



*User manual Version 1.11/2020*

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## Changelog

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20-07-2017 V.0.30: added firewall settings (appendix 3)

20-09-2017 V.1.00: revised screen layout

28-09-2017 V.1.01: fixed some link errors

09-04-2018 V1.02: Release 1.4 – floating license – adaptive slicing – new advanced features – multi material prints

09-05-2018 V1.03: added print server configuration utility

18-05-2018 V1.04: changed static IP addresses

22-05-2018 V1.05: removed manual control

09-07-2018 V1.06: Firewall details

06-08-2018 V1.07: More details on floating licenses

20-12-2019 V1.08: New layout, Server farm, https ports, minor updates

13-01-2020 V1.09: Minor corrections

16-04-2020 V1.10: Added report screenshot

01-06-2020 V1.11: New picture at page 59 (interlaced num loops)

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*Don't print this document. save paper, trees and money!*

*This document is best used as a live document on any device (smartphone, tablet, pc) – the hyperlinks on the text make browsing faster and useful!*

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# Going additive in five easy steps

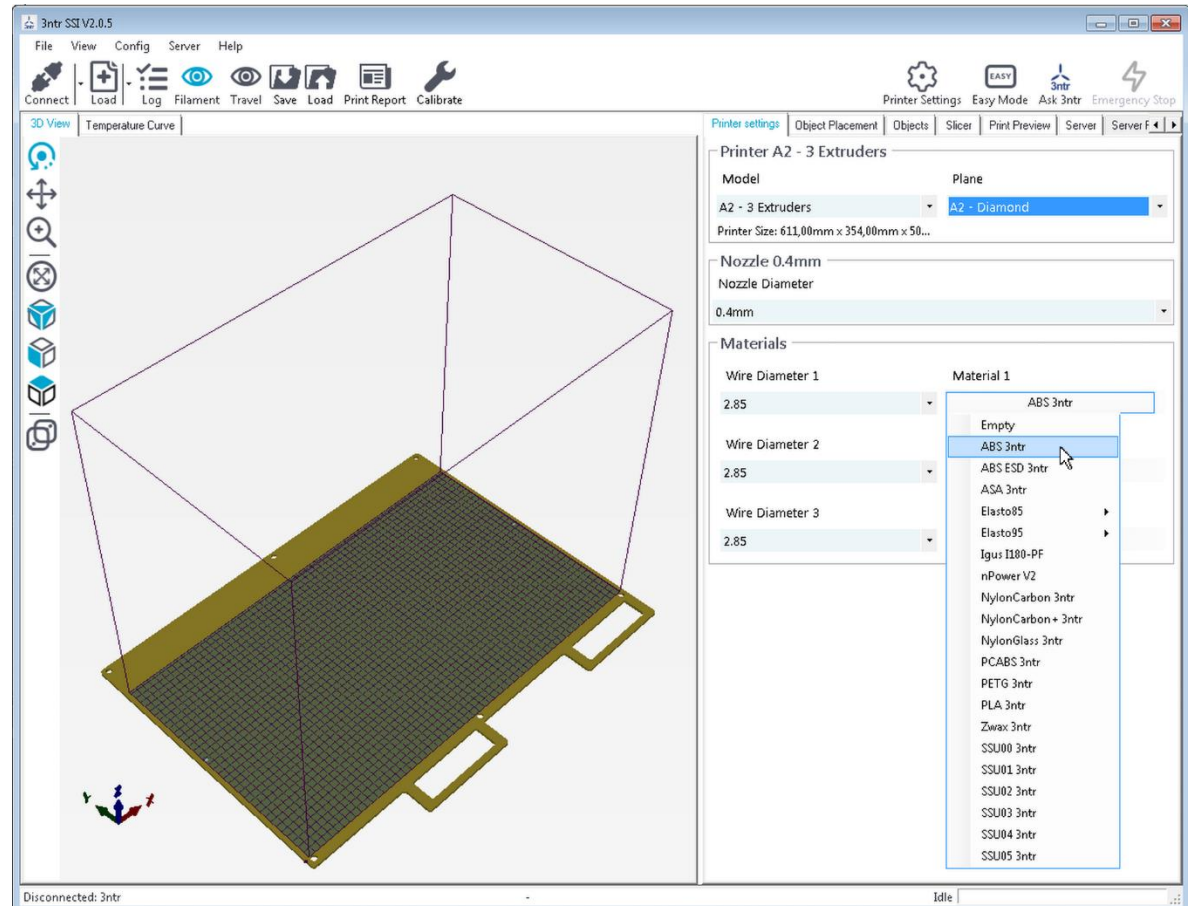
After setting [Appendix 2](#) – Printer connection and printer type, you can start printing with few mouse clicks!

## 1 – Check printer settings

Be sure that printer model, plate and filament loaded on machine are matching your SSI setting.

If unsure CHECK IT FOR SURE!

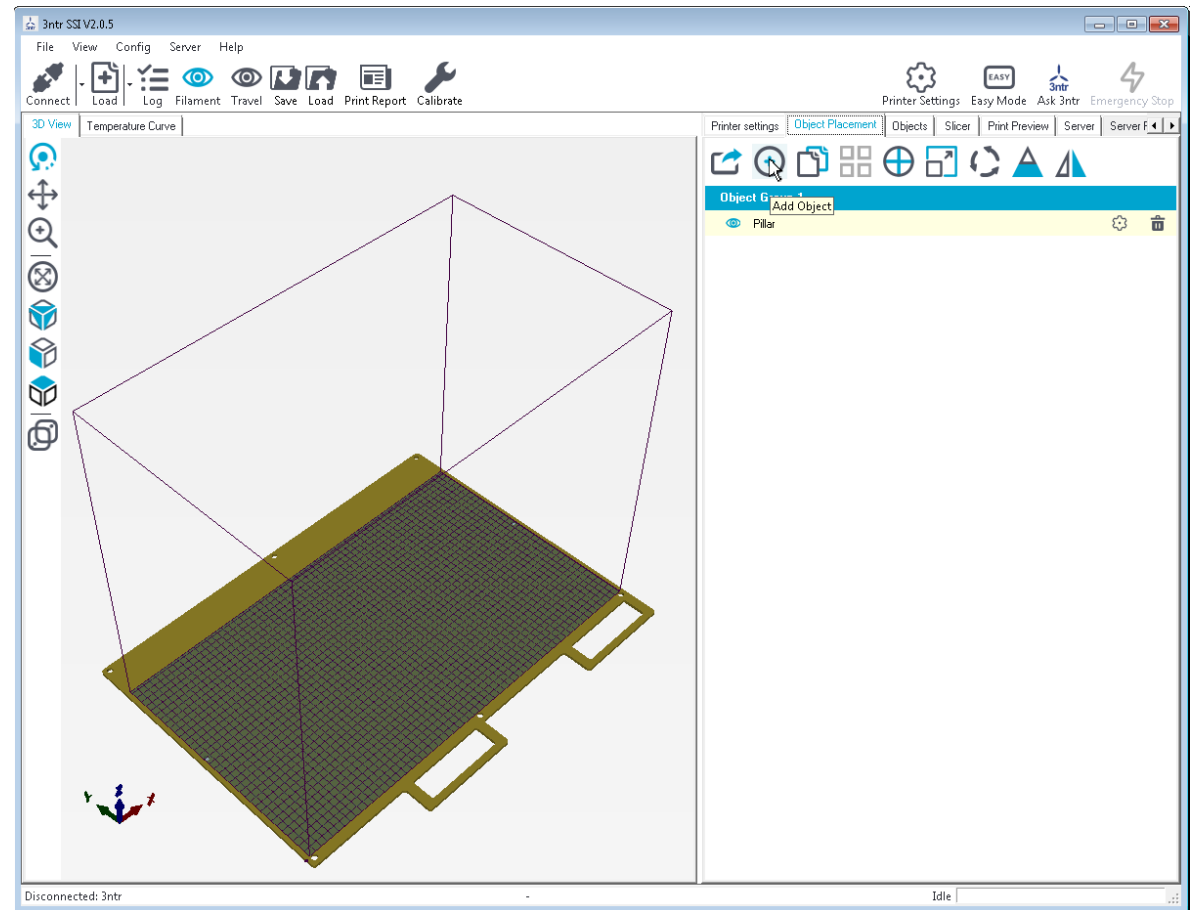
A mis-configured print job can easily waste time and money – you can't recover a mistaken print!



1 polymer chooser

## 2 – Choose the geometry to print

Load and position the parts to print on machine plate on screen.  
Take your time to place them in an efficient way!

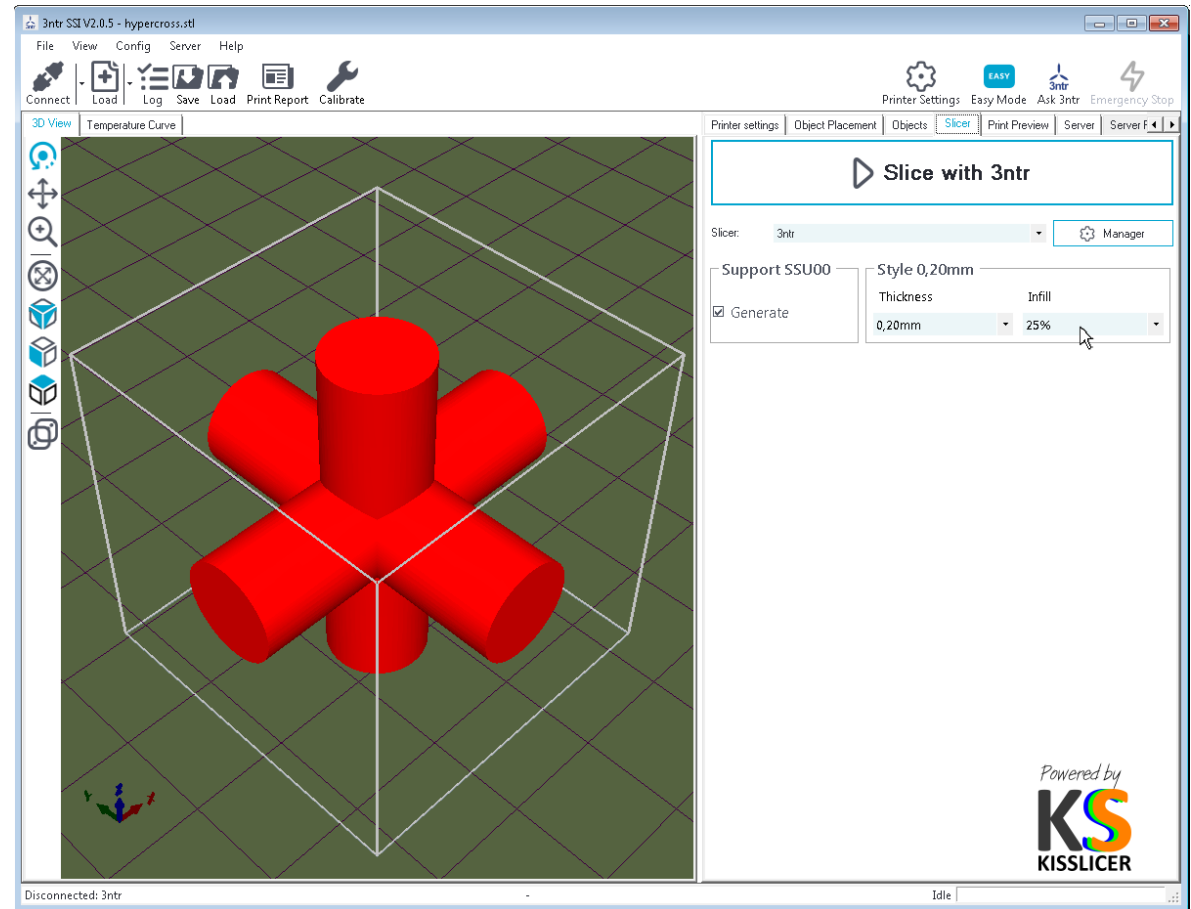


2 Add object



### 3 – Print style

Now you must choose if you want support structures, layer thickness (the thinner they are, the higher the quality) and infill amount.

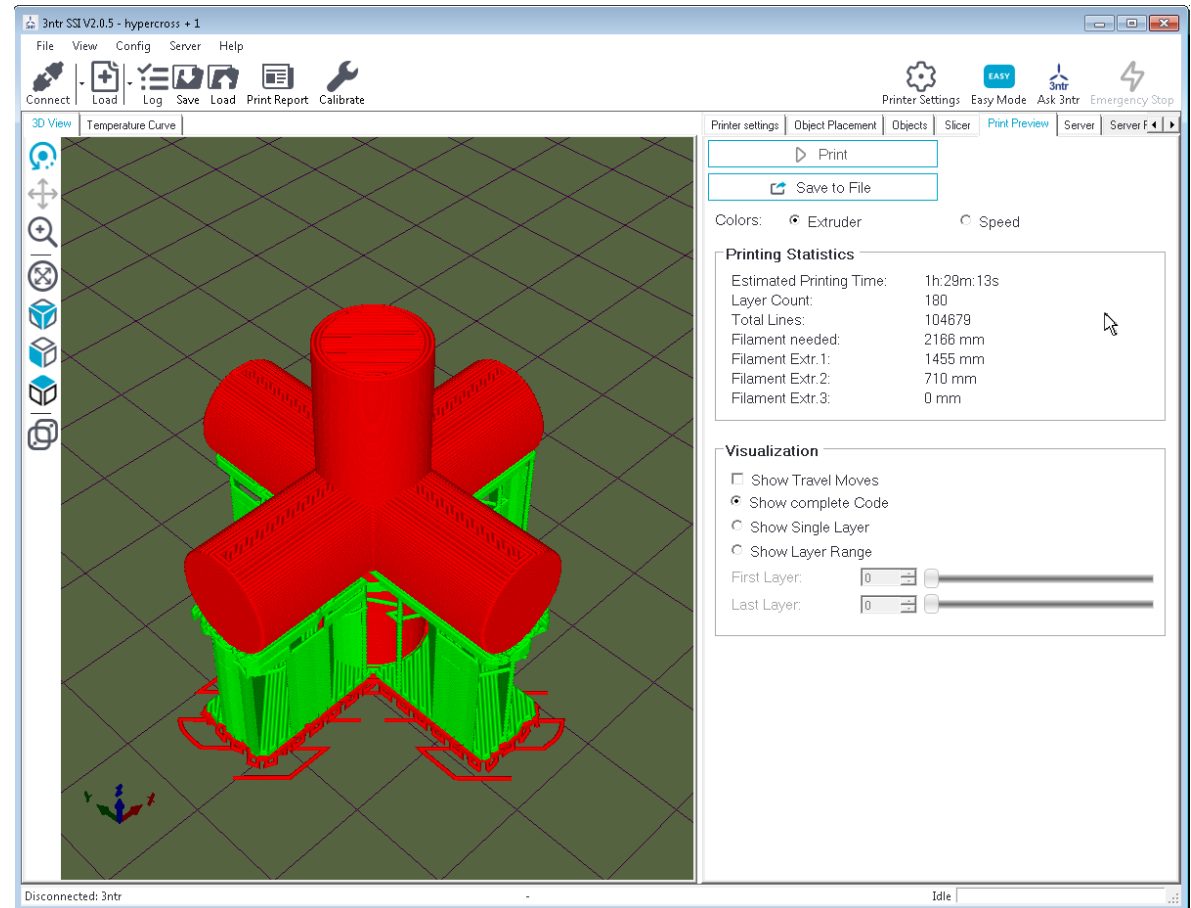


3 Print style

## 4 - Gcode generation

At this point you can create the file with the instructions to be sent to the printer (GCODE) and verify that video preview matches the desired results.

If you don't find problems, connect to the printer (with the CONNECT icon top left) and start the print process with the PRINT button.



4 Slicing done!

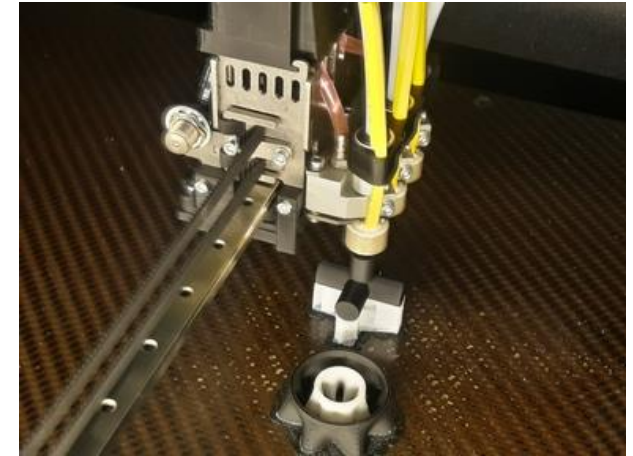
## 5 – Print it!

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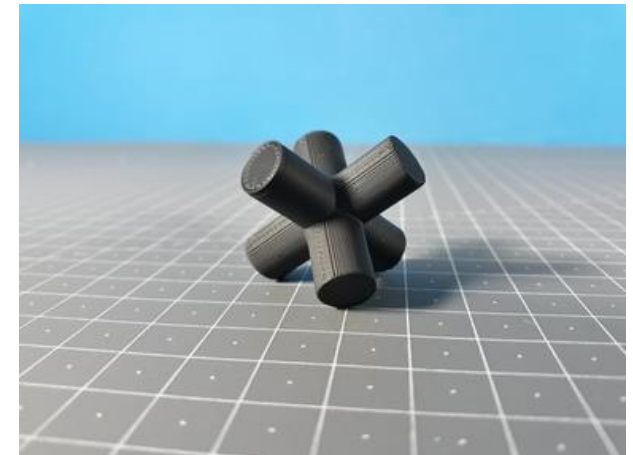
Print process is therefore started, preparing the part with the chosen settings.

Depending on polymers used and support strategy, you will get a part that need mechanical or chemical (into water-based solution) support removal.

At the end, you will get the desired part!



*5 Printing*

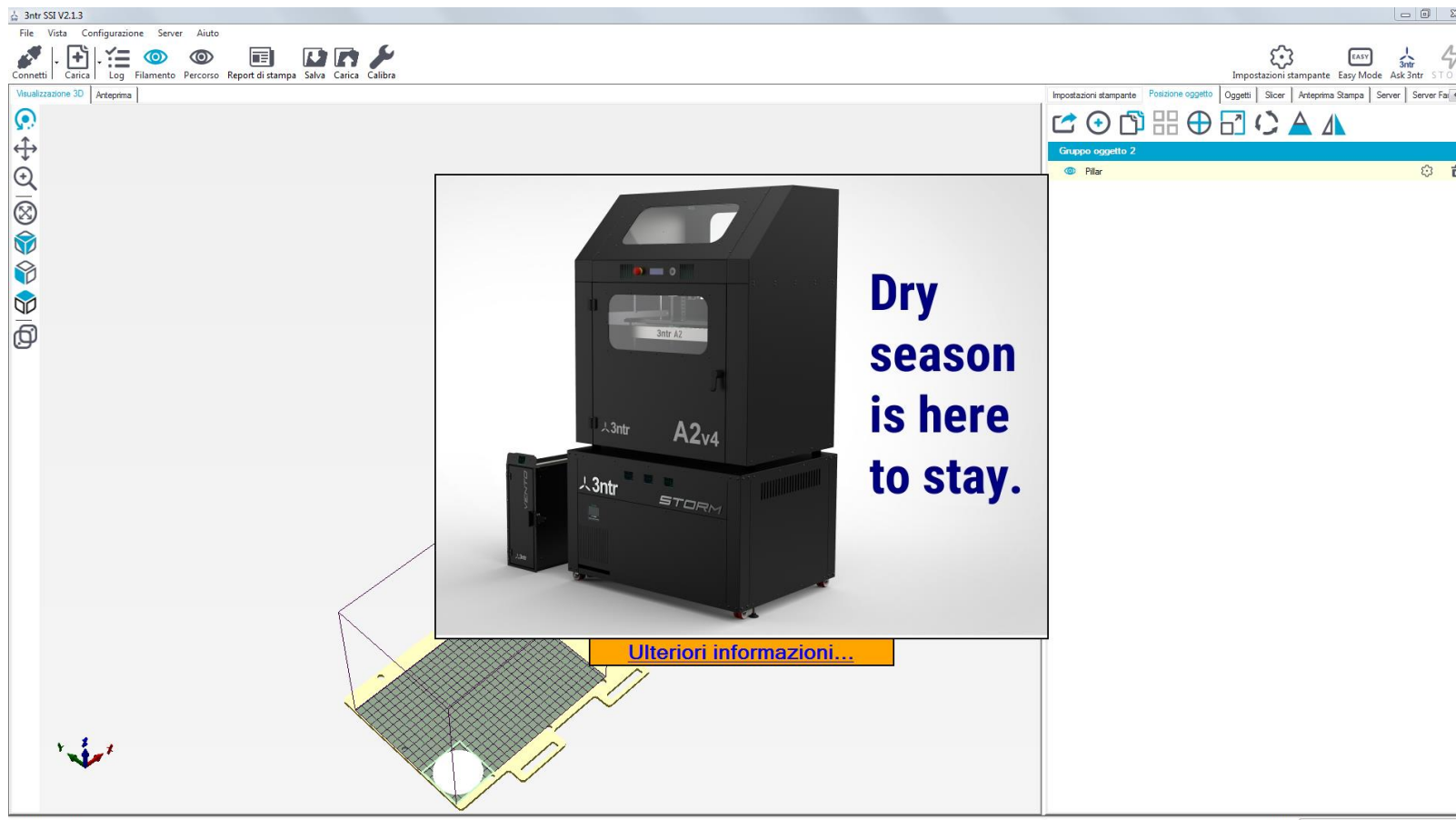


*6 Part printed - support removed*

## SSI user guide

If correctly configured, Ssi will connect to 3ntr servers every time the software is run to check for updates.

After the update / checking process the “pic of the day” will be shown close it with the white cross on red background (top right of the image) to start using the program. Under the “pic of the day” there is a hyperlink to a content related: click on it (yellow background) to know more!

