

Cómo importar-exportar los pines en Quartus

Creador: David Rubio G.

Entrada: <https://soceame.wordpress.com/2025/01/14/como-importar-exportar-los-pines-en-quartus/>

Blog: <https://soceame.wordpress.com/>

GitHub: <https://github.com/DRubioG>

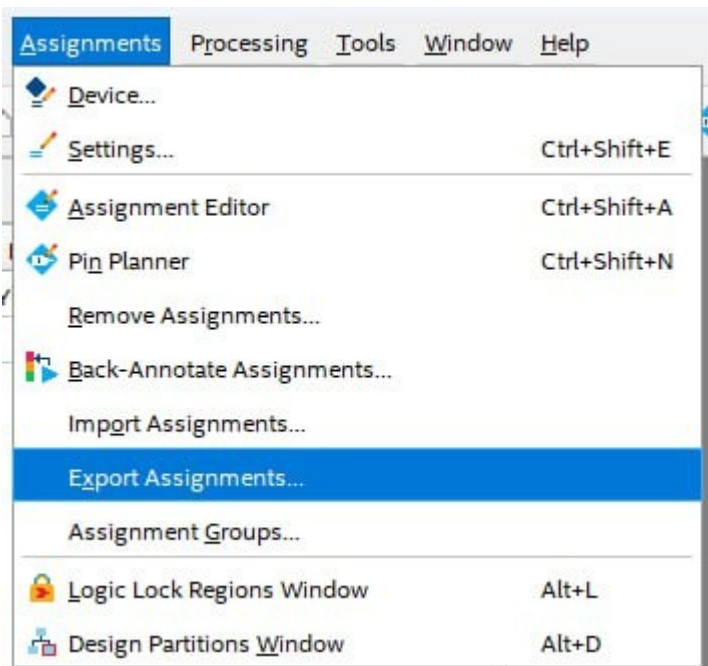
Fecha última modificación: 24/02/2025

Exportar fichero de pines

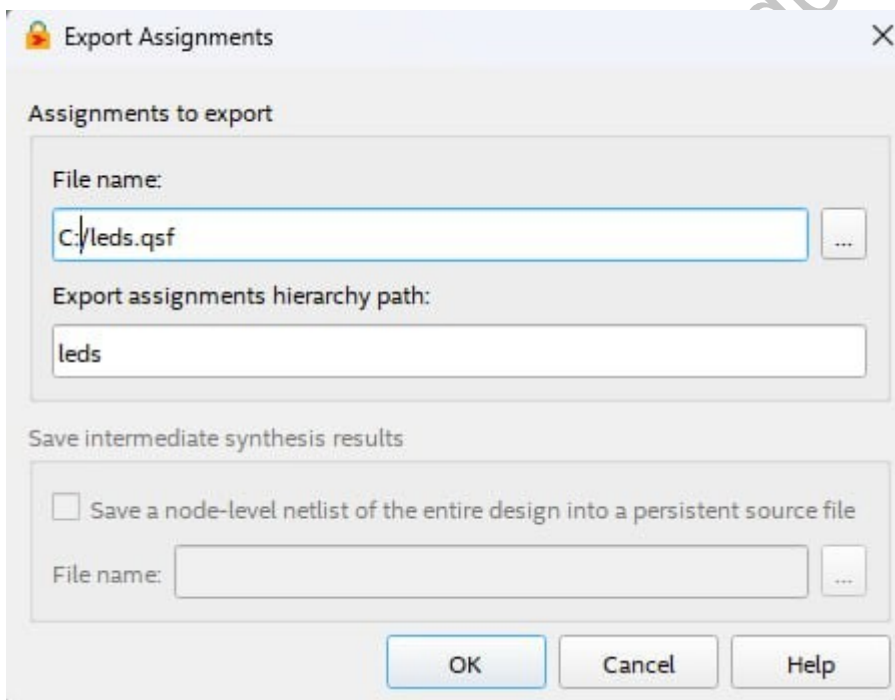
Lo primero que tienes que tener para poder exportar un fichero de pines es la configuración de los pines de la FPGA.

