**Synthesis Report**

**Wed Apr 15 01:21:40 2015**

---

```
Release 14.4 - xst P.49d (nt64)
Copyright (c) 1995-2012 Xilinx, Inc.  All rights reserved.
--> Parameter TMPDIR set to xst/projnav.tmp
Total REAL time to Xst completion: 0.00 secs
Total CPU time to Xst completion: 0.20 secs

--> Parameter xsthdpdir set to xst
Total REAL time to Xst completion: 0.00 secs
Total CPU time to Xst completion: 0.20 secs

--> Reading design: wallace.prj
TABLE OF CONTENTS
  1) Synthesis Options Summary
  2) HDL Parsing
  3) HDL Elaboration
  4) HDL Synthesis
       4.1) HDL Synthesis Report
  5) Advanced HDL Synthesis
       5.1) Advanced HDL Synthesis Report
  6) Low Level Synthesis
  7) Partition Report
  8) Design Summary
       8.1) Primitive and Black Box Usage
       8.2) Device utilization summary
       8.3) Partition Resource Summary
       8.4) Timing Report
            8.4.1) Clock Information
            8.4.2) Asynchronous Control Signals Information
            8.4.3) Timing Summary
            8.4.4) Timing Details
            8.4.5) Cross Clock Domains Report
================================================================================
*                      Synthesis Options Summary                               *
================================================================================
---- Source Parameters
Input File Name                    : "wallace.prj"
Ignore Synthesis Constraint File   : NO
---- Target Parameters
Output File Name                   : "wallace"
Output Format                      : NGC
Target Device                      : xc7a100t-3-csg324
---- Source Options
Top Module Name                    : wallace
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 "D:\NewProject\wallace.v" into library work
Parsing module .
Parsing module .
Parsing module .
Parsing module .
Parsing module .
=========================================================================
*                           HDL Elaboration                             *
=========================================================================
Elaborating module .
Elaborating module .
Elaborating module .
Elaborating module .
Elaborating module .
WARNING:HDLCompiler:1127 - "D:\NewProject\wallace.v" Line 189: Assignment to c ignored, since the identifier is never used
=========================================================================
*                           HDL Synthesis                               *
=========================================================================
Synthesizing Unit .
    Related source file is "D:\NewProject\wallace.v".
INFO:Xst:3210 - "D:\NewProject\wallace.v" line 189: Output port  of the instance  is unconnected or connected to loadless signal.
    Summary:
Unit  synthesized.
Synthesizing Unit .
    Related source file is "D:\NewProject\wallace.v".
    Summary:
Unit  synthesized.
Synthesizing Unit .
    Related source file is "D:\NewProject\wallace.v".
    Summary:
Unit  synthesized.
Synthesizing Unit .
    Related source file is "D:\NewProject\wallace.v".
    Summary:
        no macro.
Unit  synthesized.
Synthesizing Unit .
    Related source file is "D:\NewProject\wallace.v".
    Summary:
Unit  synthesized.
=========================================================================
HDL Synthesis Report
Macro Statistics
# Xors                                                : 115
 1-bit xor2                                          : 115
=========================================================================
=========================================================================
*                       Advanced HDL Synthesis                          *
=========================================================================
=========================================================================
Advanced HDL Synthesis Report
Macro Statistics
# Xors                                                : 115
 1-bit xor2                                          : 115
=========================================================================
=========================================================================
*                         Low Level Synthesis                           *
=========================================================================
Optimizing unit  ...
Mapping all equations...
Building and optimizing final netlist ...
Found area constraint ratio of 100 (+ 5) on block wallace, 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         : wallace.ngc
Primitive and Black Box Usage:
-------------------------------
# BELS                             : 119
#      LUT2                        : 29
#      LUT3                        : 4
#      LUT4                        : 16
#      LUT5                        : 15
#      LUT6                        : 55
# IO Buffers                       : 32
#      IBUF                        : 16
#      OBUF                        : 16
Device utilization summary:
```

```
-------------------------
Selected Device : 7a100tcsg324-3
Slice Logic Utilization:
 Number of Slice LUTs:                  119  out of  63400     0%
    Number used as Logic:               119  out of  63400     0%
Slice Logic Distribution:
 Number of LUT Flip Flop pairs used:    119
   Number with an unused Flip Flop:     119  out of    119   100%
   Number with an unused LUT:             0  out of    119     0%
   Number of fully used LUT-FF pairs:     0  out of    119     0%
   Number of unique control sets:         0
IO Utilization:
 Number of IOs:                          32
 Number of bonded IOBs:                  32  out of    210    15%
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: 7.815ns
Timing Details:
---------------
All values displayed in nanoseconds (ns)
=================================================================================
Timing constraint: Default path analysis
  Total number of paths / destination ports: 19965 / 16
---------------------------------------------------------------------------------
Delay:               7.815ns (Levels of Logic = 12)
  Source:            y<0> (PAD)
  Destination:       p<15> (PAD)
  Data Path: y<0> to p<15>
                              Gate     Net
    Cell:in->out      fanout   Delay   Delay  Logical Name (Net Name)
    ----------------------------------------  ------------
     IBUF:I->O            23   0.001   0.791  y_0_IBUF (y_0_IBUF)
     LUT6:I0->O            2   0.097   0.688  fa6/m1/o1 (s1<5>)
     LUT6:I1->O            3   0.097   0.566  sa5/m2/o1 (c2<5>)
     LUT4:I0->O            2   0.097   0.697  ta5/m1/o1 (s3<4>)
     LUT6:I0->O            4   0.097   0.697  foa4/m1/o1 (s4<3>)
     LUT6:I1->O            2   0.097   0.697  sia2/x1 (sia2/x)
     LUT6:I0->O            2   0.097   0.688  sia2/m2/o (c6<2>)
     LUT5:I0->O            3   0.097   0.521  sea2/cy1 (c7<2>)
     LUT5:I2->O            3   0.097   0.521  sea4/cy1 (c7<4>)
     LUT5:I2->O            2   0.097   0.697  sea6/cy1 (c7<6>)
     LUT6:I0->O            1   0.097   0.279  ha8/Mxor_s_xo<0>1 (p_15_OBUF)
     OBUF:I->O                 0.000          p_15_OBUF (p<15>)
    ----------------------------------------
    Total                      7.815ns (0.971ns logic, 6.844ns route)
                                       (12.4% logic, 87.6% route)
=================================================================================
Cross Clock Domains Report:
--------------------------
=================================================================================
Total REAL time to Xst completion: 22.00 secs
Total CPU time to Xst completion: 22.42 secs

-->
Total memory usage is 444228 kilobytes
Number of errors   :    0 (   0 filtered)
Number of warnings :    1 (   0 filtered)
Number of infos    :    1 (   0 filtered)
```