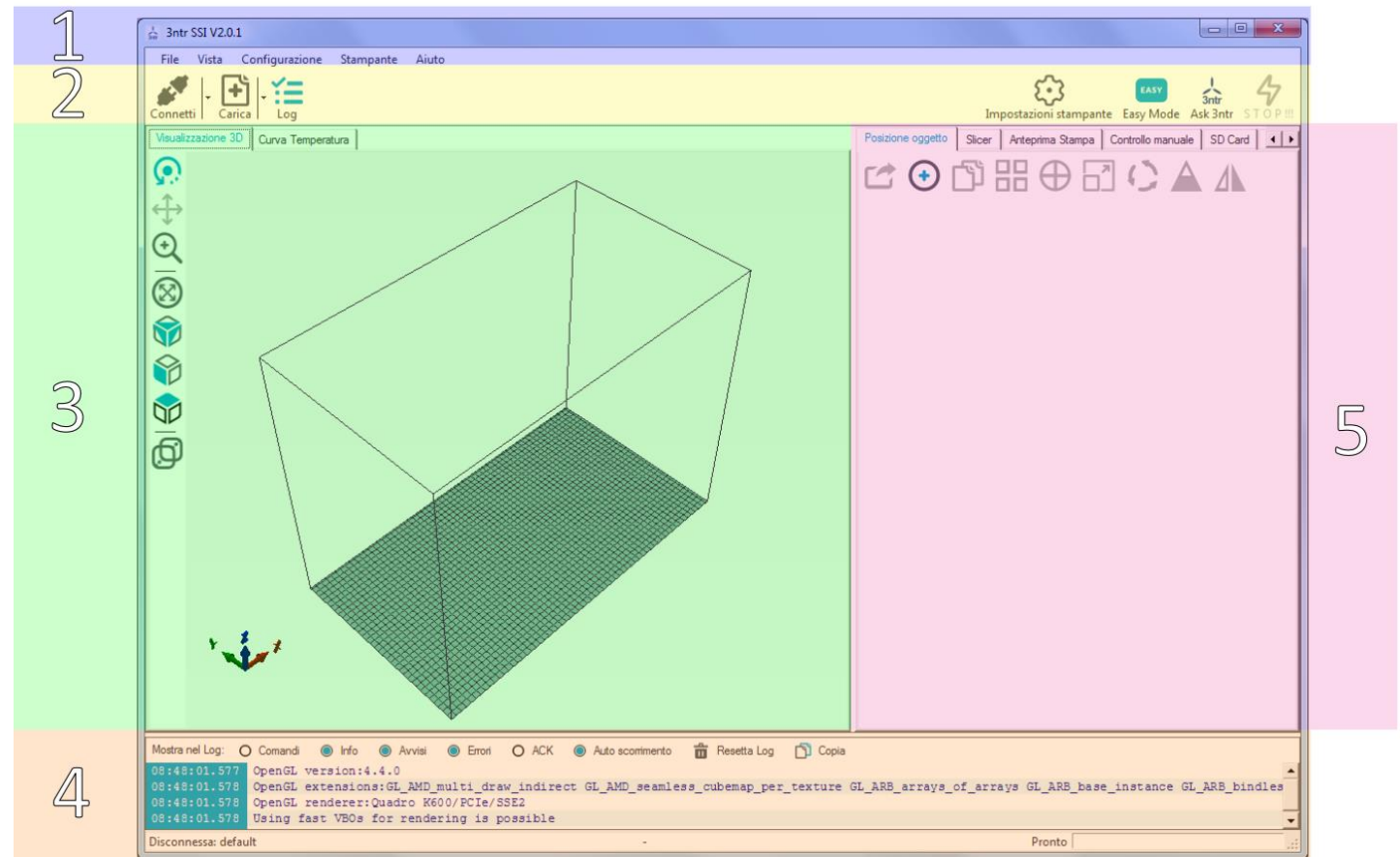


7 SSI splash screen

## Screen areas

We divide ideally the screen into five areas:

1. [Menu bar](#)
2. [Left Tool bar / Right toolbar](#)
3. [Visualization area](#)
4. [Log](#)
5. [Tabs](#)



8 Screen areas

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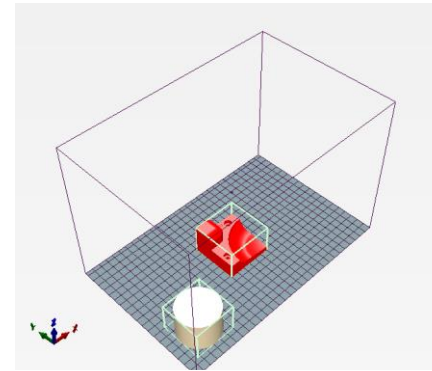
- 3ntr SSI V2.0.5
- File View Config Server Help

## 9 Menu bar

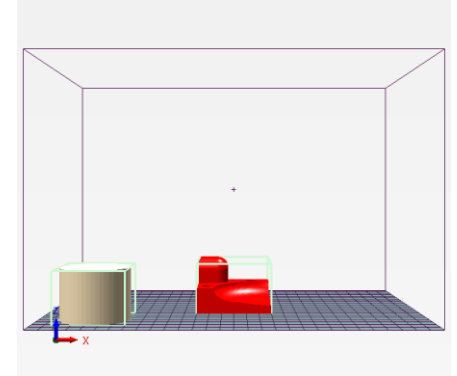
- Load (ctrl+O): to open a GCODE file (printing instruction to be sent to the machine) or an STL part to be placed on the printing plate
- Save screenshot: save on disk a copy of the visualization area
- Show work directory (alt+W): used for debugging upon 3ntr assistance request.
- (last opened files)
- (last opened files)
- Quit: stop program

## View

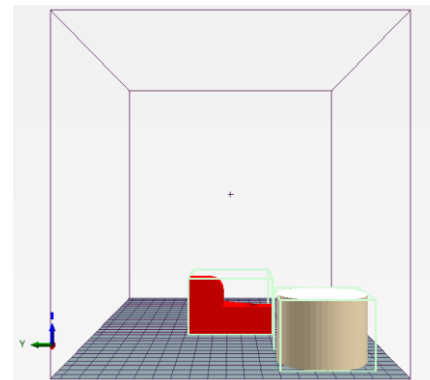
- Isometric view (moves the point of view to the front left upper corner)
- Front view
- Left view
- Right view
- Back view
- Top view
- Bottom view
- Fit printer (F4): fit view to entire print area
- Fit objects (F5): fit view on parts to be printed
- Show edges - (Ctrl-E) part edges are shown highlighted (you can change the color with ALT+P)
- Show faces – (Ctrl-F) part faces are shown with the default color ( you can change the color with ALT+P)
- Show compass – (Alt -C) shows the XYZ indicator bottom left into 3d view
- Enable/disable printer ID – (Ctrl-I) to visualize printer name above tabs



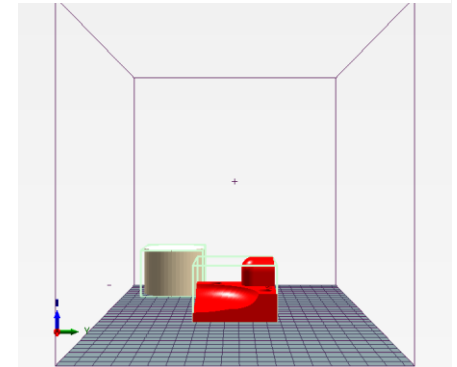
10 Isometric view



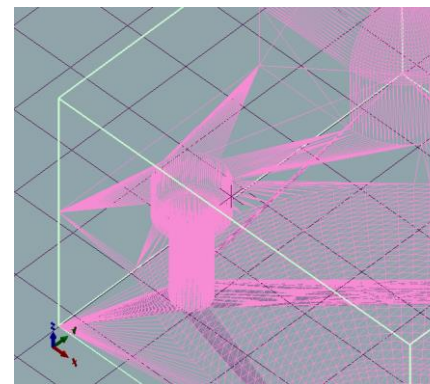
11 Front view



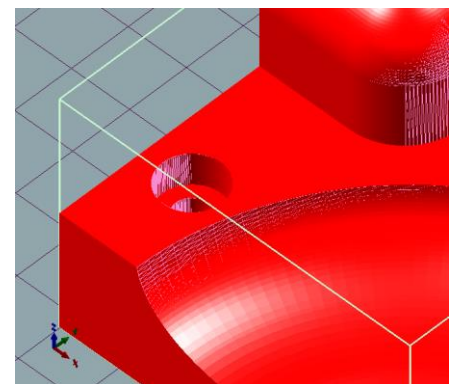
13 Left view



12 Right view



15 Edges ON faces OFF



14 Edges ON faces ON



- Language: choose you interface locale
- Printer setting (Ctrl+P) : change the printer connection properties (same as button on the toolbar)
- Units of imported objects: choose the unit of measure for the models you are going to deal with (millimeters, inches, feet, meters)
- Preferences (Alt+P)

Will open a dialog screen to let you customize many parts of your install.

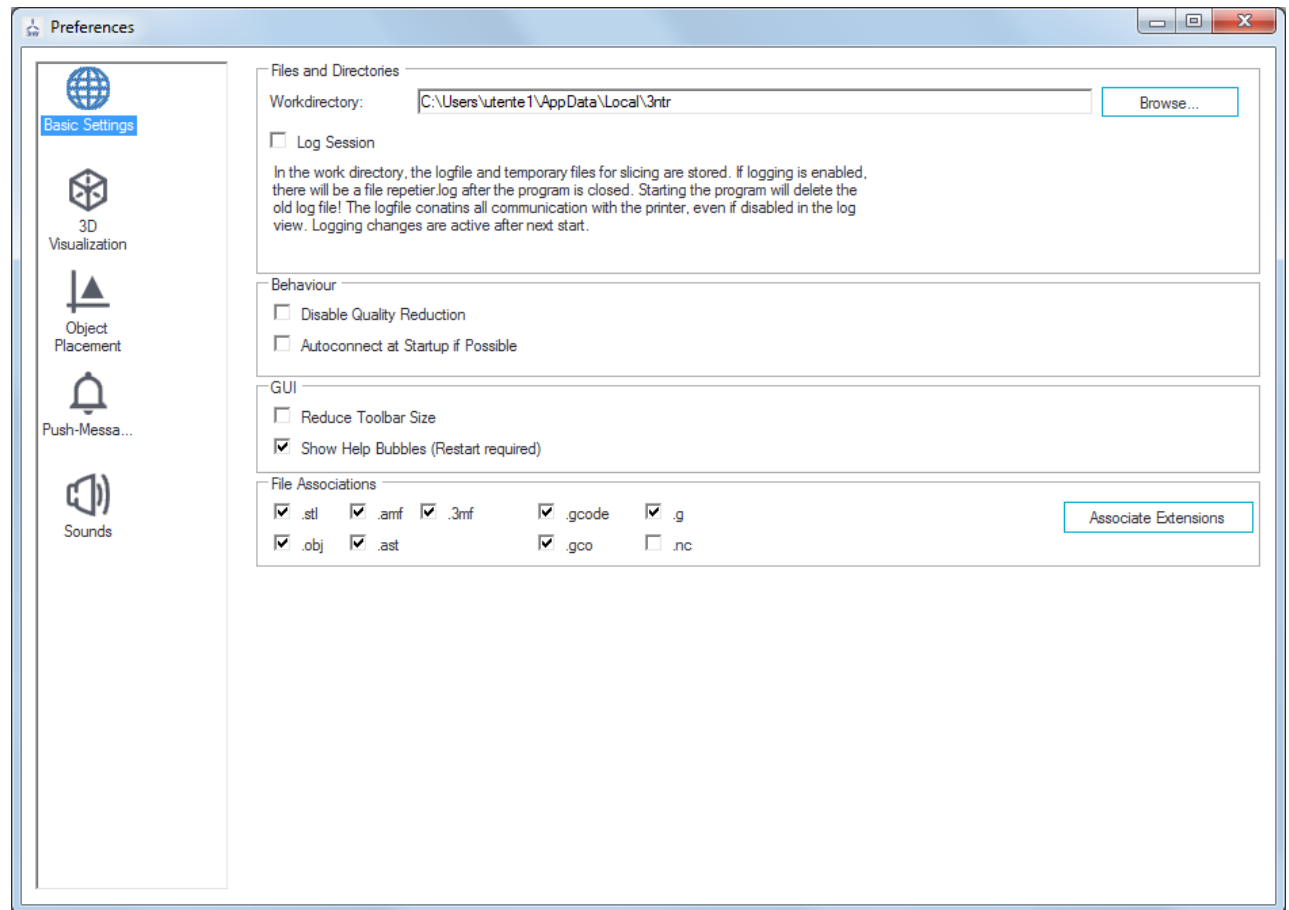
Use this function ONLY if you are ABSOLUTELY SURE about what you are going to change and the logic behind it: you could compromise your installation.

You will be given five main choices

- [Base settings](#)– usually you don't need to alter values into this part (some of those parameters are critical)
  - [3D visualization](#)–to customize your visual experience
  - [Object placement](#)– some minor options about part placement on work area
  - [Push messages](#)– interfacing SSI with outside world
  - [Sounds](#)– if you want to hear (literally) when something is happening
- Shutdown windows after print: turns off PC after print is completed.

Usually you don't need to alter values into this part (some of those parameters are critical)

- Work directory: where SSI saves temporary files. DON'T change this – deal with this ONLY if asked you to do so by 3ntr assistance.
- Log session: let this disabled. It saves debugging instructions – don't alter it (it will slow down a lot your system) unless asked you by 3ntr customer support/assistance
- Disable quality reduction. Diagnostic setting - don't alter it (it will slow down a lot your system) unless asked you by 3ntr customer support/assistance
- Autoconnect at startup: ticking this option will start SSI when you boot your PC.
- Reduce toolbar size: on small PC screen helps getting better visualization
- Show help bubbles: usually enabled. Moving the mouse pointer over any place you can get help text popping out
- File associations: which file types will be associated to SSI. Press "Associate extensions" to confirm

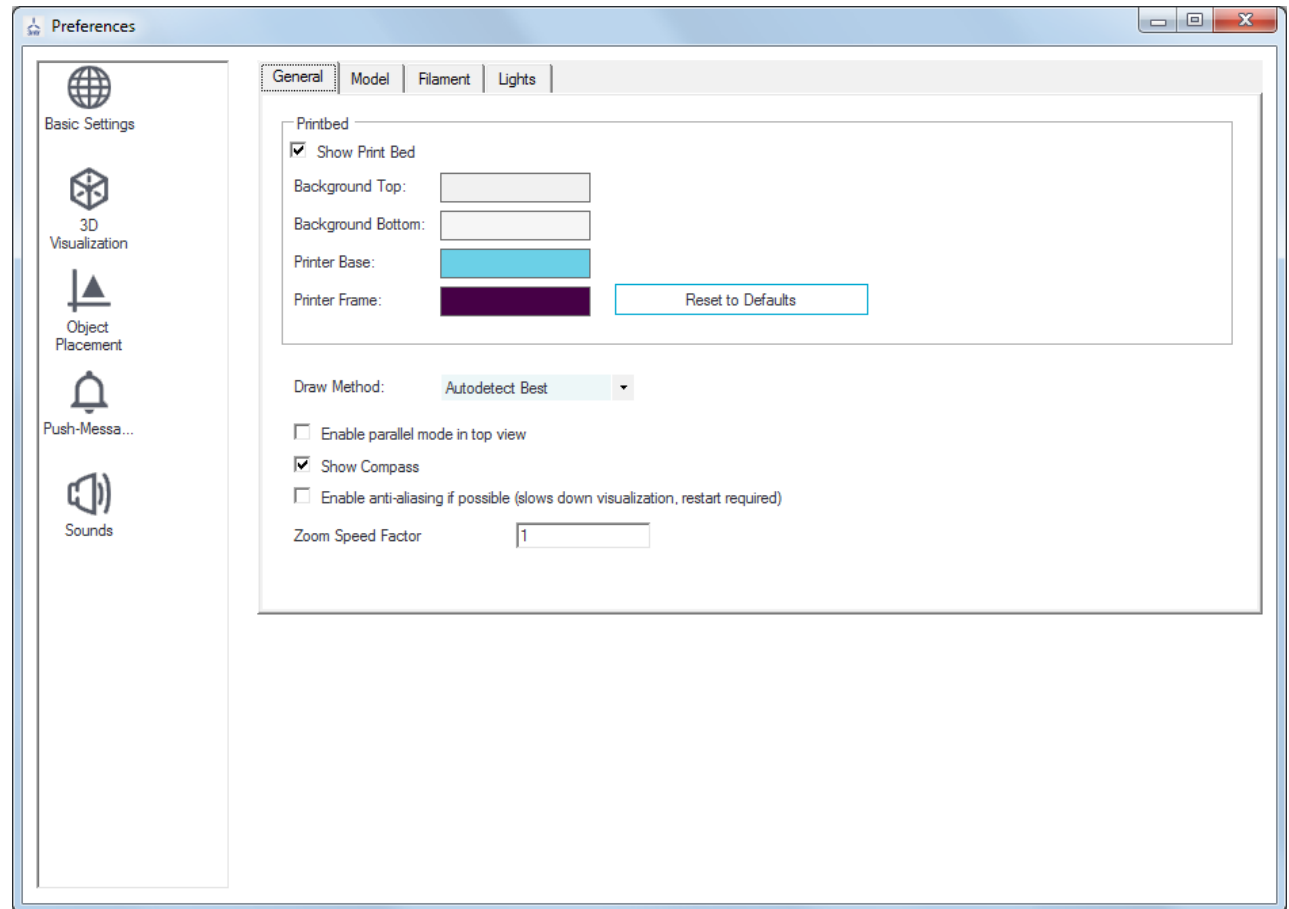


16 Preferences – basic settings

All the settings on this page can be freely modified to get custom visual experience

## GENERAL tab

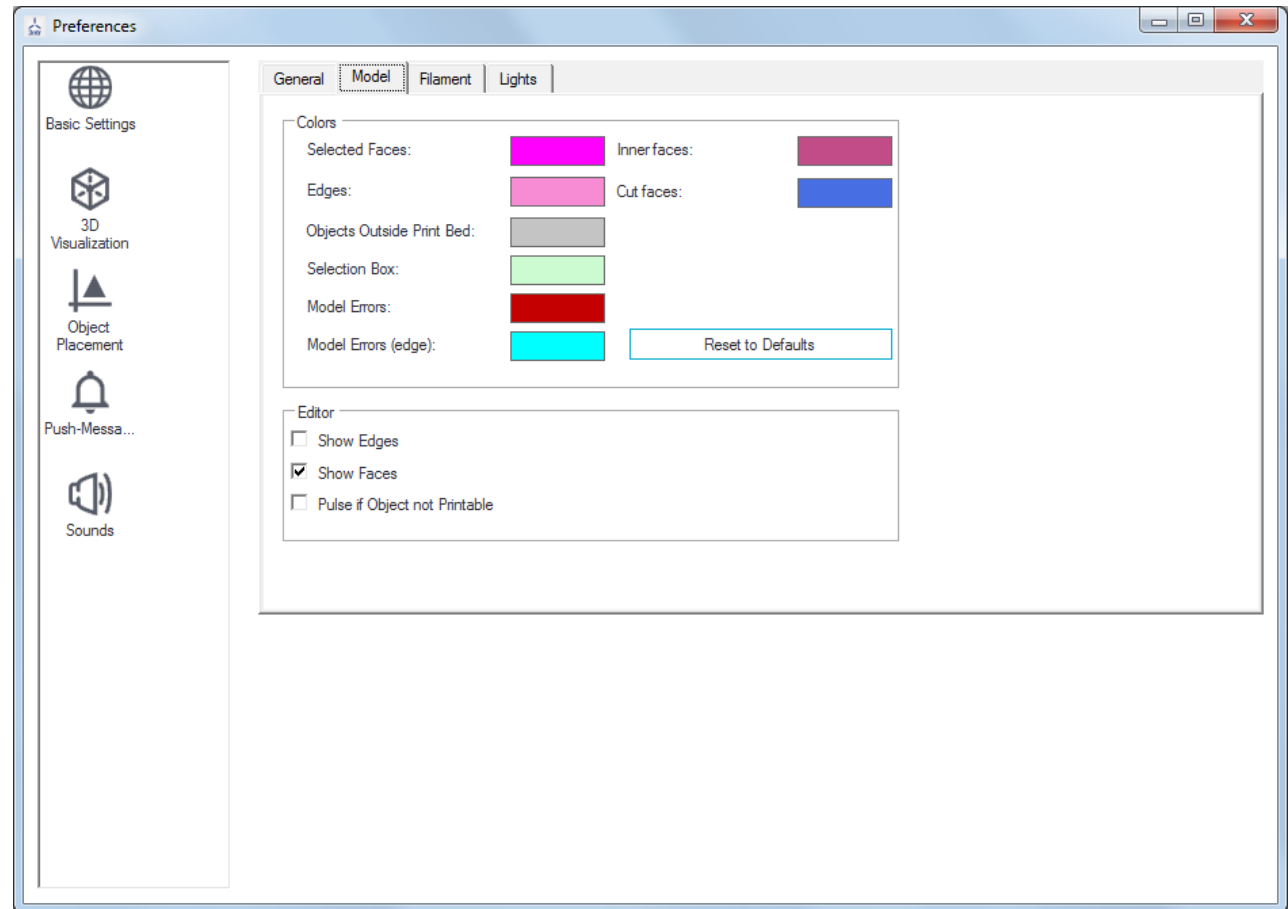
- Show print bed (enabled by default): show print area visualization – the fundamental to get correct part placement
- Background top/bottom/base/frame: visualization colors, reverting to default with the reset button
- Draw method: on standard installation you can simply ignore this
- Enable parallel mode on top view: to get a drawing-like sight on top view
- Show compass: enable XYZ arrows into 3D visualization area
- Enable anti aliasing: improves visual experience, but very demanding on some systems
- Zoom speed factor: usually set to 1. Higher values are getting faster zoom/pan



17 Preferences- general

In this section you can decide to alter all visualization hues during object placement. You can revert any time to defaults with the reset button.

