attributes on the specified input or inout ports in the current design to associate an external driving cell with the ports. The drive capability of the port is the same as if the specified driving cell were connected in the same context to allow accurate modeling of the port drive capability for nonlinear delay models. For the CMOS2 delay model, the edge rate of pins driven by the port is the same as if the driving cell were substituted for the port. Unless you specify the **-dont_scale** option, the drive capability of the port is scaled according to the current operating conditions.

To view drive information on ports, use the **report_port** command with the **-drive** option.

You can use the **characterize** command to automatically set driving cell attributes on subdesign ports based on their context in the entire design.

You can use the **remove_driving_cell** or **reset_design** command to remove driving cell attributes on ports. The **remove_driving_cell** command removes any corresponding rise or fall drive resistance attributes (from the **set_drive** command) on the specified ports. It is considered best practice to use the **set_driving_cell** command instead of **set_drive**, because **set_driving_cell** is more accurate.

In UPF mode, driving cell attribute is applied on the input ports only if the port's supply voltage (supply is specified using **set_related_supply_net** or **set_port_attributes -driver_supply** and the voltage is specified using **set_voltage** command) matches with the voltage of the driving cell. It will be an error if the voltages do not match and the command fails on ports not meeting this voltage compliance check.

Multicorner-Multimode Support

> This command applies to the current scenario only.

EXAMPLES

The following example associates the drive capability of the AND2 library cell with the IN1 port.

```
prompt> set_driving_cell -lib_cell AND2 {IN1}
```

The following example associates the drive capability of the INV/Z library pin from the tech_lib library with all input and inout ports.

```
prompt> set_driving_cell -lib_cell INV -pin Z \
    -library tech_lib [all_inputs]
```

The following example associates the drive capability of the INV library cell with the IN1 port and specifies that the delay values should not be scaled by operating condition factors.

```
prompt> set_driving_cell -lib_cell INV -dont_scale {IN1}
```

The following example associates the Z pin of the BUF1_TS library cell with the IN1 port for rising delays and the Q pin of the DFF_TS library cell for falling delays.

```
prompt> set_driving_cell -rise -lib_cell BUF1_TS -pin Z
prompt> set_driving_cell -fall -lib_cell DFF_TS -pin Q {IN1}
```

The following example associates the AN2 driving cell with the top1 input port with an input rise transition time of 2.3 on pin A.

```
prompt> set_driving_cell -lib_cell AN2 \
    -input_transition_rise 2.3 -from_pin A top1
```

SEE ALSO

all_inputs(2)
characterize(2)
remove_driving_cell(2)
report_port(2)
reset_design(2)
set_drive(2)
set_load(2)
set_max_capacitance(2)
set_max_fanout(2)
set_max_transition(2)
set_min_capacitance(2)
set_port_fanout_number(2)