

Icarus Verilog Installation

Windows Installation

The Windows version can be directly downloaded from the following link, which includes both iverilog and gtkwave:

- <http://bleyer.org/icarus/>

Setting PATH Environment Variable in Windows

1. Open System Properties --> Advanced --> Environment Variables.
2. Edit Path under System Variables and add:
 - C:\iverilog\bin
 - C:\iverilog\gtkwave\bin
3. Click OK to save

Write the Verilog Module Create the Verilog module and gate.v:

```
module and_gate (z , x , y ) ;
    input x , y ;
    output z ;
    assign z = x & y ;
endmodule
```

Write the Test Bench Create the test bench and tb_gate.v

```
module and_gate_tb ;
    reg t_x , t_y ;
    wire t_z ;
    and_gate ckt ( t_z , t_x , t_y ) ;
    initial begin
        $dumpfile ( " and_gate . vcd " ) ;
        $dumpvars (0 , and_gate_tb ) ;
        $monitor ( t_x , t_y , t_z ) ;
        t_x = 0; t_y = 0;
        #5; t_x = 0; t_y = 1;
        #5; t_x = 1; t_y = 0;
        #5; t_x = 1; t_y = 1;
    end
endmodule
```

Compile Using iverilog

→ To compile the Verilog files, use the following command:

```
iverilog -o test and_gate.v tb_and_gate.v
```

```
// "test" is output file name
```

Run the Simulation Run the compiled simulation with:

```
vvp test
```

Display the Waveform

To view the waveform, use following command:

```
gtkwave and_gate.vcd
```