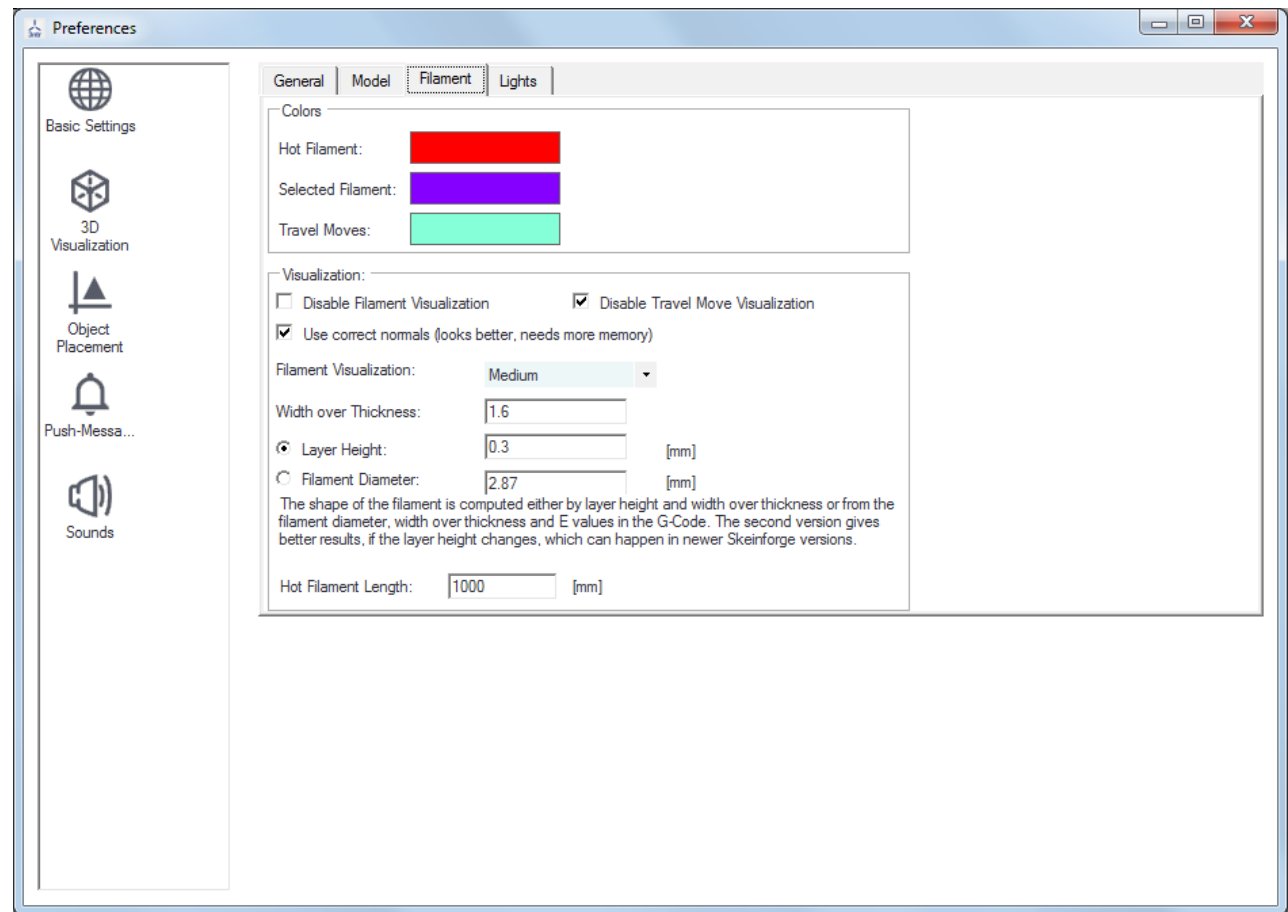
- Colors (....)
- Show edges – enable edge highlighting (default: disabled)
- Show faces – (default: enabled)
- Pulse if object is not printable (default: disabled)



18 Preferences - Model

This is the section to change color of the print preview

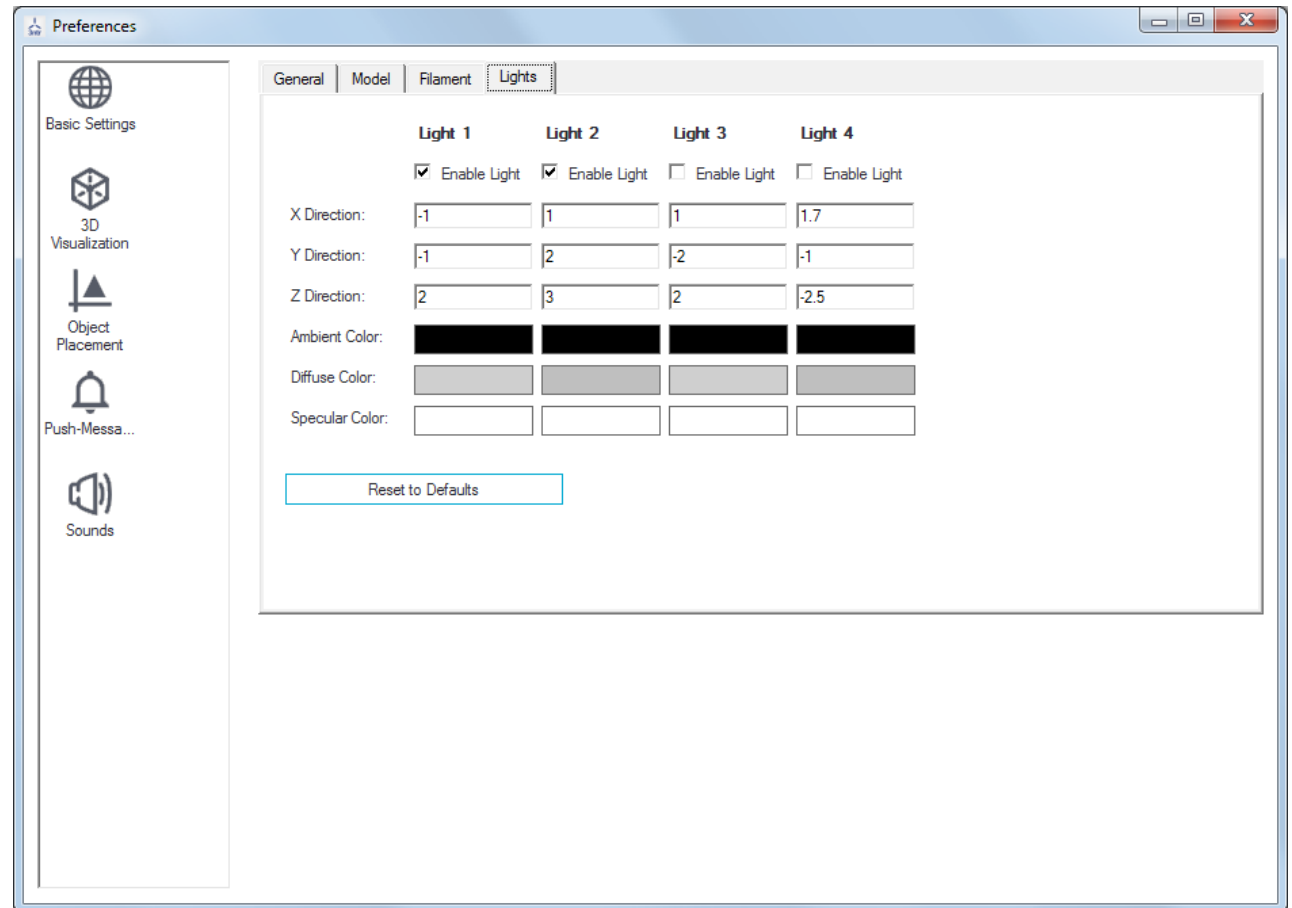
- Hot filament
- Selected filament
- Travel moves
- Disable filament visualization (default off – enabling would prevent visualization)
- Disable travel move: enabled by default, to avoid screen clutter
- Use correct normals: enabled by default, to get good quality rendering. Disable this to gain some speed on older PCs.
- Filament visualization (degree of precision): the default is “MEDIUM”. If your PC is too old gain some speed changing this setting to “Simple”
- Width over thickness: 1.6 is the default value, that you shouldn't be changing
- Layer height: if enabled, this is the average value for screen rendering (DOESN'T DEAL WITH 3D PRINT QUALITY)
- Filament diameter: if enabled, this is the average value for screen rendering (DOESN'T DEAL WITH 3D PRINT QUALITY)
- Hot filament length: how long is the extrusion affected by cooling during print preview



19 Preferences- Filament

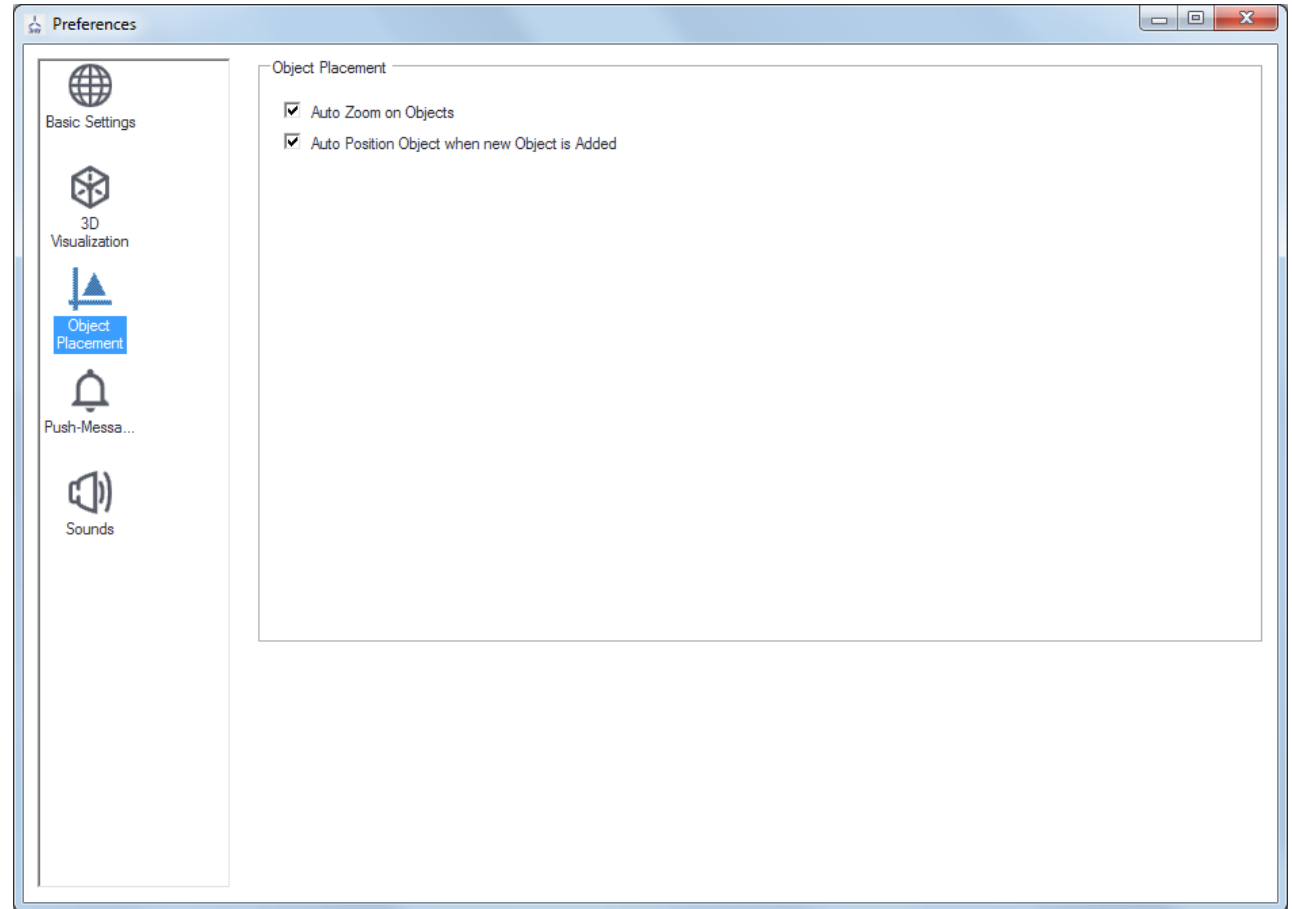
You can enable up to four virtual lights to render your print preview.  
For each one you can specify:

- Direction X / Y / Z
- Ambient color
- Diffuse color
- Specular color
- Should you feel lost, there is a handy “Reset” button



20 Preferences- Lights

- Auto zoom on objects: enabled by default, to automatically zoom onto available objects
- Auto position: enabled by default, SSI will find the best placement when you position any object on the bed.



21 Preferences - Object placement

## Push messages

This section enables the push messaging on Android or Apple smartphones upon selectable events. To enable this option you must install the suitable app available online (a small fee is requested).

- Activate push-messages enables this functionality
- Host name (optional): assign a name to this PC running SSI
- Informer group: create a group on your smartphone then insert here the same name
- URL: if you got a webcam, insert here its IP number (a picture will be sent along any message)
- Send messages for those events (choose which events will cause a push message). Progress message can be sent every chosen interval (set it with a drop down list)
- Scanning the provided QR code with your smartphone will start installation of the app – the provided button will open a browser on Repetier Informer website

The screenshot shows the 'Preferences' window for Repetier-Informer. On the left is a sidebar with icons for 'Basic Settings', '3D Visualization', 'Object Placement', 'Push-Message s' (highlighted), and 'Sounds'. The main area is titled 'Repetier-Informer' and contains the following sections:

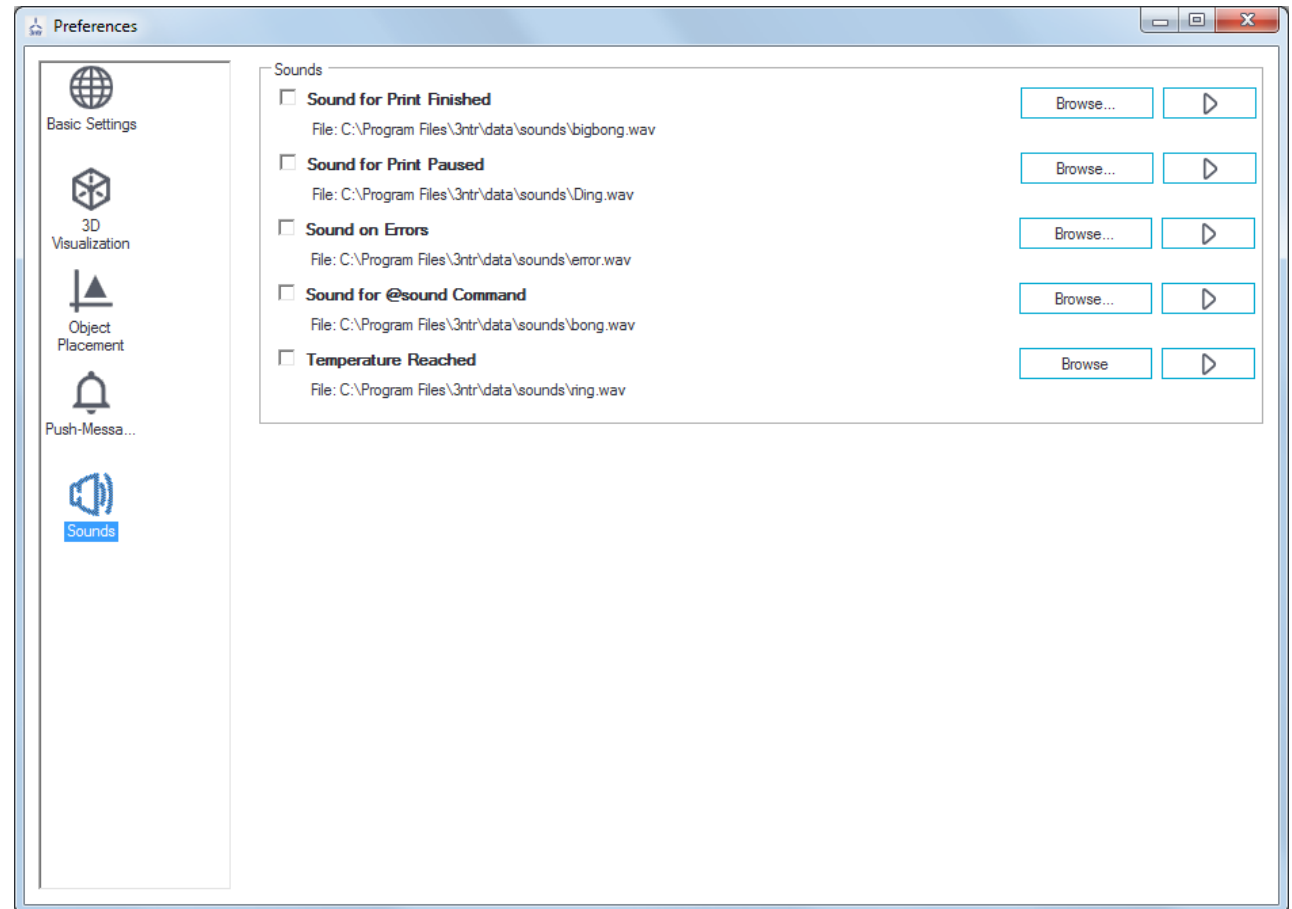
- Activate Push-Messages:** A checkbox that is currently unchecked. Below it is a descriptive paragraph: 'Repetier-Informer is a smartphone app that allows you to receive push notifications. In the app you can create new groups or use shared groups. Enter here the group you want the host to send messages to. All members of the group will receive the send messages.'
- Host Name:** A text input field.
- Optional:** A label indicating the input is optional and gets added to the title of send messages.
- Informer-Group:** A text input field.
- Target group id from your app:** A text input field.
- URL:** A text input field containing 'http://'. Below it is a note: 'Adds the above link to any message. E.g. a web enabled webcam url.'
- Test:** A button to the right of the Informer-Group and Target group id fields.
- Send messages for these events:** A section with two columns of checkboxes:
  - Column 1: ☐ Print Started, ☒ Print Paused, ☐ Print Stopped, ☐ Progress every
  - Column 2: ☒ Print Finished, ☒ Fatal Errors, ☐ Slicing Finished
- Interval:** A dropdown menu currently set to '2 Hours'.
- QR Code:** A square QR code located to the right of the event checkboxes.
- Visit Repetier-Informer Website:** A button at the bottom of the main area.

22 Preferences- Push messages



You can enable sounds for five events:

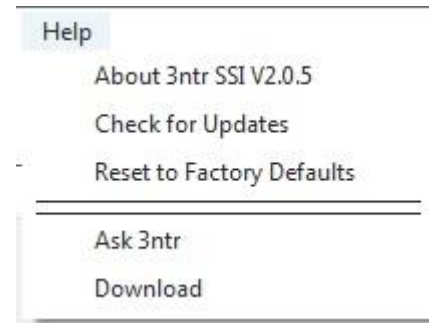
- Print finished
- Print paused
- Errors
- @sound command inside the Gcode
- Temperature reached (on any heater)



23 Preferences - sounds

This little menu has several options:

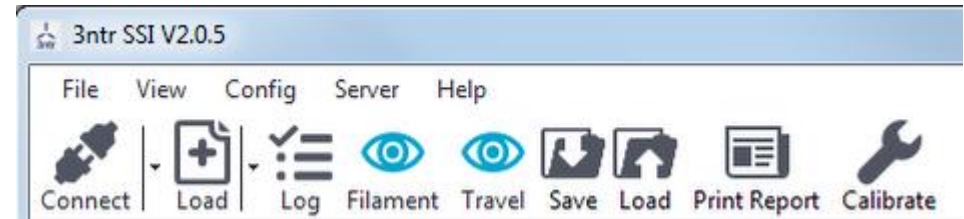
- About: brings a windows with credits, disclaimers, terms of use...
- Check for updates: basically a copy of the UPDATE button into utilities tab
- Reset: usually you should NEVER use this option, unless asked by 3ntr [support@3ntr.net](mailto:support@3ntr.net)
- Ask3ntr: connects to support/help desk
- Download: connects to SSI installer download page



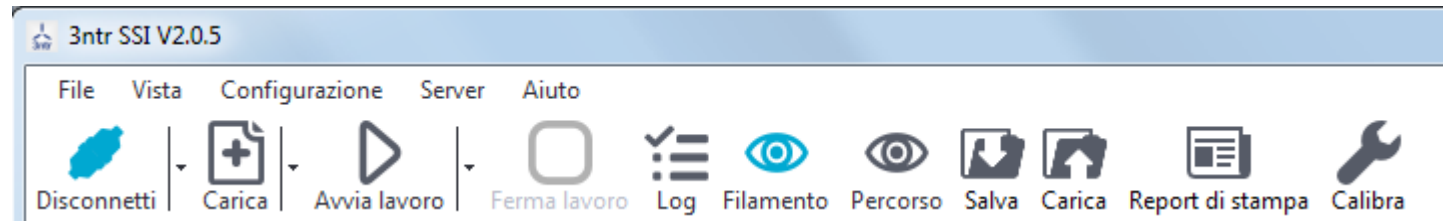
24 Help

## Left Tool bar

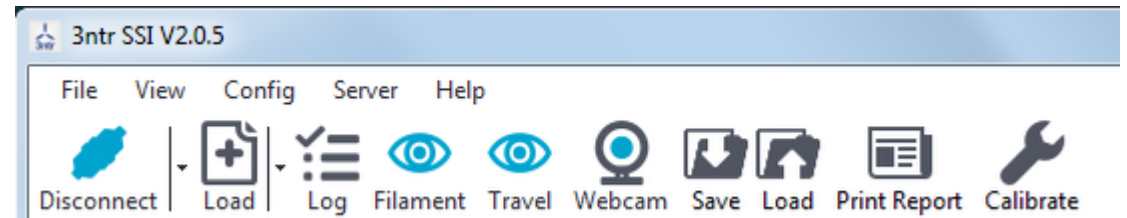
- Connect/Disconnect: to enable connection to the printer (with the connection setting specified into configuration)
- Load: (Ctrl+O): load a Gcode (printing instructions) or an STL (part geometry)
- Start/pause print: runs the gcode currently loaded into editor/print preview or pause the print process
- Kill print: stops printing process
- Log: enable/disable log area (bottom screen)
- Filament: show the printing path (available only in advanced mode)
- Travel: show the travel path (available only in advanced mode)
- Webcam: when using a print server, this option will pop up the realtime webcam viewer
- Save/Load: saves the current scene along with settings. You can use those functions to handle complete job settings (geometry + settings) or just presets (empty scene + settings). Saving scenes is a good way to handle preferred settings. Saved scenes (\*.ssi files) can be sent to 3ntr support to diagnose printing problems.



