# Introduction

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| IP quick facts | |
| Supported device families | Zynq®-7000, 7 series |
| Supported user interfaces | Xilinx®: AXI4-Lite, AXI-Stream |
| **Provided with core** | |
| Design files | VHDL |
| Simulation model | VHDL Behavioral |
| Constraints file | XDC |
| Software driver | standalone |
| **Tested design flows** | |
| Design entry | Vivado™ HLS 2018.2 |
| Synthesis | Vivado Synthesis 2018.2 |

This user guide describes the Digilent Video Scaler Intellectual Property. It takes video frames of arbitrary resolution over a slave AXI-Stream interface, resizes them to an arbitrary output resolution and outputs on a master AXI-Stream interface. It has an AXI4-Lite interface for control.

# Features

* One pixel per beat
* 24-bit color depth
* RGB format
* Xilinx interfaces used: AXI4-Lite, AXI-Stream Port Descriptions

# Designing with the core

## Constraints

## Customization

# Register map

| Offset | Register Name | Description |
| --- | --- | --- |
| 0x00 | Control signals | bit 0 - ap\_start (Read/Write/COH)  bit 1 - ap\_done (Read/COR)  bit 2 - ap\_idle (Read)  bit 3 - ap\_ready (Read)  bit 7 - auto\_restart (Read/Write)  others - reserved |
| 0x04 | Global Interrupt Enable Register | bit 0 - Global Interrupt Enable (Read/Write) |
| 0x08 | IP Interrupt Enable Register (Read/Write) | bit 0 - Channel 0 (ap\_done)  bit 1 - Channel 1 (ap\_ready) |
| 0x0C | IP Interrupt Status Register (Read/TOW) | bit 0 - Channel 0 (ap\_done)  bit 1 - Channel 1 (ap\_ready) |
| 0x10 | Data signal of in\_width | bit 31~0 - in\_width[31:0] (Read/Write) |
| 0x18 | Data signal of in\_height | bit 31~0 - in\_height[31:0] (Read/Write) |
| 0x20 | Data signal of out\_width | bit 31~0 - out\_width[31:0] (Read/Write) |
| 0x28 | Data signal of out\_height | bit 31~0 - out\_height[31:0] (Read/Write) |

// (SC = Self Clear, COR = Clear on Read, TOW = Toggle on Write, COH = Clear on Handshake)

# Debugging

Opening the IP in HLS is possible by executing the following command in the Vivado HLS Command Prompt:

cd <path\_to\_IP>/hls\_src

vivado\_hls -f script.tcl

# References