Synthesis Report

Wed Apr 15 23:06:33 2020

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Release 14.7 - xst P.20131013 (nt64)
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--> Parameter TMPDIR set to xst/projnav.tmp
Total REAL time to Xst completion: 0.00 secs
Total CPU time to Xst completion: 0.09 secs

--> Parameter xsthdpdir set to xst
Total REAL time to Xst completion: 0.00 secs
Total CPU time to Xst completion: 0.09 secs

--> Reading design: sign_digit.prj
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=========================================================================
*                     Synthesis Options Summary                         *
=========================================================================
---- Source Parameters
Input File Name                    : "sign_digit.prj"
Ignore Synthesis Constraint File   : NO
---- Target Parameters
Output File Name                   : "sign_digit"
Output Format                      : NGC
Target Device                      : xc7a100t-3-csg324
---- Source Options
Top Module Name                    : sign_digit
Automatic FSM Extraction           : YES
FSM Encoding Algorithm             : Auto
Safe Implementation                : No
FSM Style                          : LUT
RAM Extraction                     : Yes
RAM Style                          : Auto
ROM Extraction                     : Yes
Shift Register Extraction          : YES
ROM Style                          : Auto
Resource Sharing                   : YES
Asynchronous To Synchronous        : NO
Shift Register Minimum Size        : 2
Use DSP Block                      : Auto
Automatic Register Balancing       : No
---- Target Options
LUT Combining                      : Auto
Reduce Control Sets                : Auto
Add IO Buffers                     : YES
Global Maximum Fanout              : 100000
Add Generic Clock Buffer(BUFG)     : 32
Register Duplication               : YES
Optimize Instantiated Primitives   : NO
Use Clock Enable                   : Auto
Use Synchronous Set                : Auto
Use Synchronous Reset              : Auto
Pack IO Registers into IOBs        : Auto
Equivalent register Removal        : YES
---- General Options
Optimization Goal                  : Speed
Optimization Effort                : 1
Power Reduction                    : NO
Keep Hierarchy                     : No
Netlist Hierarchy                  : As_Optimized
RTL Output                         : Yes
Global Optimization                : AllClockNets
Read Cores                         : YES
Write Timing Constraints           : NO
Cross Clock Analysis               : NO
Hierarchy Separator                : /
Bus Delimiter                      : <>
Case Specifier                     : Maintain
Slice Utilization Ratio            : 100
BRAM Utilization Ratio             : 100
DSP48 Utilization Ratio            : 100
Auto BRAM Packing                  : NO
Slice Utilization Ratio Delta      : 5
=========================================================================
=========================================================================
*                          HDL Parsing                                  *
=========================================================================
Analyzing Verilog file "C:/Users/ALI/Desktop/New folder (2)/double recoding (2).v" into library work
Parsing module .
Parsing module .
```

```
Parsing module .
=========================================================================
*                            HDL Elaboration                            *
=========================================================================
Elaborating module .
Elaborating module .
WARNING:HDLCompiler:1127 - "C:/Users/ALI/Desktop/New folder (2)/double recoding (2).v" Line 153: Assignment to H4 ignored, since the identif
Elaborating module .
WARNING:HDLCompiler:189 - "C:/Users/ALI/Desktop/New folder (2)/double recoding (2).v" Line 158: Size mismatch in connection of port . Formal
=========================================================================
*                            HDL Synthesis                              *
=========================================================================
Synthesizing Unit .
    Related source file is "C:/Users/ALI/Desktop/New folder (2)/double recoding (2).v".
INFO:Xst:3210 - "C:/Users/ALI/Desktop/New folder (2)/double recoding (2).v" line 153: Output port  of the instance  is unconnected or connec
    Found 2-bit adder for signal  created at line 164.
    Found 2-bit adder for signal  created at line 165.
    Found 2-bit adder for signal  created at line 166.
    Summary:
        inferred   3 Adder/Subtractor(s).
Unit  synthesized.
Synthesizing Unit .
    Related source file is "C:/Users/ALI/Desktop/New folder (2)/double recoding (2).v".
    Found 16x3-bit Read Only RAM for signal <_n0028>
    Summary:
        inferred   1 RAM(s).
Unit  synthesized.
Synthesizing Unit .
    Related source file is "C:/Users/ALI/Desktop/New folder (2)/double recoding (2).v".
    Found 8x4-bit Read Only RAM for signal <_n0016>
    Summary:
        inferred   1 RAM(s).
Unit  synthesized.
=========================================================================
HDL Synthesis Report
Macro Statistics
# RAMs                                                 : 8
 16x3-bit single-port Read Only RAM                    : 4
 8x4-bit single-port Read Only RAM                     : 4
# Adders/Subtractors                                   : 3
 2-bit adder                                           : 3
=========================================================================
=========================================================================
*                       Advanced HDL Synthesis                          *
=========================================================================
Synthesizing (advanced) Unit .
INFO:Xst:3218 - HDL ADVISOR - The RAM  will be implemented on LUTs either because you have described an asynchronous read or because of curr
    ----------------------------------------------------------------------
    | ram_type           | Distributed                           |          |
    ----------------------------------------------------------------------
    | Port A                                                     |          |
    |     aspect ratio   | 16-word x 3-bit                       |          |
    |     weA            | connected to signal            | high     |      |
    |     addrA          | connected to signal <(X,Y)>           |          |
    |     diA            | connected to signal            |          |      |
    |     doA            | connected to internal node            |          |
    ----------------------------------------------------------------------
Unit  synthesized (advanced).
Synthesizing (advanced) Unit .
INFO:Xst:3218 - HDL ADVISOR - The RAM  will be implemented on LUTs either because you have described an asynchronous read or because of curr
    ----------------------------------------------------------------------
    | ram_type           | Distributed                           |          |
    ----------------------------------------------------------------------
    | Port A                                                     |          |
    |     aspect ratio   | 8-word x 4-bit                        |          |
    |     weA            | connected to signal            | high     |      |
    |     addrA          | connected to signal <(H,Z)>           |          |
    |     diA            | connected to signal            |          |      |
    |     doA            | connected to internal node            |          |
    ----------------------------------------------------------------------
Unit  synthesized (advanced).
=========================================================================
Advanced HDL Synthesis Report
Macro Statistics
# RAMs                                                 : 8
 16x3-bit single-port distributed Read Only RAM        : 4
 8x4-bit single-port distributed Read Only RAM         : 4
# Adders/Subtractors                                   : 3
 2-bit adder                                           : 3
=========================================================================
=========================================================================
*                         Low Level Synthesis                           *
=========================================================================
Optimizing unit  ...
Mapping all equations...
Building and optimizing final netlist ...
Found area constraint ratio of 100 (+ 5) on block sign_digit, actual ratio is 0.
Final Macro Processing ...
=========================================================================
Final Register Report
Found no macro
=========================================================================
=========================================================================
*                          Partition Report                             *
=========================================================================
Partition Implementation Status
-------------------------------
  No Partitions were found in this design.
-------------------------------
=========================================================================
```