25 Connection OK, machine is idle



26 USB connection, machine online



27 Print server connection

- **Print report:** This option lets you quickly create print reports to support the work done or give an estimate for a job being evaluated. You can change all the field values: numerical ones (finishing, shipping) automatically update the total. Click on “logo” area to change the letterhead graphics (your logo). When you are done with entering customer data and optional values (hourly cost etc...) simply press EXPORT: you will be given the choice where to save the PDF report.
- **Calibrate:** prepare the XYZ calibration files for the printer with currently loaded filaments – you will have then the choice to print immediately on connected printer or saving the gcode file for later use.

Print Report

Settings

Project name

Currency

€

Hourly Cost (€)

10.00

Cleaning time (h)

Cleaning cost (€/h)


Finishing time (h)

Finishing cost (€/h)

Packaging cost (€)

Shipping cost (€)

Logo



Materials costs - €/g

ABS FAST 3ntr

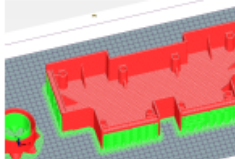
0.051000

SSU00 3ntr

0.033571

-

-



Export

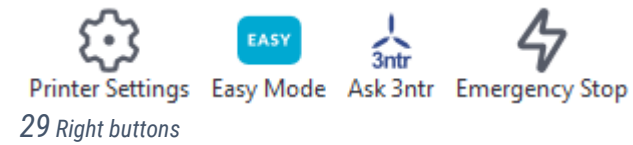


1 Print report

## Right toolbar

---

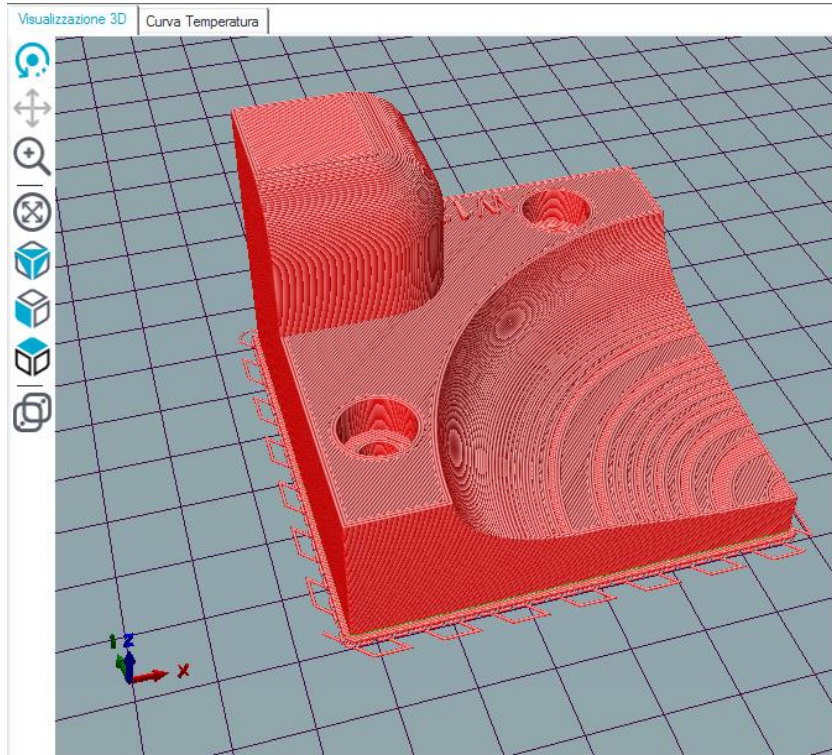
- Printer settings: to define how printer is connected to SSI
- Easy mode ON/OFF: to enable/disable SSI advanced features
- Ask3ntr: open a browser session on 3ntr help desk
- Emergency Stop: immediately stops/resets the printer



## Visualization area

---




This area is used to display the 3D data (part geometry or print preview) according to the selected tab in use.









30 3D Viewer

## 3D view

When this mode is selected, we are given several buttons into left area: the first three ones are mouse behaviors modifiers.

-  Rotate: this is the default behavior In any tab (Object placement, Slicer, Print preview, ...) left mouse button is used to rotate the view
-  Move object: (object placement, slicing) left mouse button moves selected part(s).
-  Zoom: (any tab) left mouse zooms in (scrolling up) / out (scrolling down)

The four middle buttons change 3D visualization:

-  Zoom to fit
-  Isometric view: moves camera on upper front left corner
-  Front view
-  Top view
-  Use parallel projection (grey icon = perspective, blue icon = parallel) – button works in any tab
-  Clear – deletes current print preview – button works only into “manual control” and “sd card”



31 3D view

## Log

This window keeps track of PC–machine communications (when using USB direct connection).

On the top part you have some buttons to enable/disable some features

- Commands: show commands sent to the printer
- Info: printer feedback
- Warning:
- Errors:
- ACK: receipt confirmations from printer
- Auto scroll: enables scrolling of the lines, to show latest messages
- Clear log: clean the screen
- Copy: lets you paste the current line (or lines selected with mouse) as text in other documents



This window is enabled/disabled with this Log button to gain more space for other visualization/tabs.

Show in Log: ☒ Commands ☒ Infos ☒ Warnings ☒ Errors ☒ ACK ☐ Auto Scroll Clear Log Copy

13:56:53.191	N17 M105*17
13:56:53.247	ok T:35.3 /0.0 B:41.3 /0.0 T0:35.3 /0.0 T1:35.2 /0.0 T2:36.0 /0.0 T3:34.6 /0.0 B@:0 @:0 @0:0 @1:0 @2:0 @3:0
13:56:54.203	wait
13:56:55.194	wait
13:56:56.202	wait
13:56:56.248	N18 M105*30
13:56:56.302	ok T:35.3 /0.0 B:41.3 /0.0 T0:35.3 /0.0 T1:34.9 /0.0 T2:35.9 /0.0 T3:34.6 /0.0 B@:0 @:0 @0:0 @1:0 @2:0 @3:0
13:56:57.259	wait

Connected: 3ntrExtruder: 35.3°C/Off Bed: 41.3°C/Off



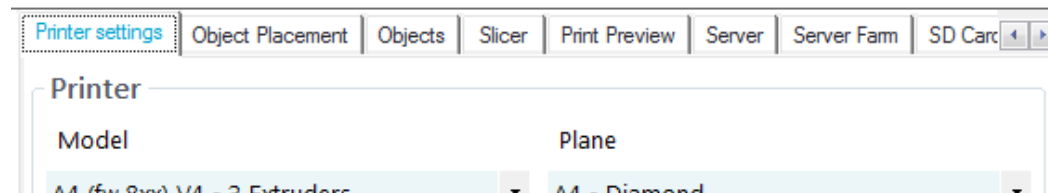
## Tabs

Here is where most of the action takes place.

Commands are quite easy to understand yet reading on you will learn immediately all the features you need to get up and running, probably saving costly misunderstandings (and possibly mistakes).

From left to right you will find a variable number of tabs (if you are using a print server you will get an extra one) placed in logical order:

- Printer setting: you start deciding how your printer will be configured
- Object placement: here you load and place on the printer tray the parts you want to create
- Objects: here you can decide to associate a nozzle/polymer to any given part on the printing area
- Slicer: you set the print options (affected by the EASY MODE button)
- Print Preview: shows a rendered preview of the print job, letting you inspect any printing phase
- Server (IF CONNECTED): gives you remote control upon a networked printer
- Manual control: move axes, send commands, change heater settings
- SD CARD: if available, will let you print from the gcodes available on the printer SD CARD memory
- Utilities: you got some nifty options here...

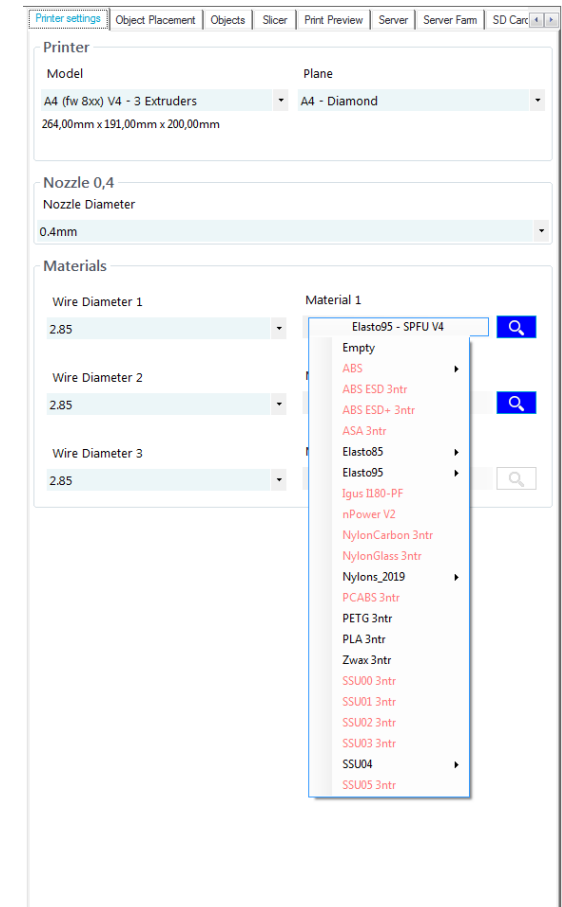


33 Tabs

The first step is telling SSI how your machine is set up:

- Your printer models
- What kind of printing surface (tray) you are using?
- The diameter of the nozzles being used
- For each nozzle:
  - Filament diameter (1.75 or 2.85)
  - Polymer type - choose the one you have mounted on selected extruder.  
SSI knows about polymer compatibility: incompatible settings will be shown with red background.  
The magnifying glass icon takes you to the application notes for current polymer selection.

Always be sure that the information you enter is closely following the real situation: failing to do so can surely lead to hardly acceptable results.



34 Printer settings

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*Clicking on blue magnifying glass icon for every material/nozzle will give you access to the application notes for selected material.  
PLEASE be sure to have read it top to bottom – will get you to Jedi master levels!*

---

## Object placement

This tab lets you insert and place object on printing plate (bed)

The following buttons are available:



Export: lets you save current file into selected format (usually STL)



Add object: select file of the object to be inserted



Copy object(s): lets you clone multiple copies of selected object(s).

Auto positioning is enabled by default.



Auto position: rearrange object on the plate



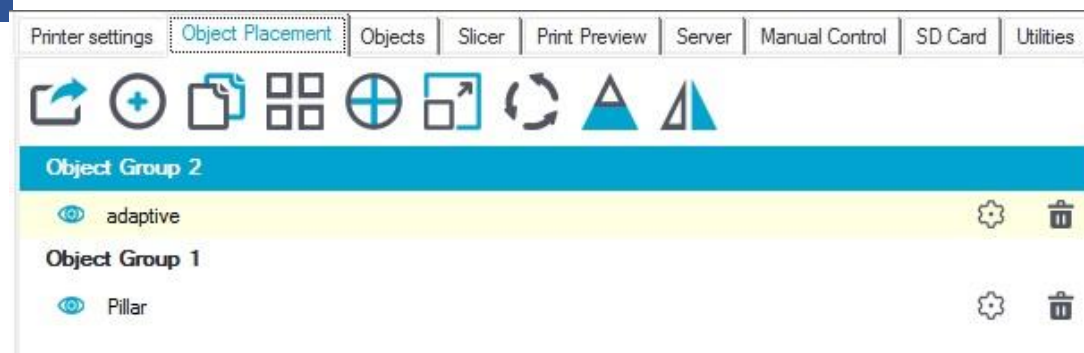
Center object: put selected object at bed center



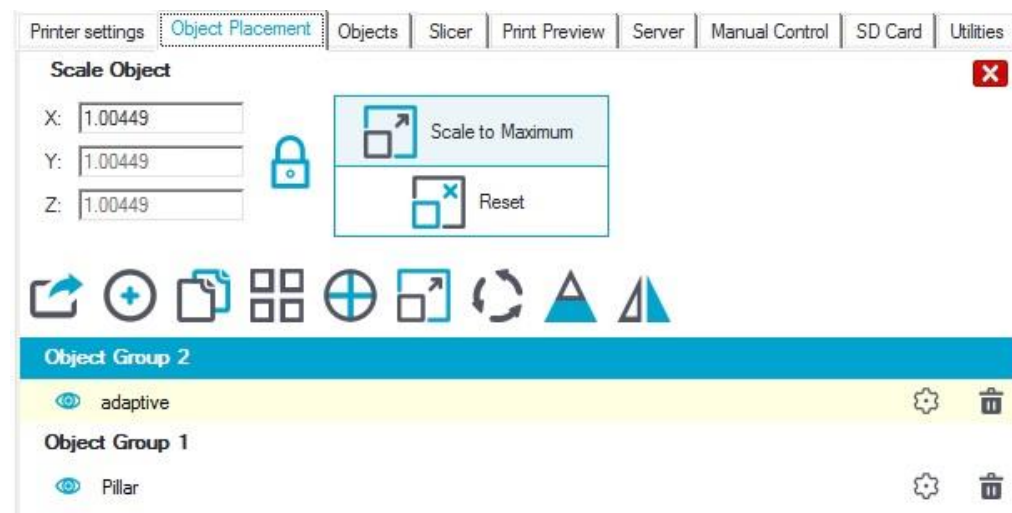
Scale object(s): gives you the scaling tool to set precisely the XYZ scaling factors (locked for all axis – but clicking on the lock icon you will be given independent axis settings). You can also use a button to scale object(s) to fill the printing volume. A reset button is available to revert to initial size.



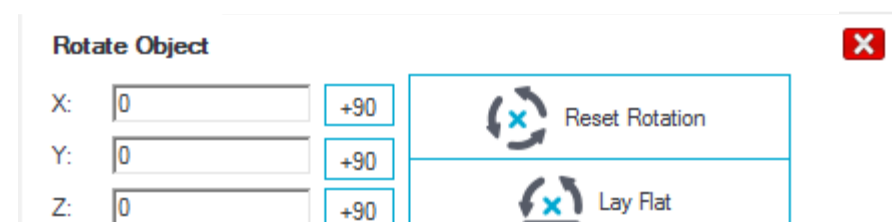
Rotate object: gives you the rotation tool You can choose to precisely set rotation for each axis or just rotate 90° using the “+90” buttons. A reset button is available to clear all rotations. The “lay flat” rotates part until the lowest face can be laying flat on the bed.



35 Object placement



36 Scale object



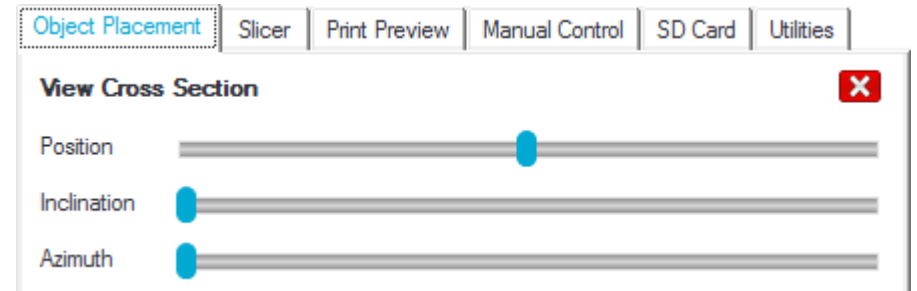
37 Rotate



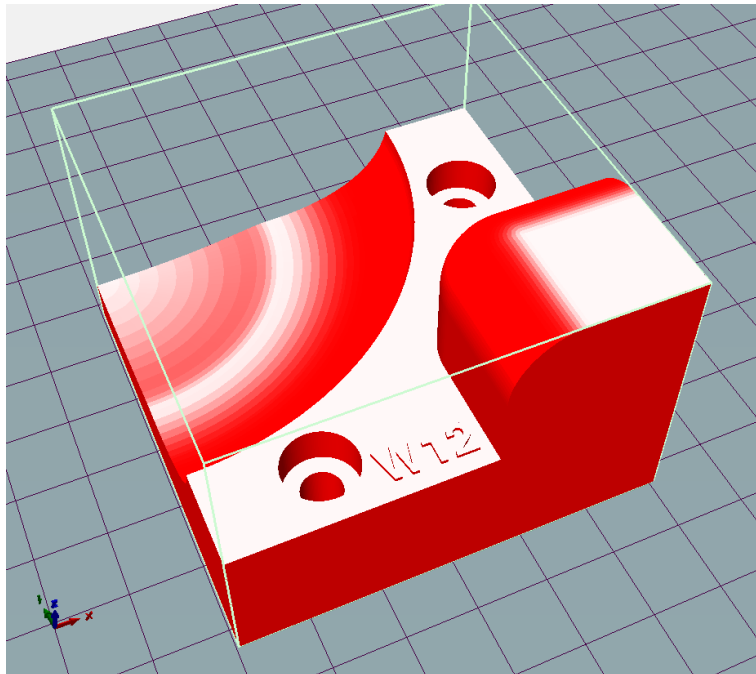
View cross section: this is just an analytical tool, without any effect on part(s) and/or print results. You can change cross section plane using three sliders. Useful tool to search for geometry errors and hidden supported areas.



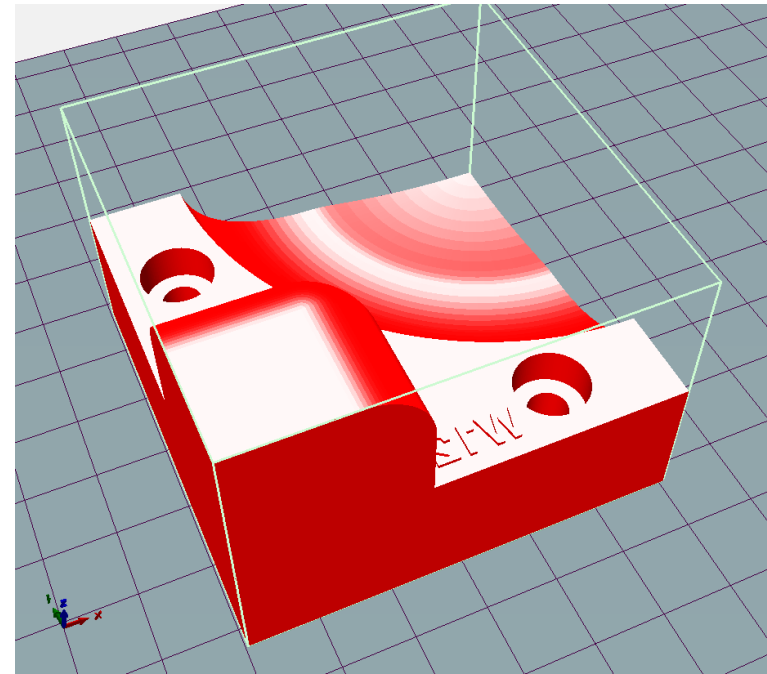
Mirror object



38 Cross section



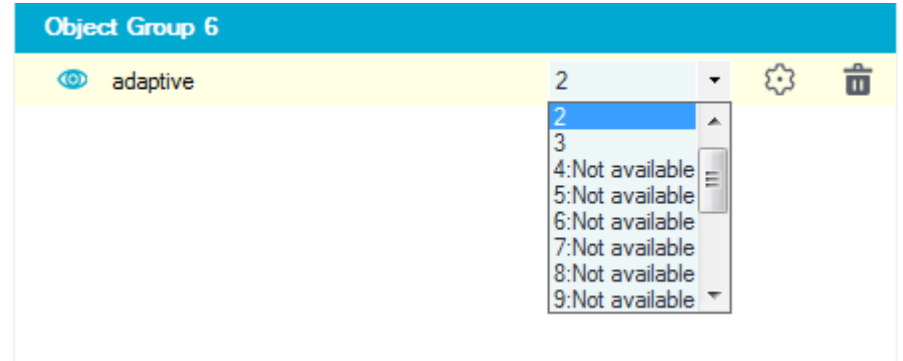
40 Before mirroring



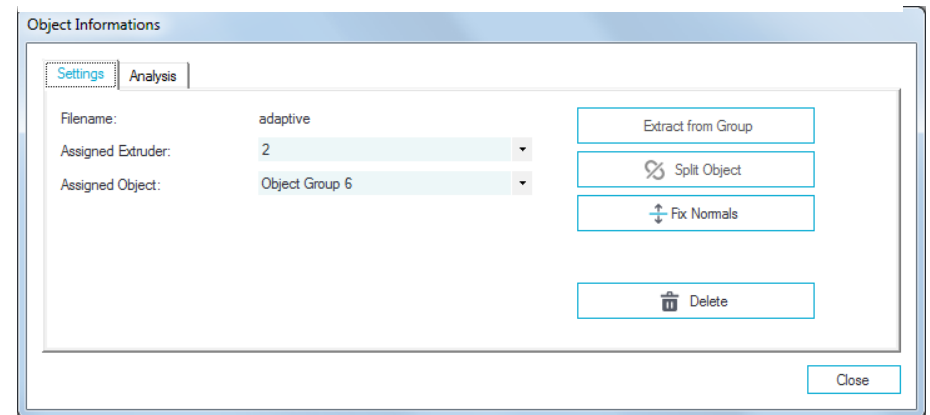
39 After mirroring

Below the button area you can see a list of the object placed on the plate – for each object you can

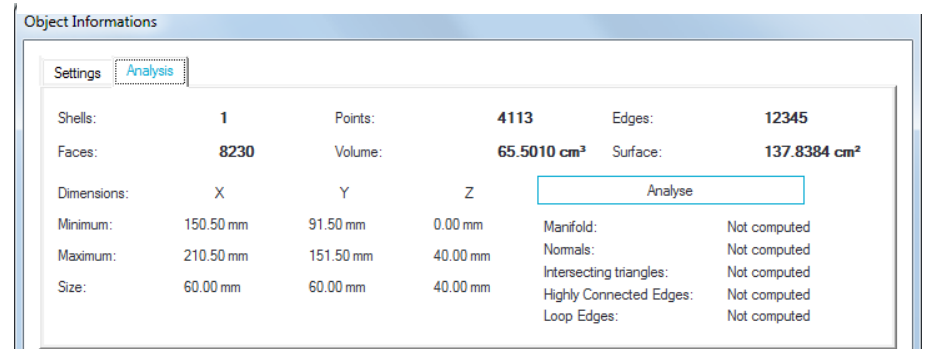
- Enable/Disable visualization
- Print it with selected nozzle (chosen from drop down list)
- Recall an information screen, with two tabs
  - Settings, letting you Assign part to one of available extruders
    - Assign object to a group
    - Extract object from a group
    - Split object (if made of sub-meshes)
    - Fix normals if object has troubled geometry
  - Analysis: perform a geometrical analysis and report any problem