| Node Name | Direction | Location | I/O Bank | VREF Group | I/O Standard | Reserved | Current Strength | Slew Rate | Different |
|--------------|-----------|----------|----------|------------|--------------|----------|------------------|-------------|-----------|
| clk | Input | PIN_G1 | 1 | B1_N2 | 3.3-V LVTTTL | | 8mA (default) | | |
| led[3] | Output | PIN_V10 | 3 | B3_N1 | 3.3-V LVTTTL | | 8mA (default) | 2 (default) | |
| led[2] | Output | PIN_U9 | 3 | B3_N2 | 3.3-V LVTTTL | | 8mA (default) | 2 (default) | |
| led[1] | Output | PIN_V9 | 3 | B3_N1 | 3.3-V LVTTTL | | 8mA (default) | 2 (default) | |
| led[0] | Output | PIN_V8 | 3 | B3_N2 | 3.3-V LVTTTL | | 8mA (default) | 2 (default) | |
| rst_n | Input | PIN_P4 | 2 | B2_N1 | 3.3-V LVTTTL | | 8mA (default) | | |
| <<new node>> | | | | | | | | | |

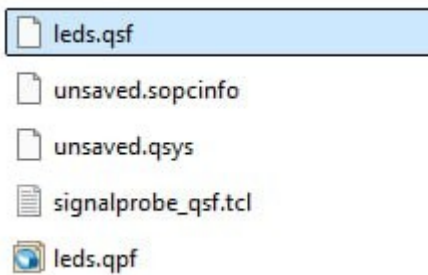
Una vez la tengas, vuelves a Quartus y en *Assignments* tienes la opción de *Export Assignments...*



Luego te pide un nombre para el archivo QSF.



Cuando terminas tendrás un nuevo fichero .qsf.

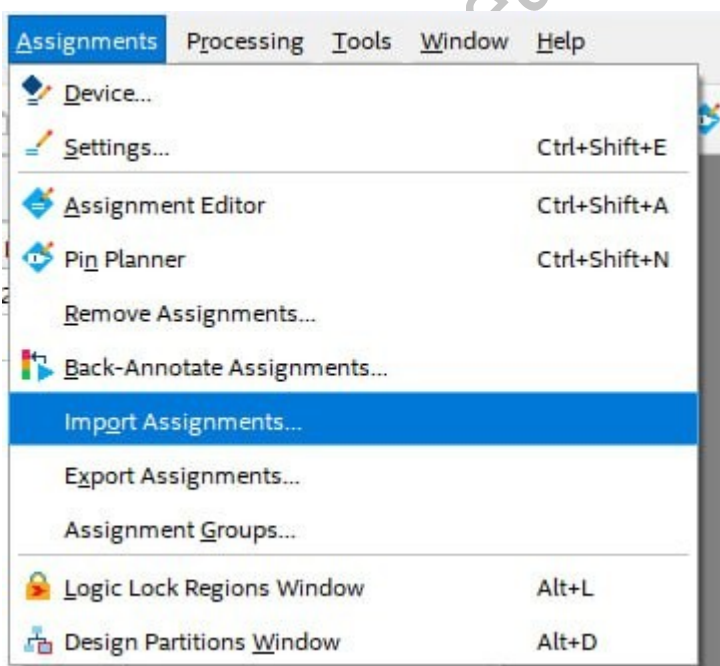


Ahora si miramos el fichero QSF aparecen los pines utilizados.