```
*                           Design Summary                           *
========================================================================
Top Level Output File Name         : sign_digit.ngc
Primitive and Black Box Usage:
------------------------------
# BELS                             : 15
#      GND                         : 1
#      LUT4                        : 3
#      LUT5                        : 5
#      LUT6                        : 6
# IO Buffers                       : 26
#      IBUF                        : 17
#      OBUF                        : 9
Device utilization summary:
---------------------------
Selected Device : 7a100tcsg324-3
Slice Logic Utilization:
 Number of Slice LUTs:                  14  out of  63400     0%
    Number used as Logic:               14  out of  63400     0%
Slice Logic Distribution:
 Number of LUT Flip Flop pairs used:    14
   Number with an unused Flip Flop:     14  out of     14   100%
   Number with an unused LUT:            0  out of     14     0%
   Number of fully used LUT-FF pairs:    0  out of     14     0%
   Number of unique control sets:        0
IO Utilization:
 Number of IOs:                         26
 Number of bonded IOBs:                 26  out of    210    12%
Specific Feature Utilization:
---------------------------
Partition Resource Summary:
---------------------------
  No Partitions were found in this design.
---------------------------
========================================================================
Timing Report
NOTE: THESE TIMING NUMBERS ARE ONLY A SYNTHESIS ESTIMATE.
      FOR ACCURATE TIMING INFORMATION PLEASE REFER TO THE TRACE REPORT
      GENERATED AFTER PLACE-and-ROUTE.
Clock Information:
------------------
No clock signals found in this design
Asynchronous Control Signals Information:
-----------------------------------------
No asynchronous control signals found in this design
Timing Summary:
---------------
Speed Grade: -3
   Minimum period: No path found
   Minimum input arrival time before clock: No path found
   Maximum output required time after clock: No path found
   Maximum combinational path delay: 2.934ns
Timing Details:
---------------
All values displayed in nanoseconds (ns)
========================================================================
Timing constraint: Default path analysis
  Total number of paths / destination ports: 124 / 8
------------------------------------------------------------------------
Delay:               2.934ns (Levels of Logic = 6)
  Source:            A<3> (PAD)
  Destination:       result<7> (PAD)
  Data Path: A<3> to result<7>
                              Gate     Net
    Cell:in->out      fanout   Delay   Delay  Logical Name (Net Name)
    ----------------------------------------  ------------
     IBUF:I->O             4   0.001   0.570  A_3_IBUF (A_3_IBUF)
     LUT4:I0->O            3   0.097   0.305  HZ1/Mram__n002811 (H2)
     LUT5:I4->O            1   0.097   0.693  Madd_S3_lut<1>1 (Madd_S3_lut<1>)
     LUT6:I0->O            2   0.097   0.697  Madd_S3_lut<0>1 (result_6_OBUF)
     LUT6:I0->O            1   0.097   0.279  Madd_S3_xor<1>11 (result_7_OBUF)
     OBUF:I->O                 0.000          result_7_OBUF (result<7>)
    ----------------------------------------
    Total                      2.934ns (0.389ns logic, 2.546ns route)
                                       (13.3% logic, 86.7% route)
========================================================================
Cross Clock Domains Report:
---------------------------
========================================================================
Total REAL time to Xst completion: 10.00 secs
Total CPU time to Xst completion: 10.29 secs

-->
Total memory usage is 4625488 kilobytes
Number of errors   :    0 (   0 filtered)
Number of warnings :    2 (   0 filtered)
Number of infos    :    3 (   0 filtered)
```