41 Assign to extruder



42 Object informations

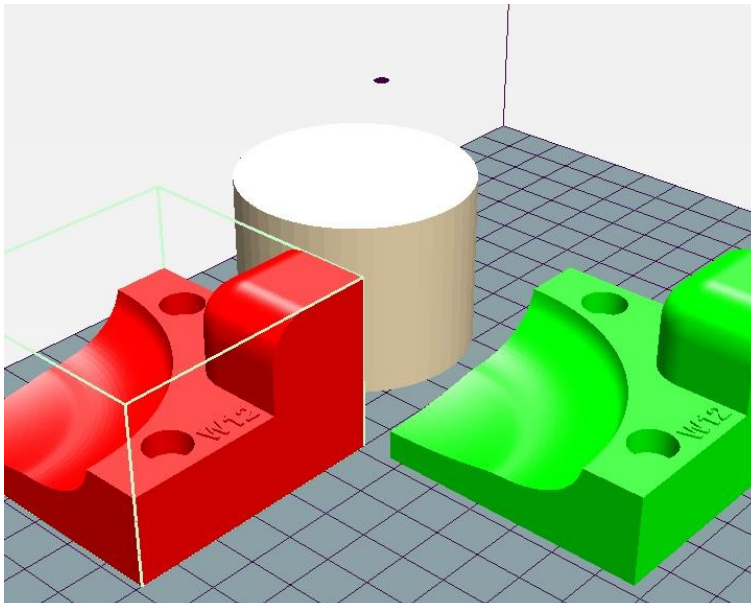


43 Analysis

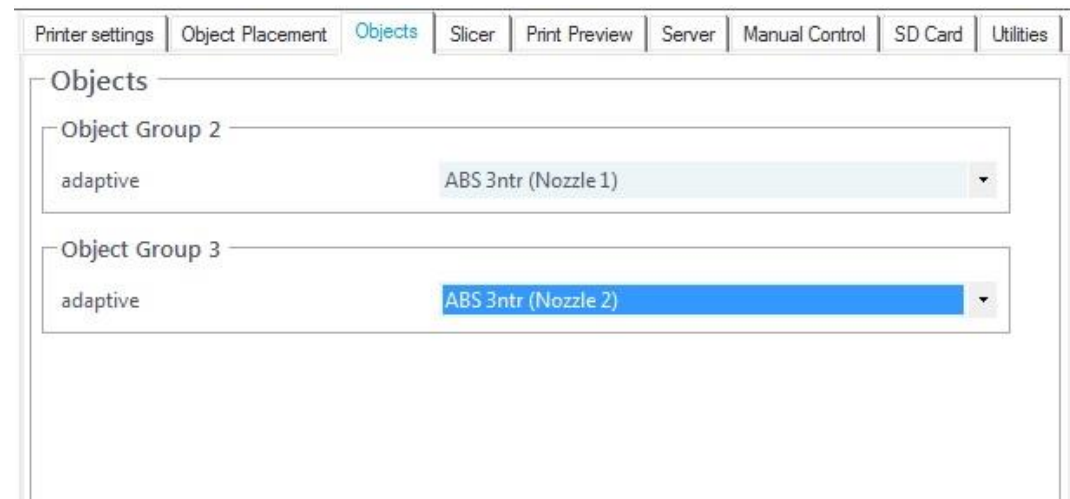
Here you can assign a specific nozzle to any part/group you are going to print.

In fig.45 Two color printing we have two copies of the same geometry (adaptive) and we want to print each one of them with a different color.

Just choose from the drop-down menu in each “adaptive” instance: the part will be then printed with the chosen polymer/color.



45 Two color printing



44 Objects tab

## Slicer

This tab is the key area: here you decide the printing parameters for the object(s) on the plate.

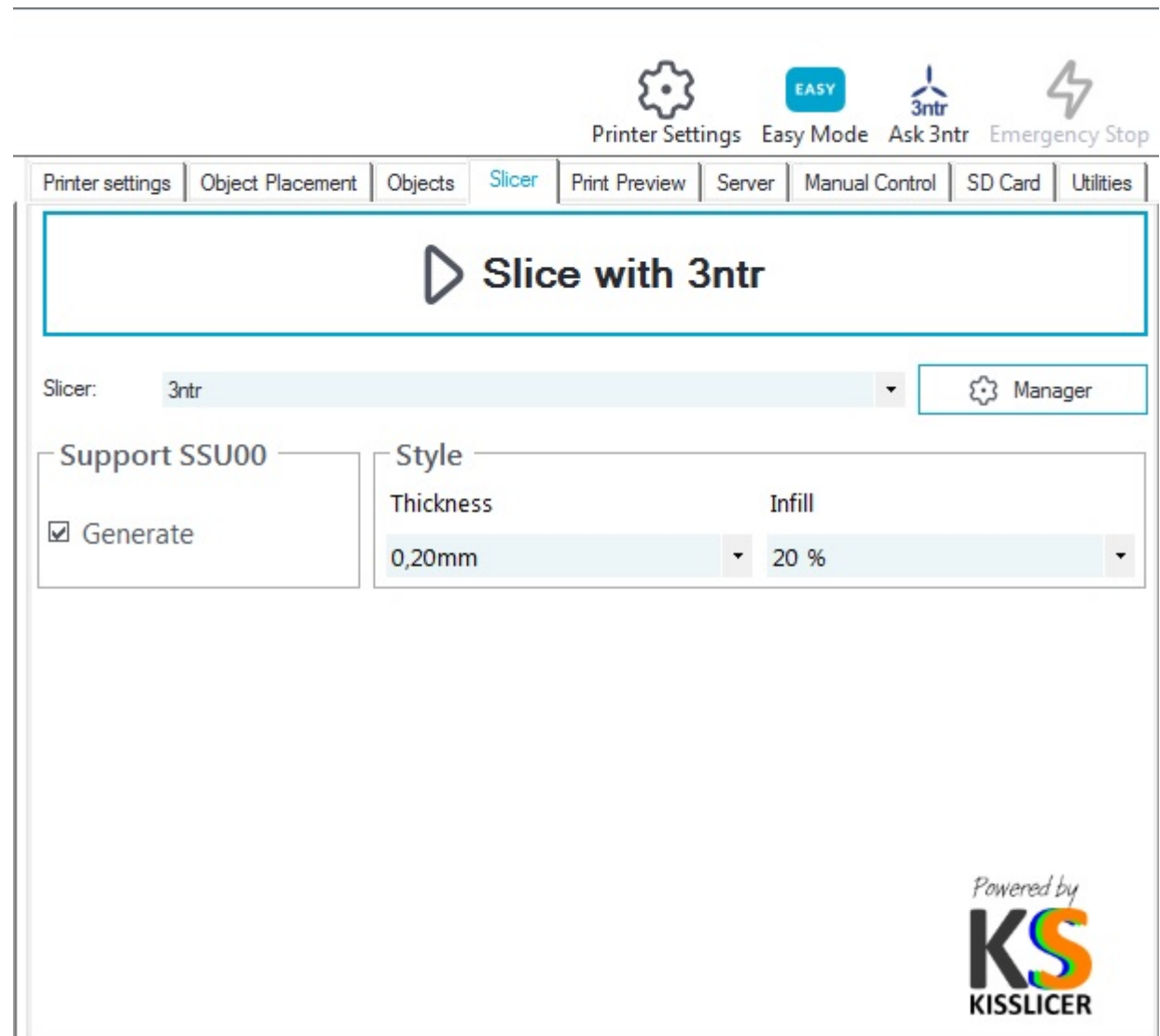
EASY

**Easy Mode** Easy mode lets you get parts with minimal information required

EASY

**Easy Mode** Disabling the EASY mode you get access to more parameters (but still actively monitored by SSI) to get the job done with more challenging parts.

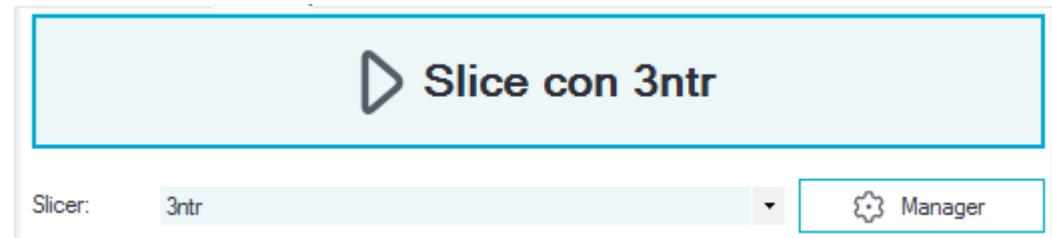
Disabling the EASY mode will always get you a warning window.



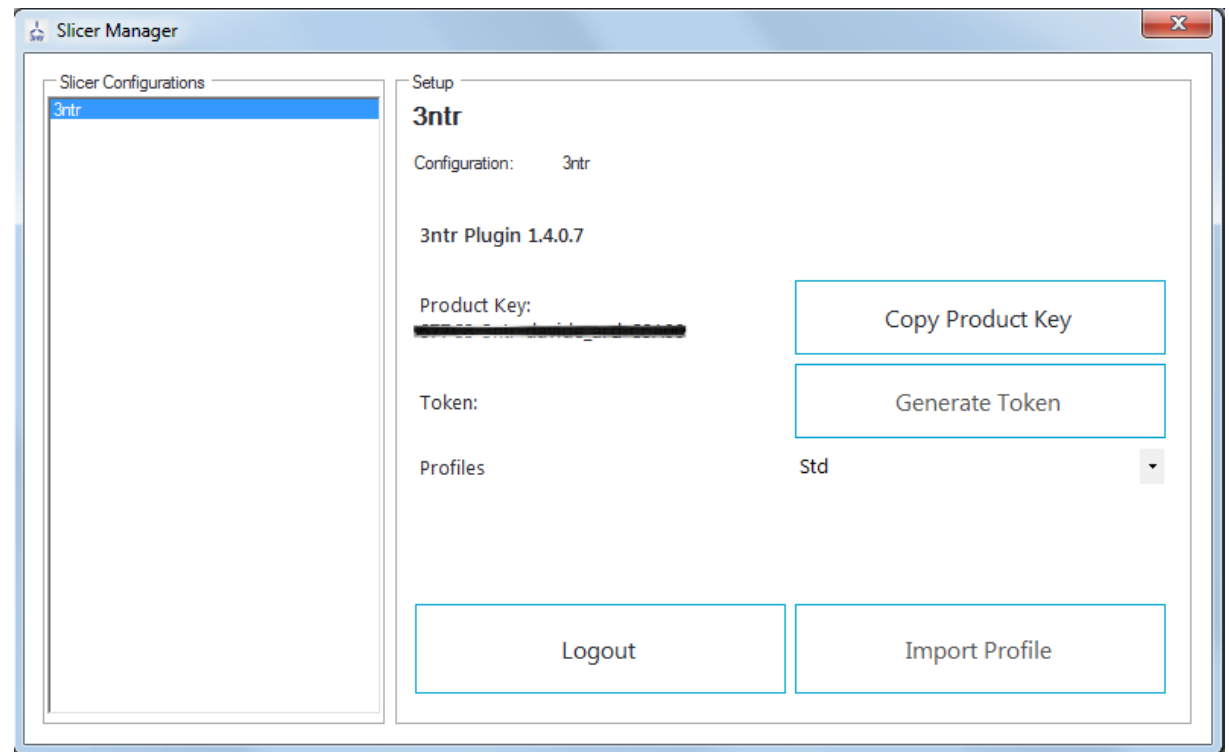
46 Slicer

Regardless of EASY setting, the upper slice tab area looks always the same, with three controls:

- The “Slice con 3ntr” button that starts the slicing process
- A drop-down menu that shows the current slicing app (3ntr-Kisslicer)
- The “Manager” button that lets you handle system upgrades when no direct internet access is available – a specific window will pop up with the following controls:
  - A “Copy” button for product key (to paste it into any text editor)
  - A “Generate token” button to create a file to be sent to 3ntr in case you can’t use the live update mechanism
  - A “profiles” chooser, in case you have been assigned multiple configurations (i.e.: if you are a beta tester, you can switch anytime between production and beta test print parameters)
  - A “Logout” button, to release the license (therefore disabling this install) to be installed/activated on another PC
  - “import profile”: see more about this into “Offline registration”



47 Upper slicing panel



48 Slicer manager window

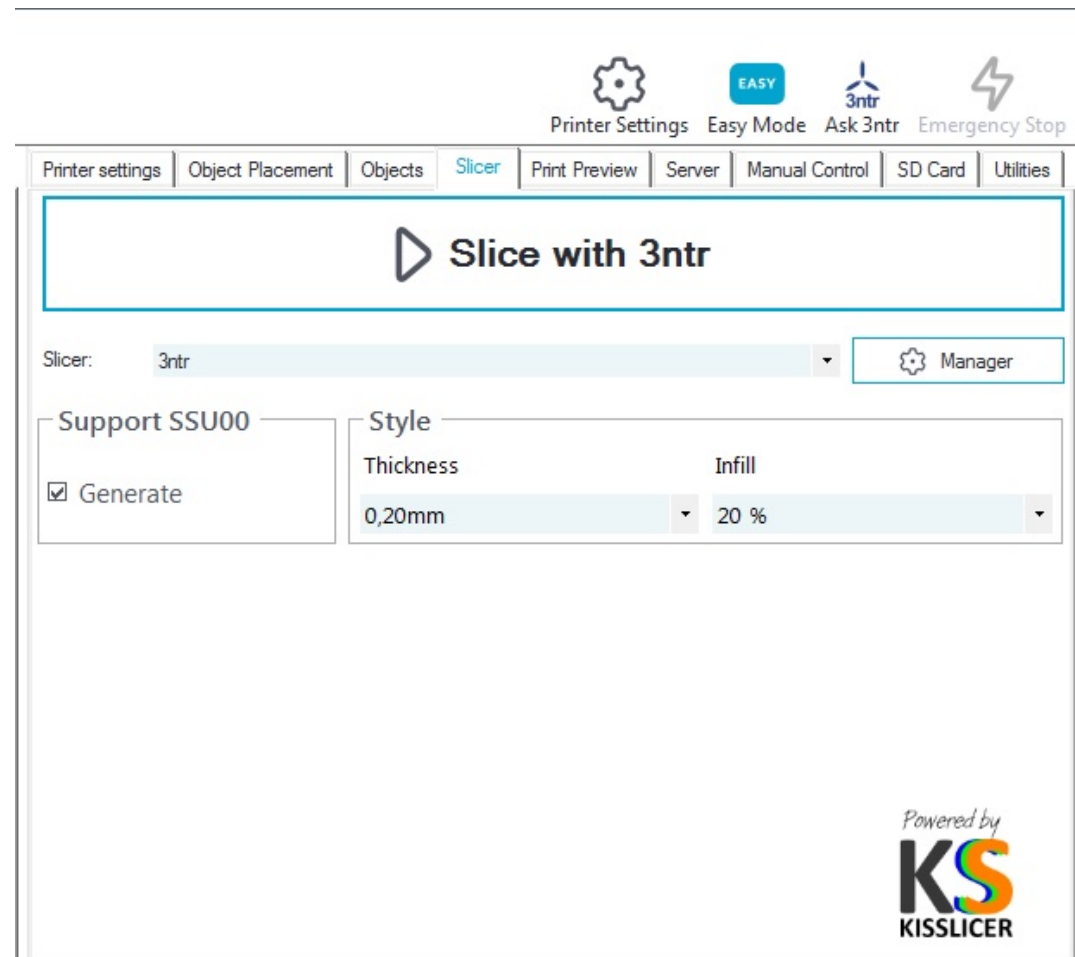


EASY

**Easy Mode** This mode won't let you make the mistakes – just give few information and SSI will output faultless gcode.

All you have to do (before clicking on the large “Slice with 3ntr” button) is choosing three settings:

- GENERATE: enable/disable support
- THICKNESS: set part finishing level
- INFILL: set part density



49 Easy slicing mode

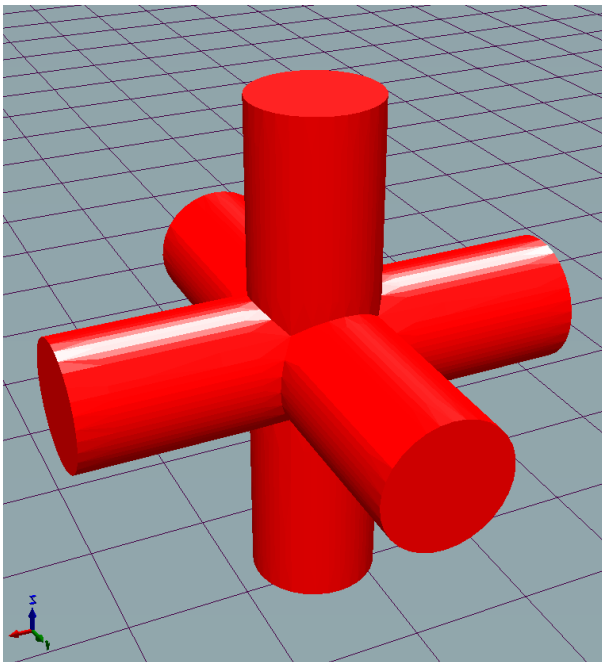
## Enable support structures



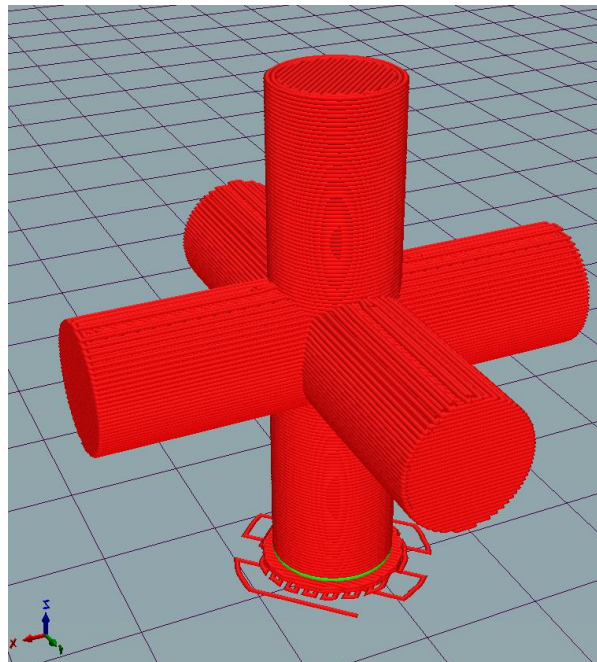
This option (default ON) generates support geometry for any overhang area on your part(s).

You shouldn't disable this option UNLESS you are looking for faster prints but willing to put up with worse surface finish (and potential print failure).

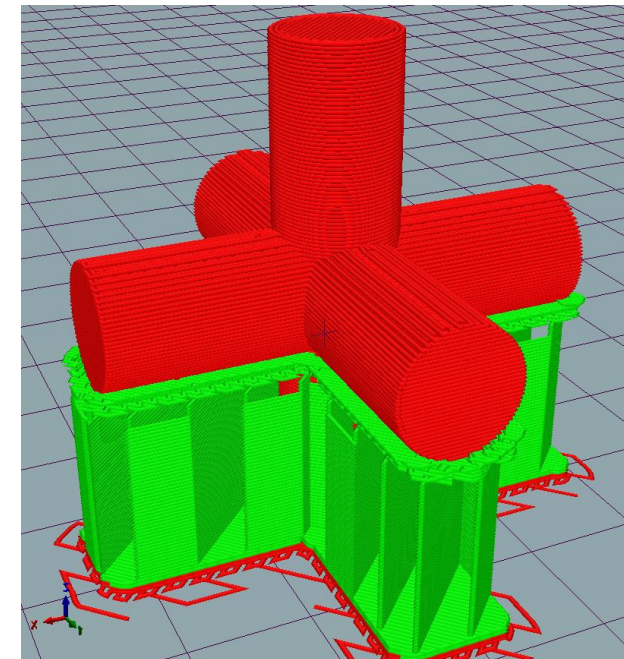
SSI will automatically generate support geometry with adequate settings for the selected part and support polymers.



52 Part with overhangs



51 Support = off (will surely fail)



53 - Support = ON (correct print quality)

## Thickness

Higher numbers here will get faster prints but lower quality.

Choice is quite straightforward

Thinner layers = better quality = longer printing times

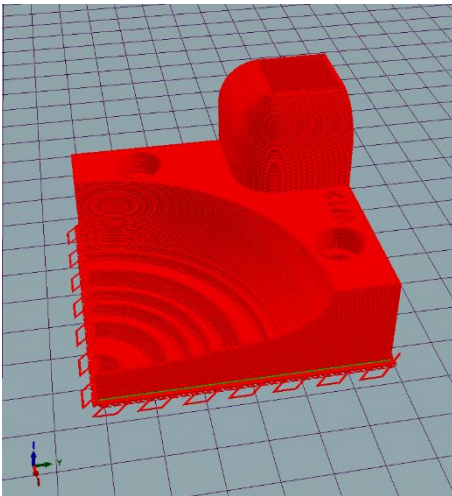
Thicker layers = coarse quality = shorter printing times

Style	
Thickness	Infill
0,30mm	25 %

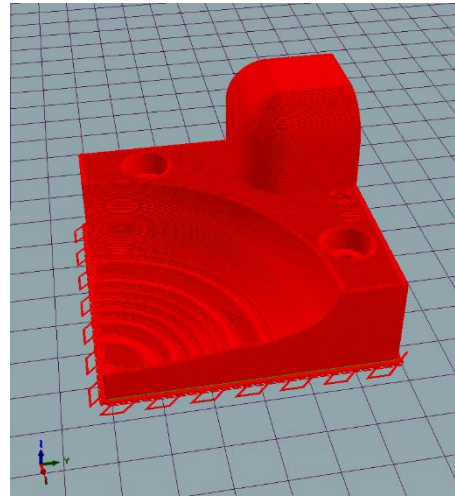
54 Style

With the adaptive option, software automatically decides layer thickness according to object topology, getting a good qualitative compromise. The effectiveness of this option is strongly dependent on part geometry and its orientation.