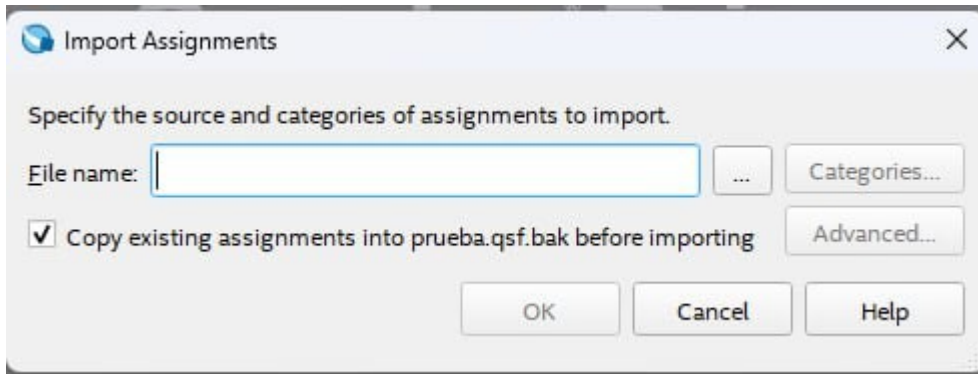
```
set_global_assignment -name PARTITION_NETLIST_TYPE POST_FIT -section_id Top
set_global_assignment -name PARTITION_FITTER_PRESERVATION_LEVEL PLACEMENT_AND_ROUTING -section_id Top
set_global_assignment -name PARTITION_COLOR 16764057 -section_id Top
set_location_assignment PIN_G1 -to clk
set_location_assignment PIN_V10 -to led[3]
set_location_assignment PIN_U9 -to led[2]
set_location_assignment PIN_V9 -to led[1]
set_location_assignment PIN_V8 -to led[0]
set_location_assignment PIN_P4 -to rst_n
set_instance_assignment -name IO_STANDARD "3.3-V LVTTTL" -to clk
set_instance_assignment -name IO_STANDARD "3.3-V LVTTTL" -to led[3]
set_instance_assignment -name IO_STANDARD "3.3-V LVTTTL" -to led[2]
set_instance_assignment -name IO_STANDARD "3.3-V LVTTTL" -to led[1]
set_instance_assignment -name IO_STANDARD "3.3-V LVTTTL" -to led[0]
set_instance_assignment -name IO_STANDARD "3.3-V LVTTTL" -to led
set_instance_assignment -name IO_STANDARD "3.3-V LVTTTL" -to rst_n
```

Importar fichero de pines

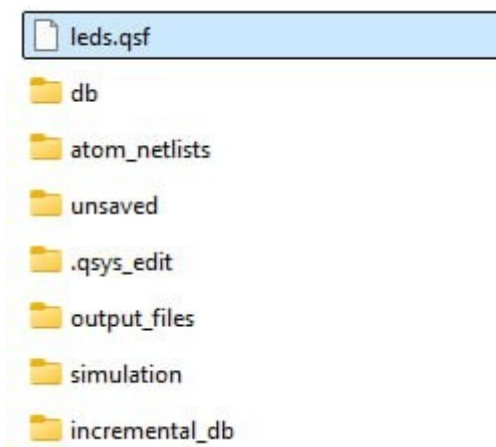
Para importar un fichero de pines en Quartus, vamos a *Assignments* y después a *Import Assignments*.



Nos pregunta por el fichero de pines.



Le entregamos un .qsf



Y al terminar si entramos en el *Pin Planner* podemos ver como los pines se han asignado en el proyecto.

Top View - Wire Bond
Cyclone V - 5CGXFC7C7F23C8

Pin Legend

- User I/O
- User assigned I/O
- Fitter assigned I/O
- Unbonded pad
- Reserved pin
- DEV_OE
- DIFF_n
- DIFF_p
- DIFF_n output
- DIFF_p output
- DQ
- DQS
- DQSB
- CLK_n
- CLK_p
- GX_X*n
- GX_X*p
- Other PLL
- MSEL0
- MSEL1
- MSEL2

| Node Name | Direction | Location | I/O Bank | VREF Group | I/O Standard | Reserved | Current Strength | Slew Rate | Different |
|--------------|-----------|----------|----------|------------|--------------|----------|------------------|-----------|-----------|
| clk | Unknown | PIN_G1 | B1L | | 3.3-V LVTTTL | | 16mA (default) | | |
| led[3] | Unknown | PIN_V10 | 3B | B3B_N0 | 3.3-V LVTTTL | | 16mA (default) | | |
| led[2] | Unknown | PIN_U9 | | | 3.3-V LVTTTL | | 16mA (default) | | |
| led[1] | Unknown | PIN_V9 | 3B | B3B_N0 | 3.3-V LVTTTL | | 16mA (default) | | |
| led[0] | Unknown | PIN_V8 | | | 3.3-V LVTTTL | | 16mA (default) | | |
| rst_n | Unknown | PIN_P4 | | | 3.3-V LVTTTL | | 16mA (default) | | |
| led | Unknown | | | | 3.3-V LVTTTL | | 16mA (default) | | |
| <<new node>> | | | | | | | | | |

NOTA FINAL

Los ficheros QSF incorporan mucha más información como los nodos internos o las configuraciones de depuración.