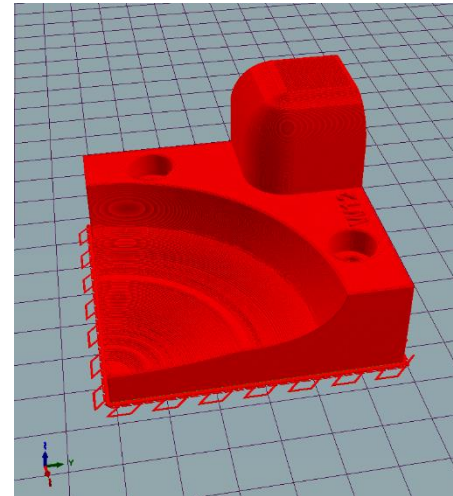
Print preview is an excellent way to choose best settings (added to operator experience and given time and time accorded)



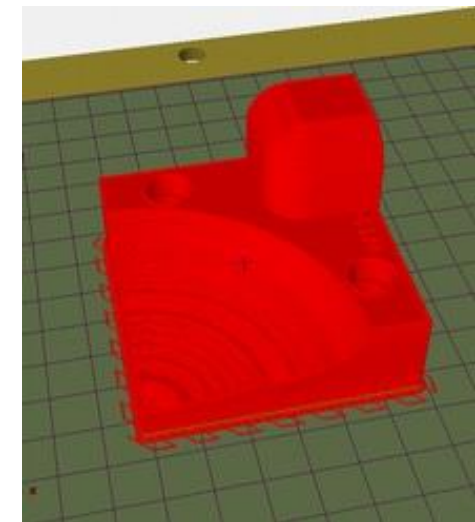
55 Layer 0.3mm 25% (2h 21m)



58 : Layer 0.2mm 25 % (3h 09m)



57 layer 0.1mm 25% (5h 28m)

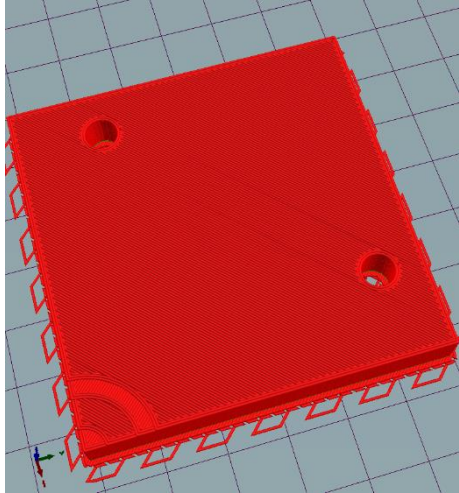


56 Adaptive 0.2/0.3 25% (2h48m)

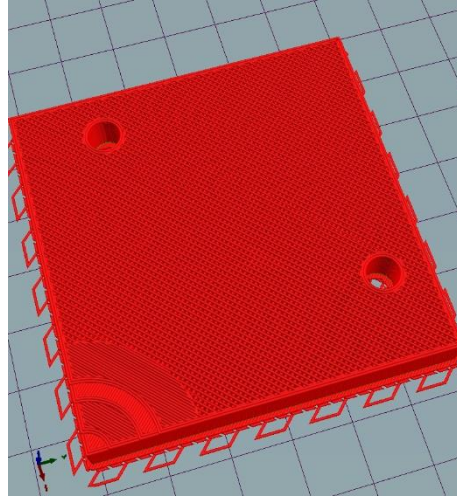


In the same control area (Style) you can set the infill rate.  
Higher infill rate give better stiffness, but

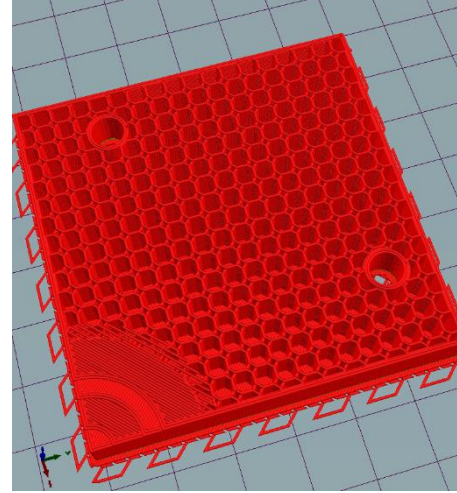
also longer wait times, as from following examples:



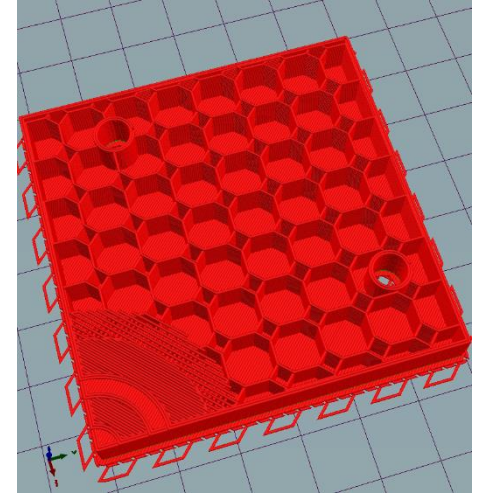
59 100%infill (8h 02m)



60 50%infill (4h 41m)

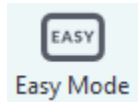


61 25% infill (3h 09m)



62 12.5 infill (2h 39m)

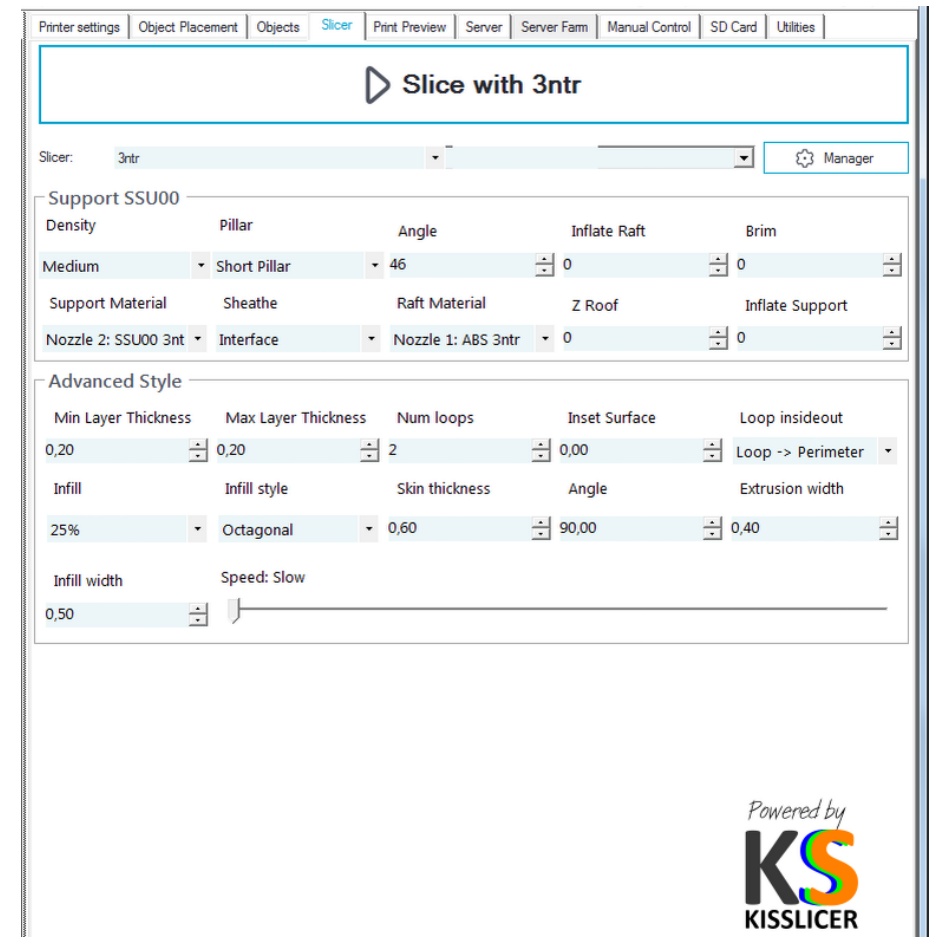
NB: infill style is automatically switched from octagonal to straight when infill rate is bigger than 25%



Disabling the EASY mode, you are given more parameters to deal with, with SSI checking on the background for any issue.

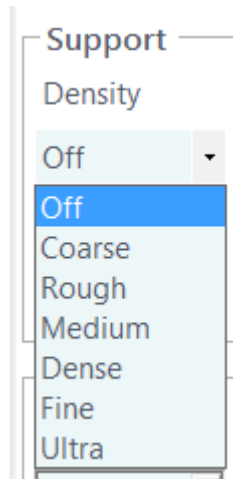
As from fig.63, there are more parameters available for support and style.

We are now going to see the meaning of those new controls – keep in mind that it is not a workable replacement for the training course!

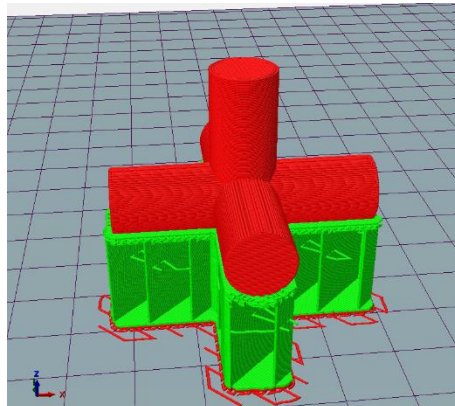


63 Advanced slicer settings

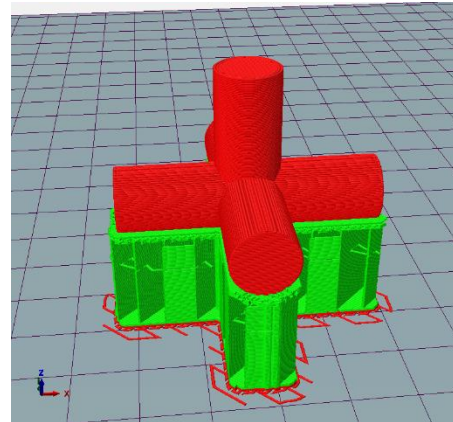
Starts at OFF (no support geometry will be generated) up to ULTRA (maximum support density) with intermediate settings.



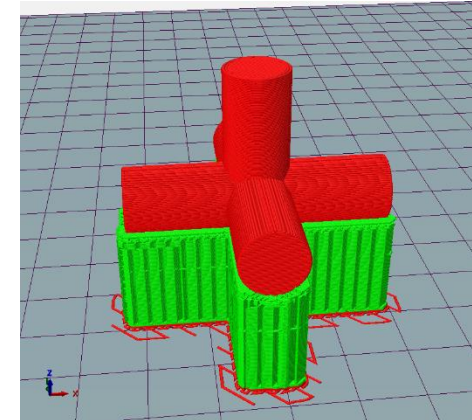
66 Support density



67 Coarse support

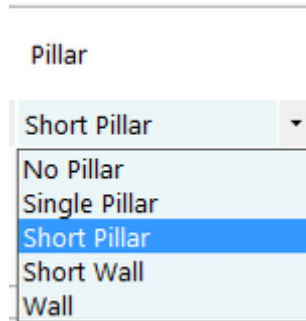


65 Medium support

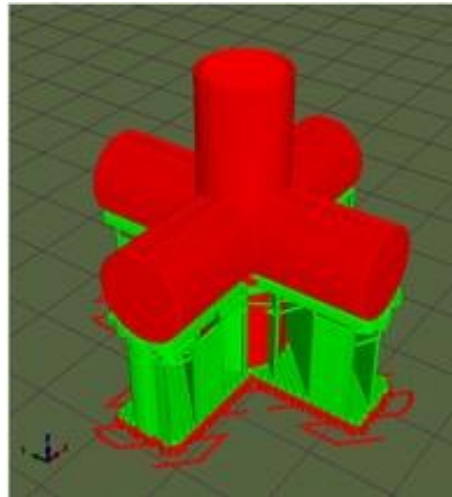


64 Ultra support

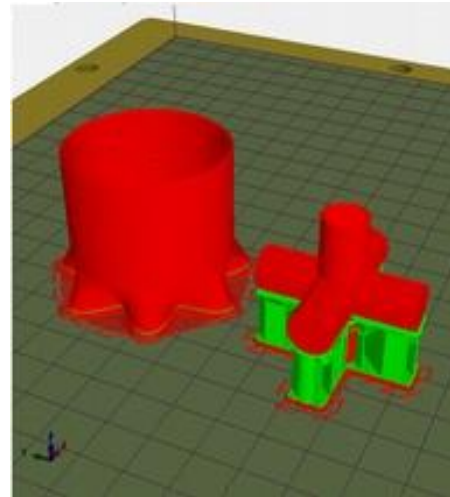
Choose the nozzle prime & clean strategy



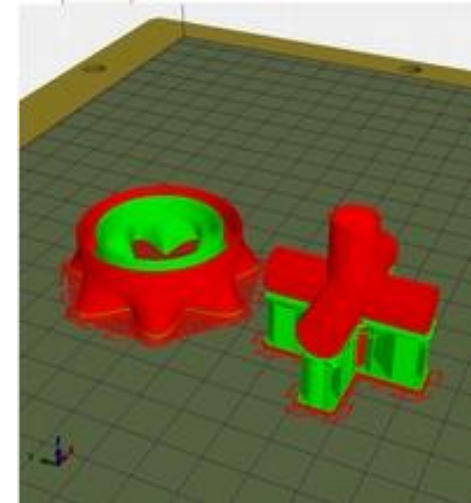
73 Pillar



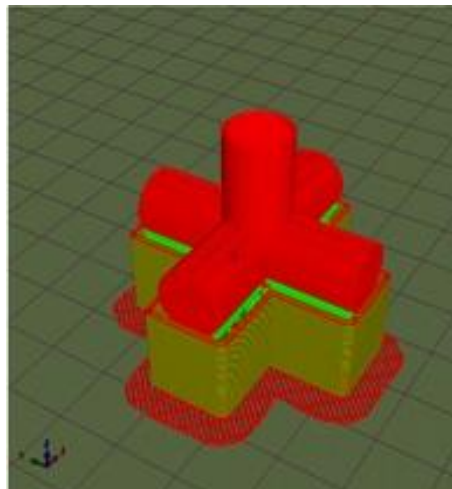
70 No pillar



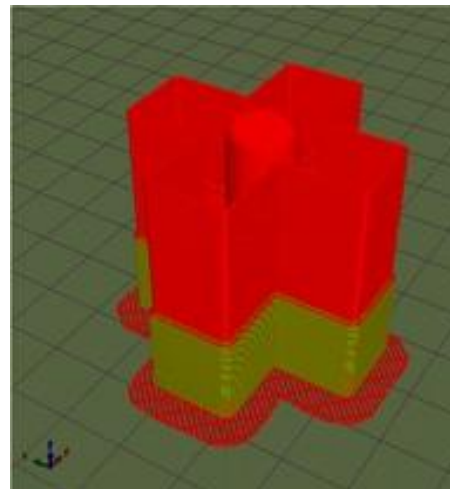
69 Single Pillar



68 Short pillar



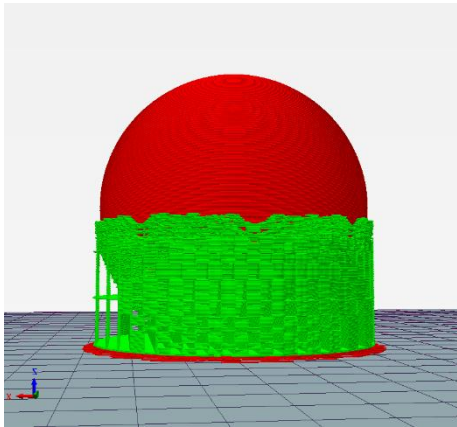
71 Short wall



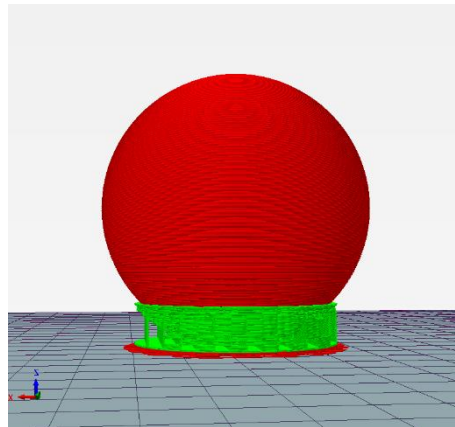
72 Wall



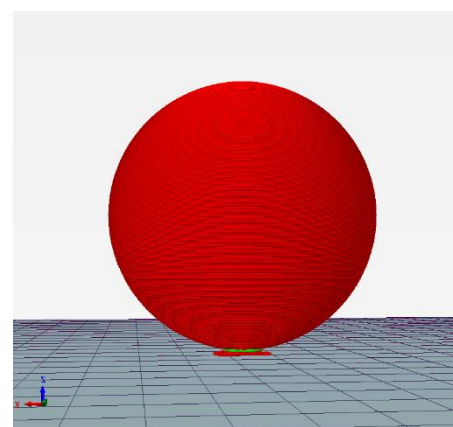
Will be generated support geometry for any face where the angle between her normal and the bed is bigger than the set number



74 Angle = 85



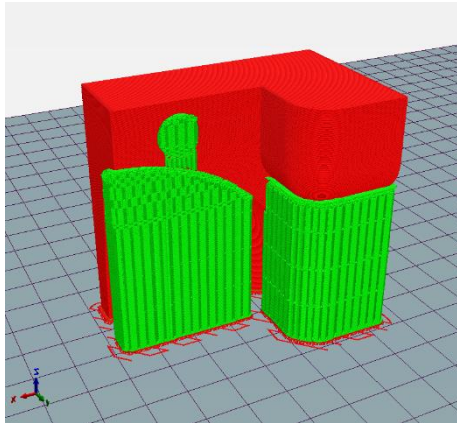
76 Angle = 45



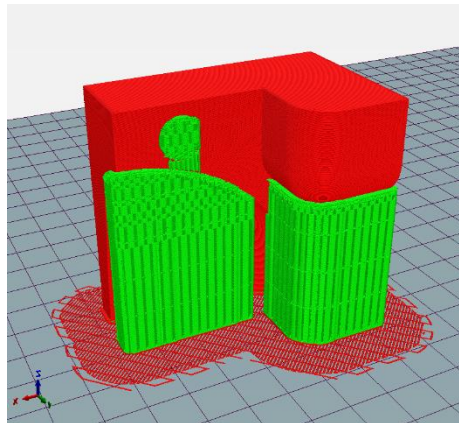
75 Angle = 5



Increase the width (in mm) of the basement grid (raft) to increase grip on printing surface of the bed



78 Inflate = 0

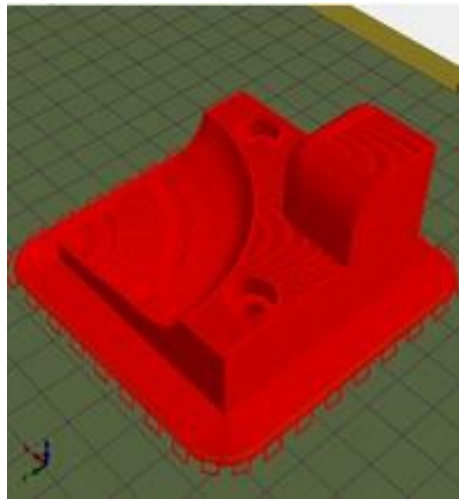


77 Inflate = 10

This option makes for a wider “foot area” to increase stability and tray adhesion

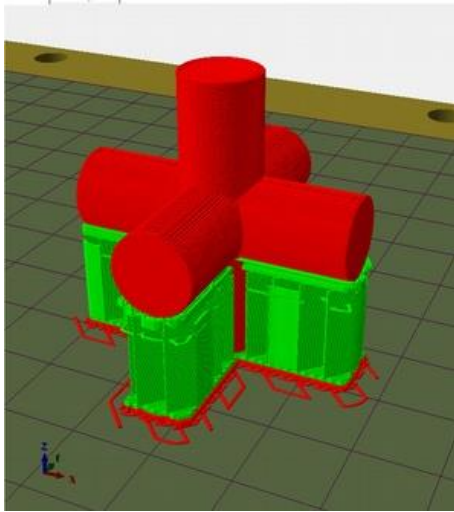


80 Brim = 0

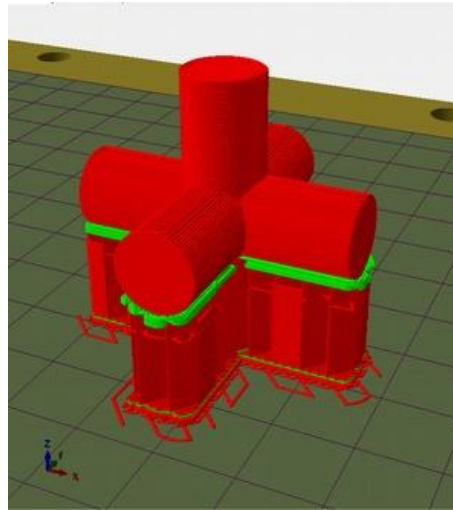


79 Brim = 10

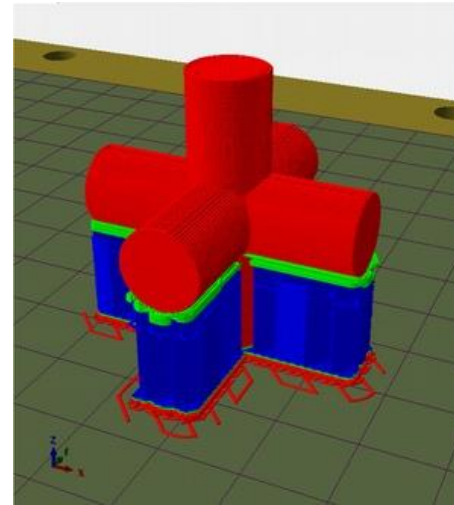
SSI defaults to best options, but you can change settings (take in account that your choice may not be a wise one)



81 SSI default

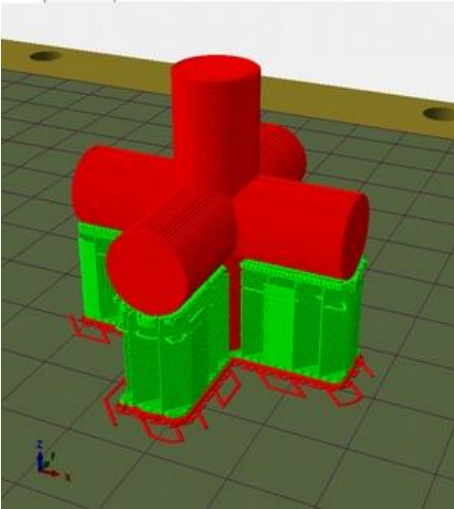


83 Support with part polymer

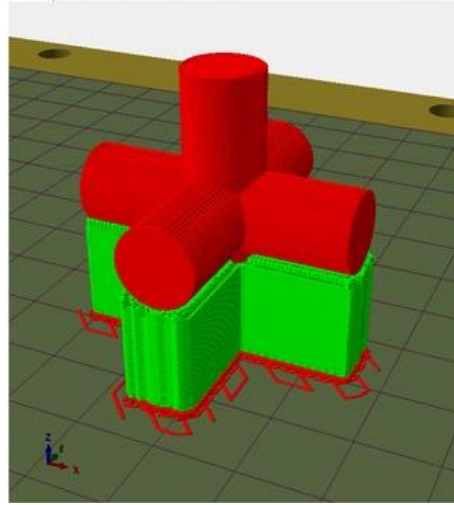


82 Support with third nozzle

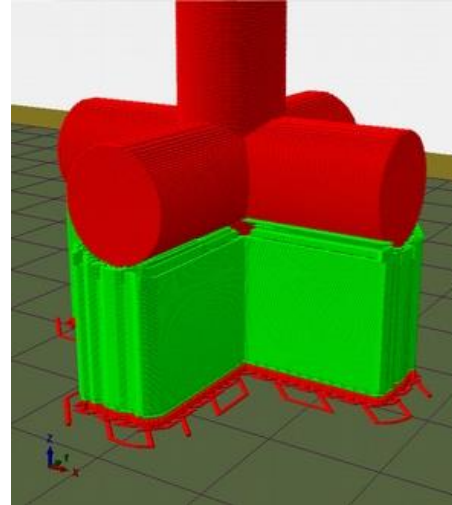
Sometimes it may be helpful to strengthen the support structures with a sheathe. This option may create support structures hard to remove.



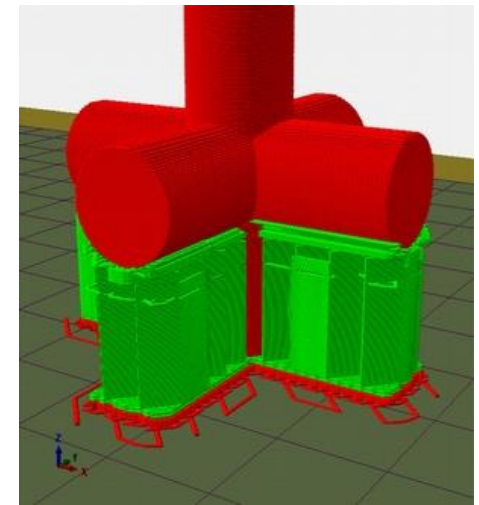
84 Sheate disabled



85 Sheate: support

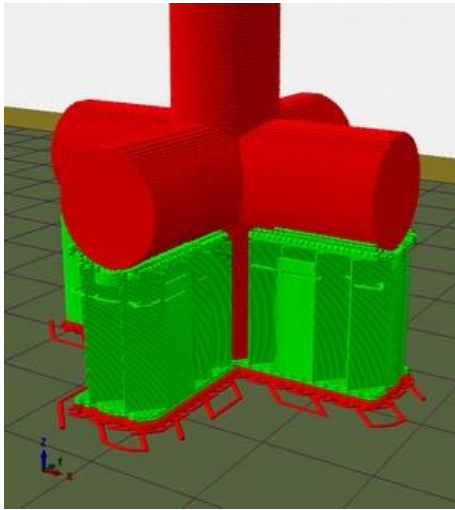


86 Sheate: both

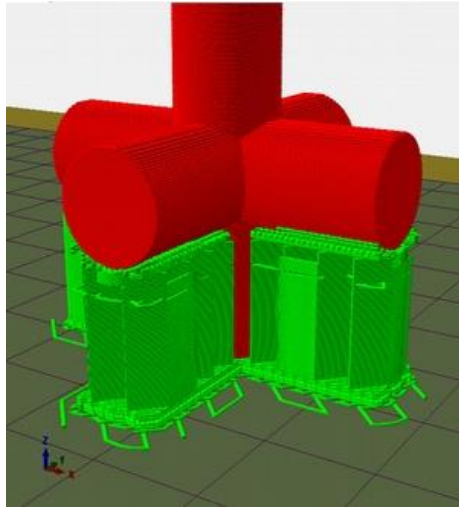


87 Sheate: interface

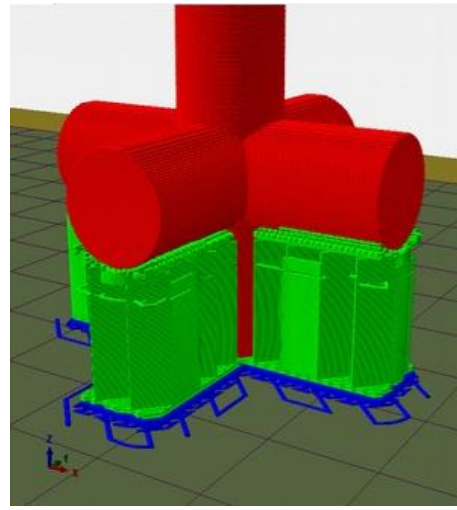
It is wise to let SSI to decide, but sometimes some improvement can be obtained altering standard settings



90 Default raft

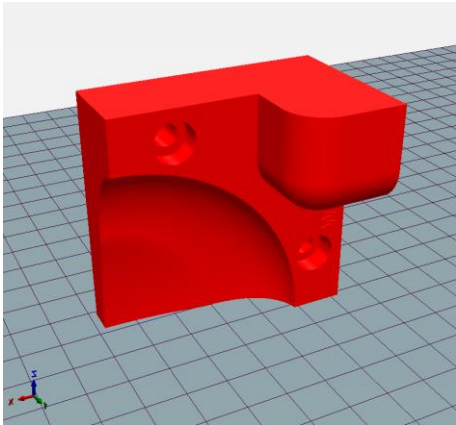


89 Raft with support polymer

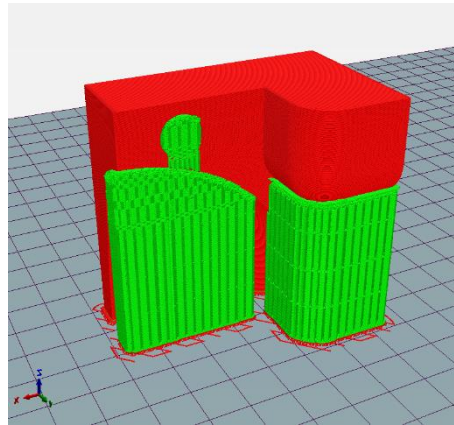


88 Raft with third nozzle

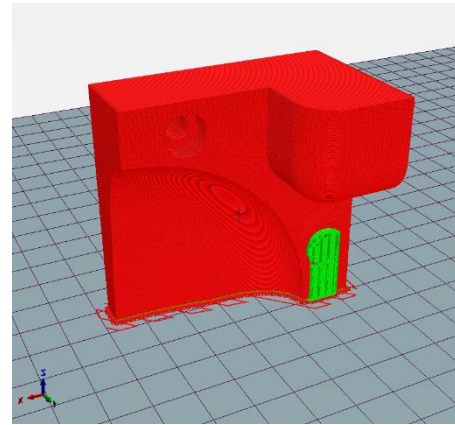
Maximum Z "altitude" to generate support. Any geometry above this level won't get any support. Default is minus one (= support everything)



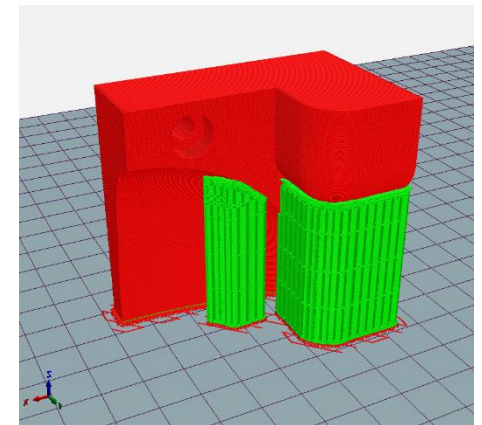
93 The part



94 Z roof = -1



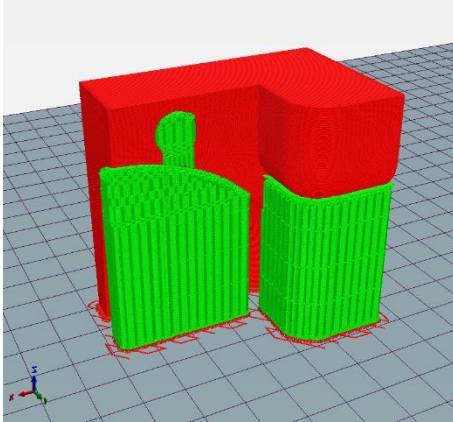
92 Z roof = 20



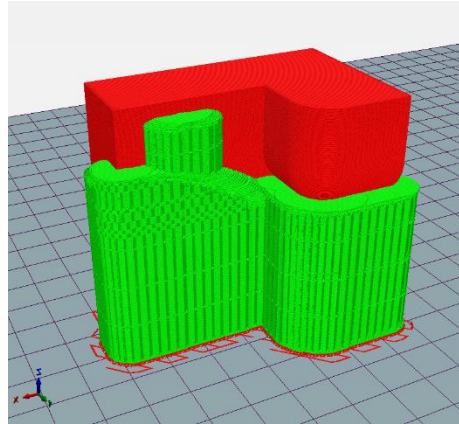
91 Z roof = 40



Grow bigger support (in mm) to improve rigidity and end result.



96 Inflation support = 0



95 Inflation support = 5

Those parameters will let you precisely adjust print settings affecting strength and appearance.

Even if SSI is on the background checking you choices, we recommend using this functionality only if having good printing experience

**Advanced Style**

Min Layer Thickness	Max Layer Thickness	Num loops	Inset Surface	Loop insideout
0,20	0,20	2	0,00	Loop -> Perimeter
Infill	Infill style	Skin thickness	Angle	Extrusion width
25%	Octagonal	0,60	90,00	0,40
Infill width	Speed: Slow			
0,50				

97 Style settings



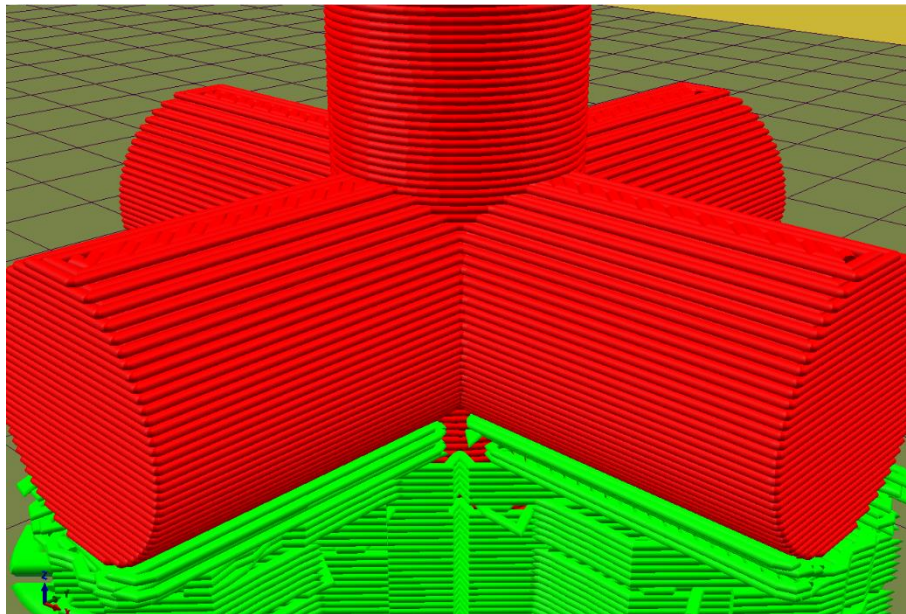
This sets the minimum/maximum layer height: if both set to same value, the printing will be performed at constant layer thickness.

If you set different min and max values, program will decide automatically (adaptive mode) each layer thickness to improve the final appearance.

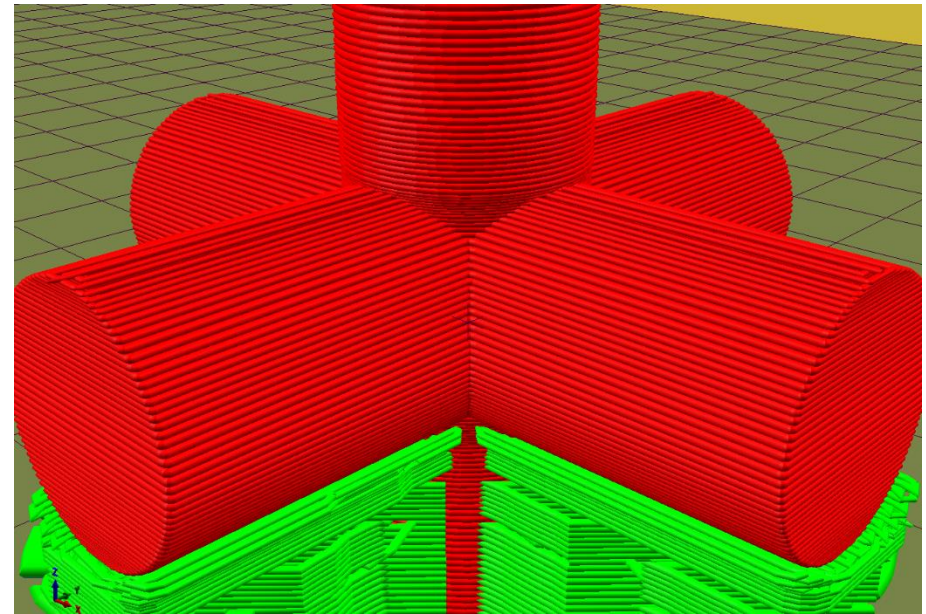
---

*Using adaptive slicing may bring some problems with difficult (elaborated) geometries, especially when small radius fillets (less than one mm) are present into part geometry.*

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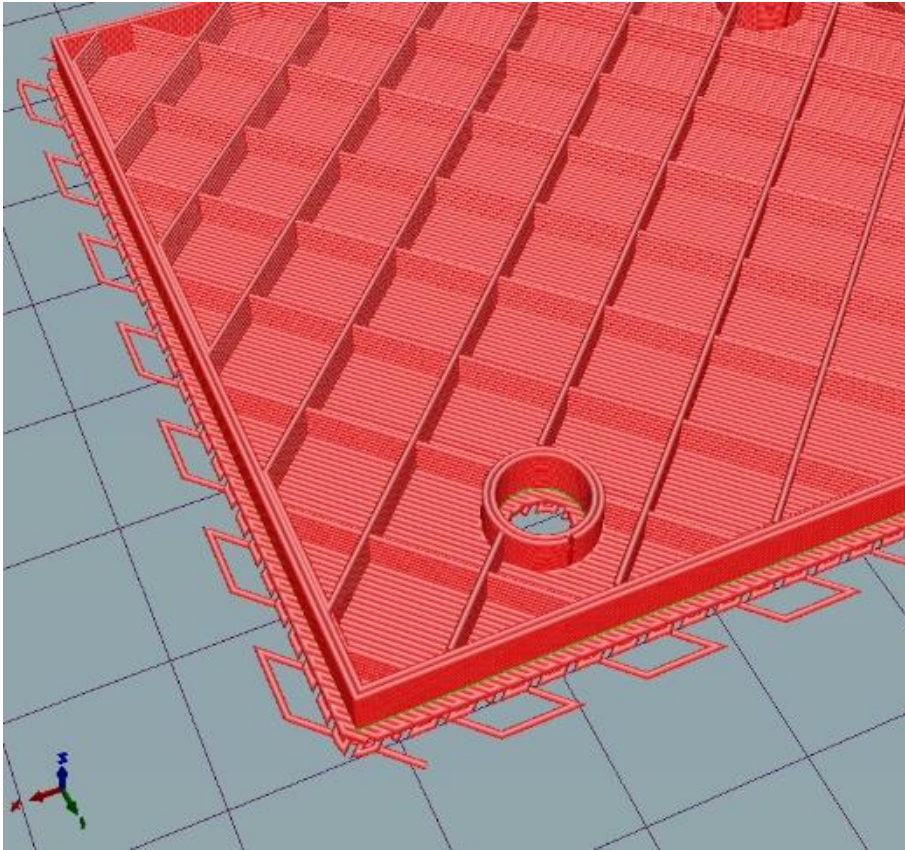
99 0.3mm layer



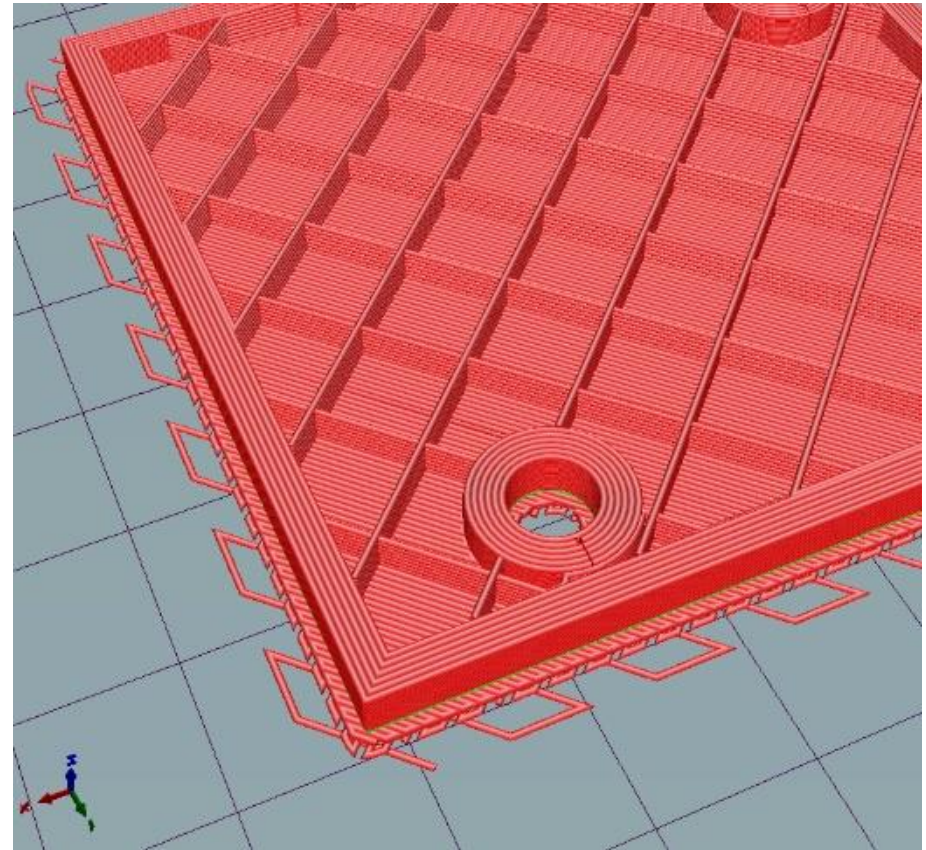
98 0.1 - 0.3 mm adaptive layers



This setting affects thickness (expressed as number of extrusions) of external perimeters – it WON'T affect top and bottom faces.



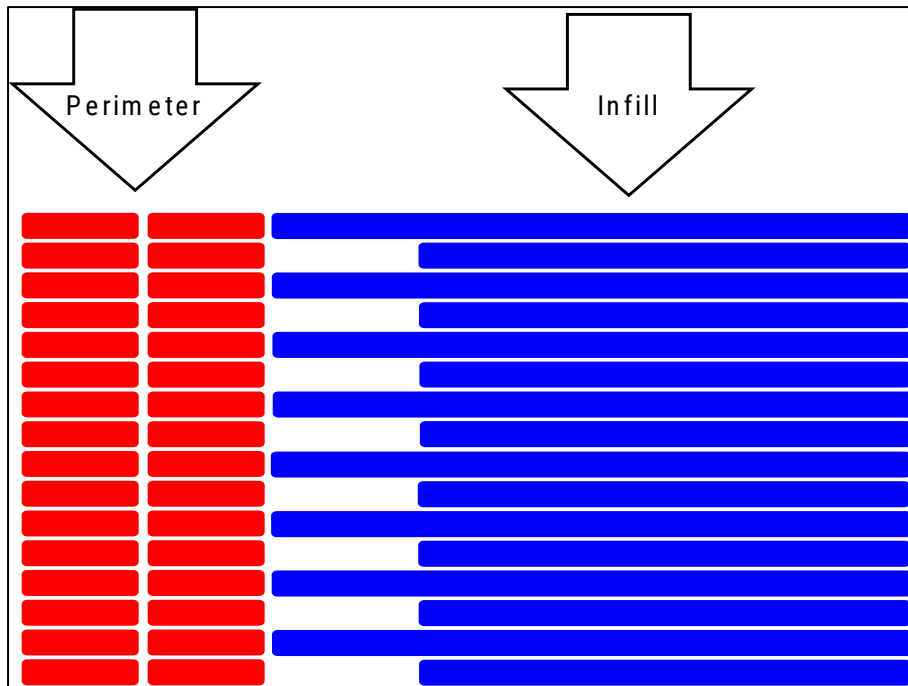
101 Num loops = 2



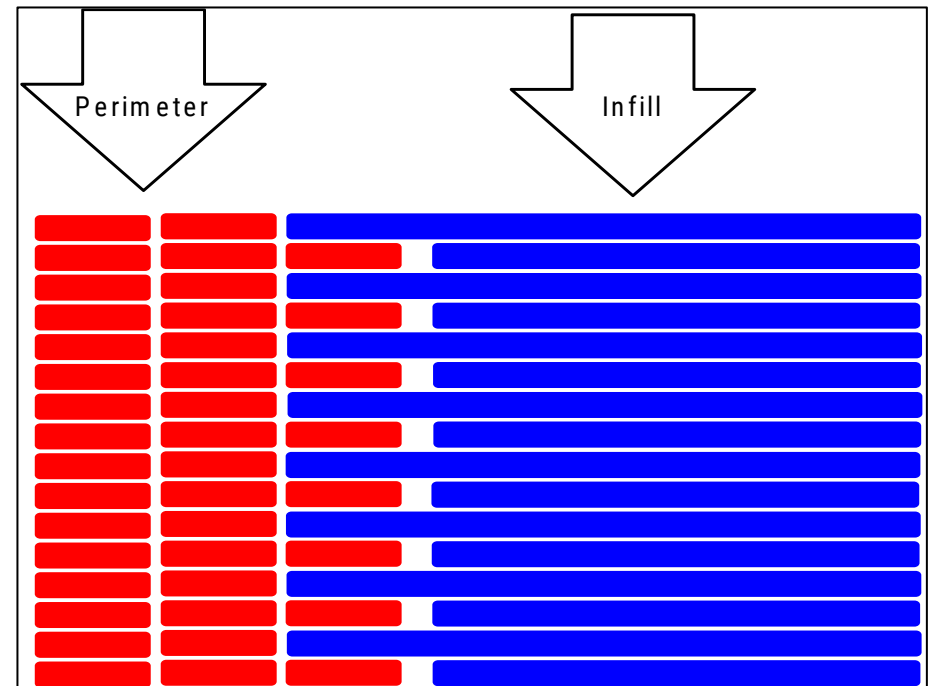
100 Num loops = 6

A good trick is using decimals while setting the num loops: you will end up using a variable number of outer loops that gives better strength to printed parts.

The following images can help you to better understand the phenomenon (3d print sections)



*Num loops = 2*



*Num loops = 2.5*

As you can easily understand, the interlacing resulting from *num loops = 2.5* gives you considerably stronger parts.

#### Inset surface

“pushing” all faces of a part toward the inside. For instance, a 10mm cylinder with a 0,1mm inset will become a 9.8mm diameter.

This parameter is useful to tweak the “play” between parts (i.e.: printing a lid on a box with tolerance too tight)

#### Loop inside-out

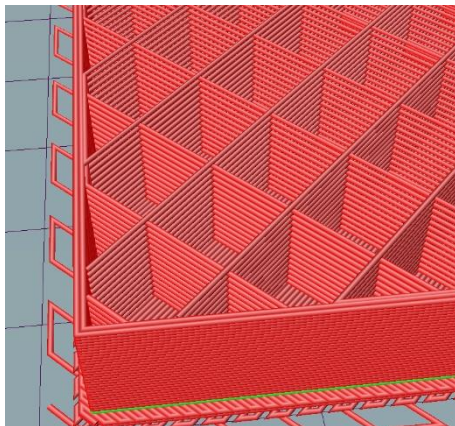
Defines loop/perimeter printing priority:

- Perimeter first: best dimensional precision
- Loop-perimeter: compromise between precision and surface quality
- Perimeter last: best surface quality

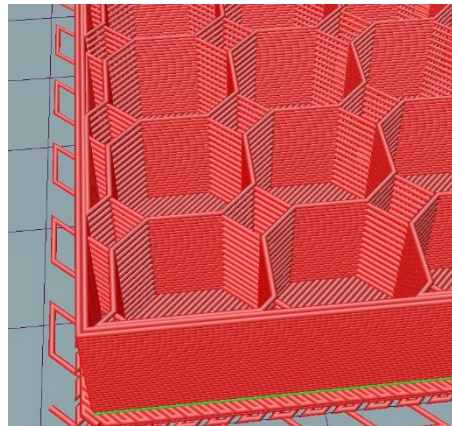
#### Infill style

You are given four choices:

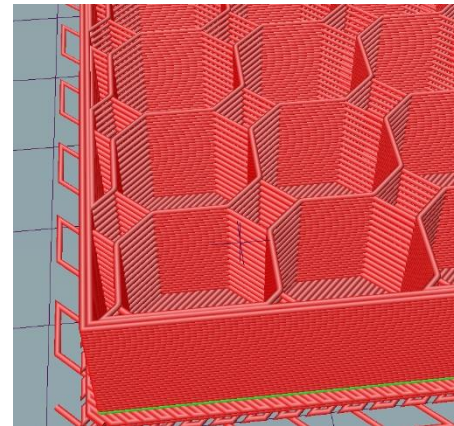
- Straight: fastest, less sturdy than the others
- Octagonal – Sturdiest, but also the slowest one
- Rounded – speedier version of Octagonal
- Cellular – 3D fill pattern inspired to Octagonal, perfect for isotropic performances (i.e.: elastomer infill)



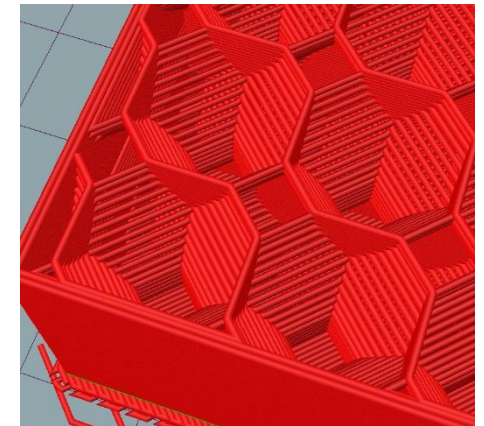
105 Straight



104 Octagonal



103 Rounded



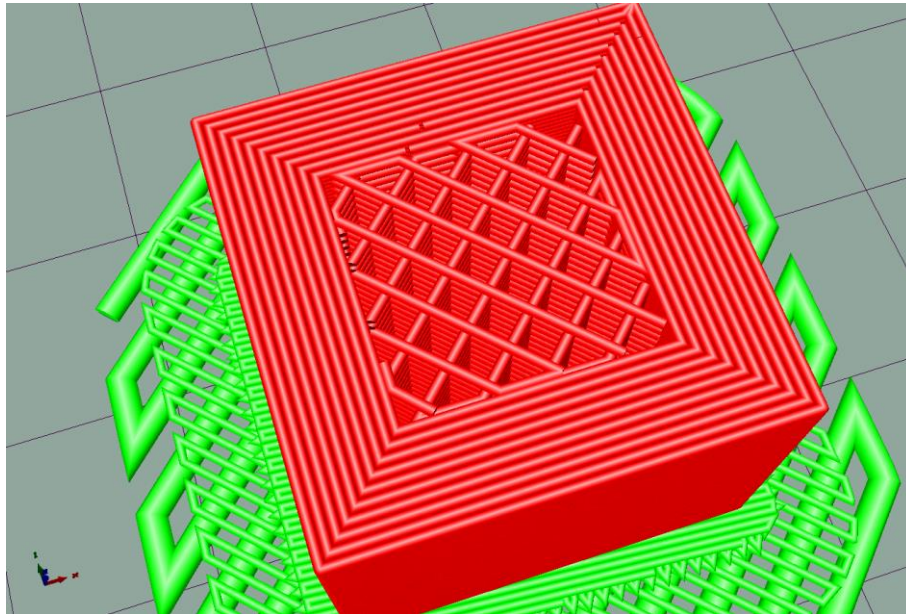
102 Cellular

•

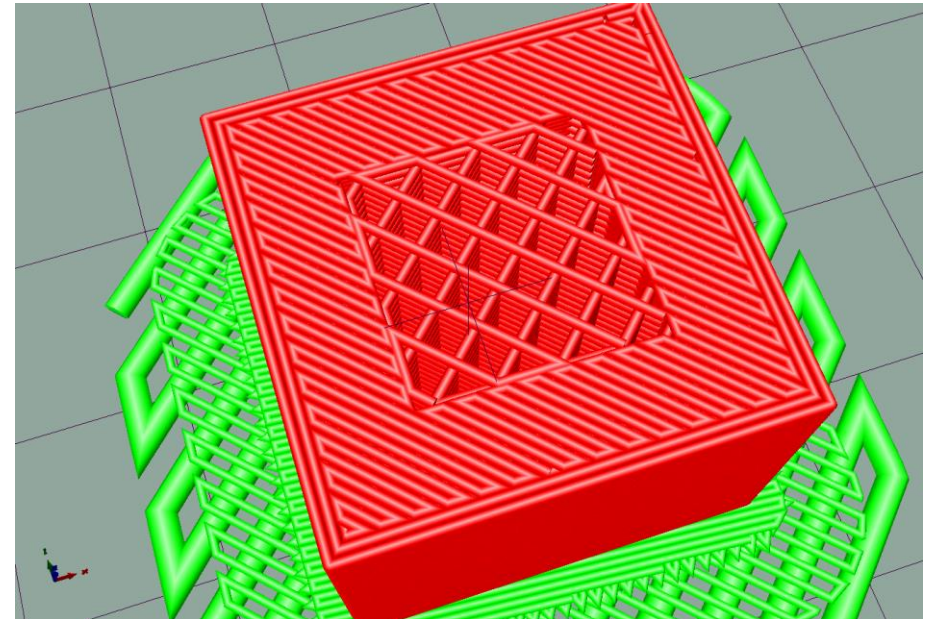


#### Skin thickness

This parameter sets (mm) the thickness of all outer surfaces. If the number of loops is not enough to reach desired thickness, SSI will generate a zigzag pattern to get to desired thickness (usually taking longer to print)



106 loops = 10, skin thickness = 4



107 Loops = 2.5, skin thickness = 4

#### Angle

The orientation (0..360°) to move the “seam” around on the printed part. Do note that SSI tries to place seams on corner edges to get better aesthetics.

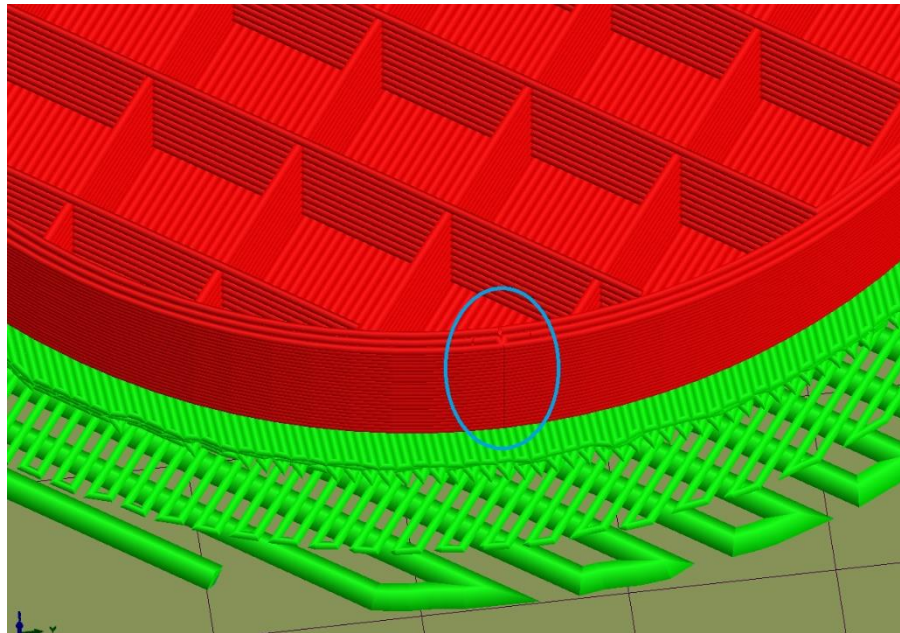
Looking at the part from above on the printing plate

0° will move seams to the right side

90° will move seams to top/back side

180° will move seams to the left side

270° will move seams to the front side

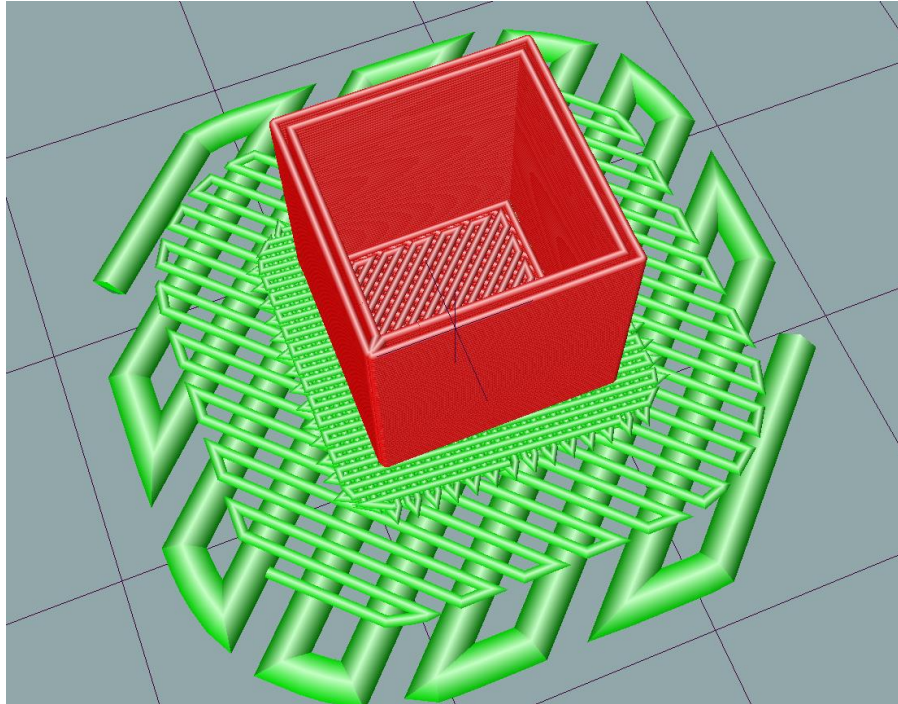


108 Seam

Set to the desired part density percentage (2...100%), like the EASY mode settings.

Two more settings are available here

- "hollow" to get empty parts, without infills. This option may get parts that fail to print correctly (i.e.: if you have large flat top surfaces)
- "vase" to get empty parts without top surfaces



109 Cube printed in VASE mode

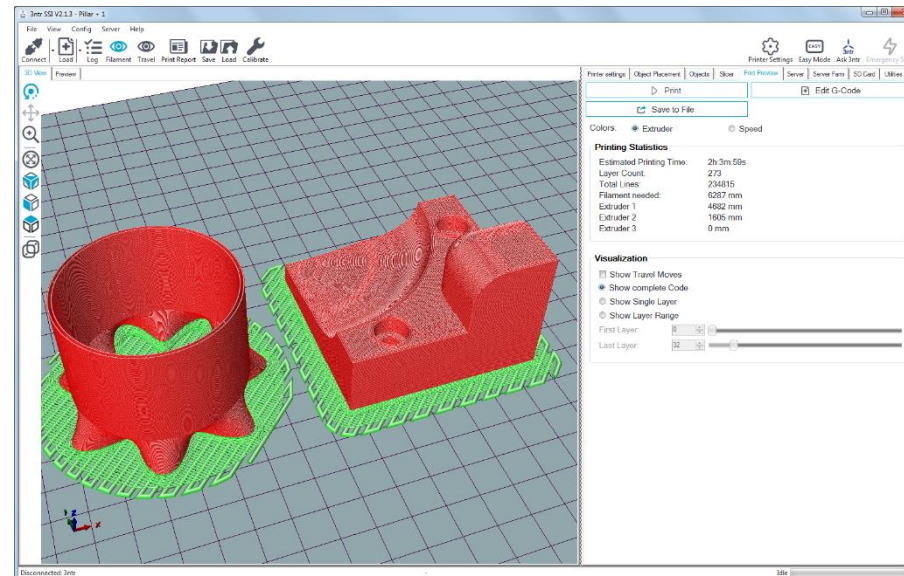


## Print preview

This tab is active only if there is a gcode loaded (after slicing or from disk).

It is always a good idea to use preview BEFORE committing to a real PRINT to avoid mistakes that can cost a lot both from spent materials view and commercially (time is money and delivering a bad quality part is always an awful idea).

Get used to visually review the printing process to find geometrical problems of silly mistakes into print settings.

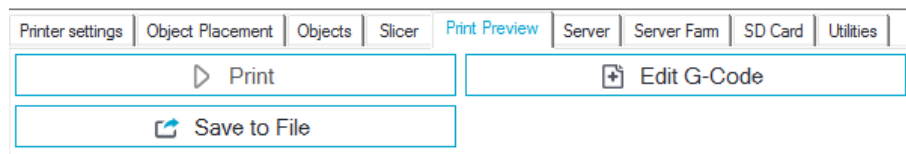


110 Print preview

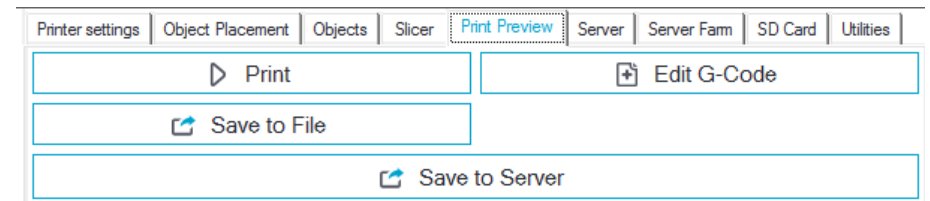


Into the upper part of the tab you find three buttons or four buttons, depending on how you are connected to the printer:

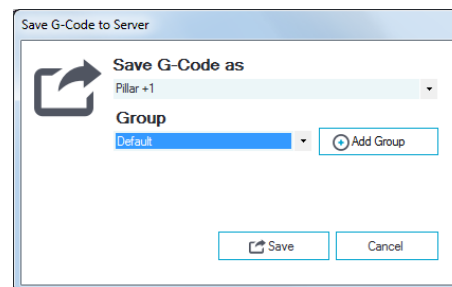
- Print  
Runs the gcode visualized on the connected printer  
In case you are using a print server, this command will print BUT won't save anything on the print server. No one will be able to see/copy/modify your gcode. This option is useful for several teams sharing one printer without risking dissemination of any geometry. Of course, anyone can still take pictures of what is being currently printed.
- Save to file  
saves the gcode on a user-selected position (a file dialog pops up)
- Save to server  
saves the gcode on the print server, to be printed later. At this stage you can decide to how to name the gcode and the group you want to save to.



113 Printer directly connected (or no connection at all)



112 Printer connected thru print server



111 Save to print server

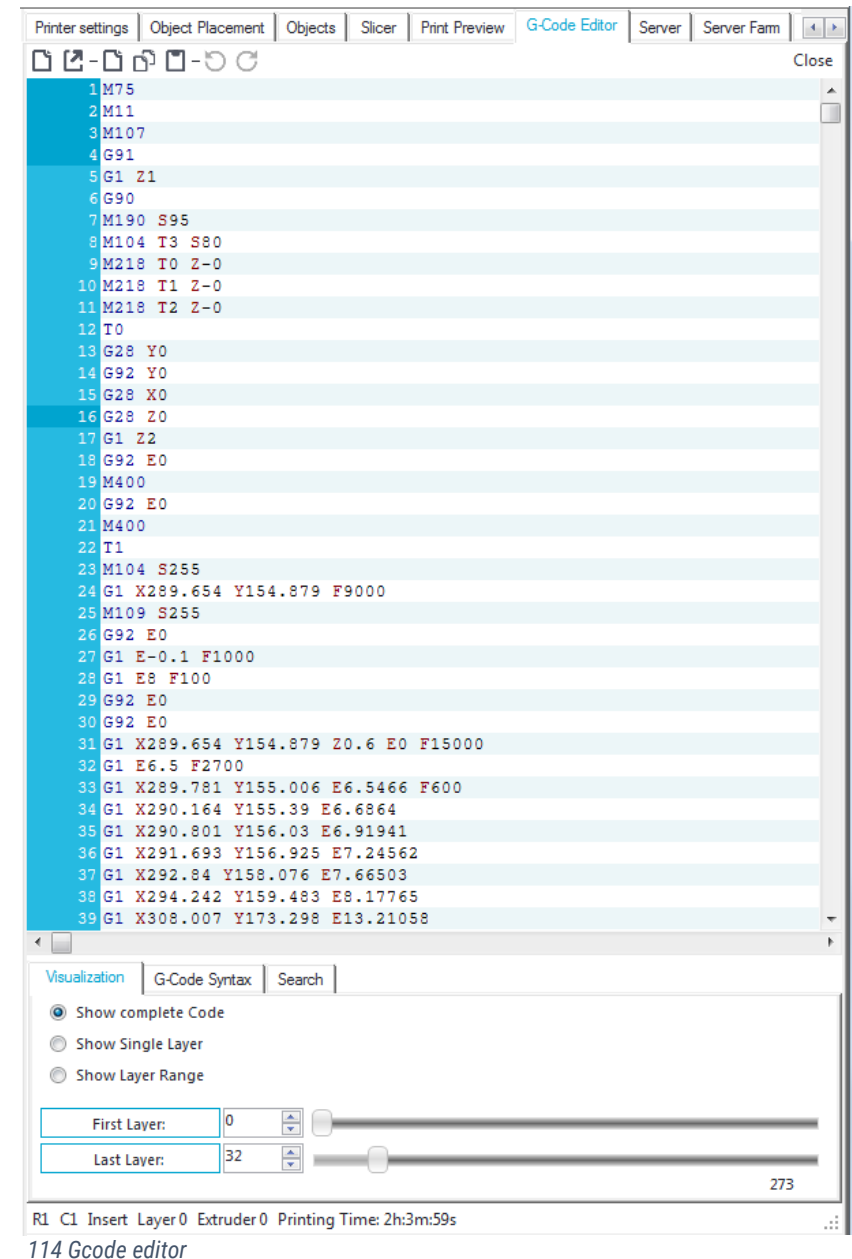
- Edit G-code

This option only available into ADVANCED mode: opens a text editor (into a new tab) letting you check and changing the existing gcode.

*This function is reserved to advanced users, with good knowledge of machine and software commands!*

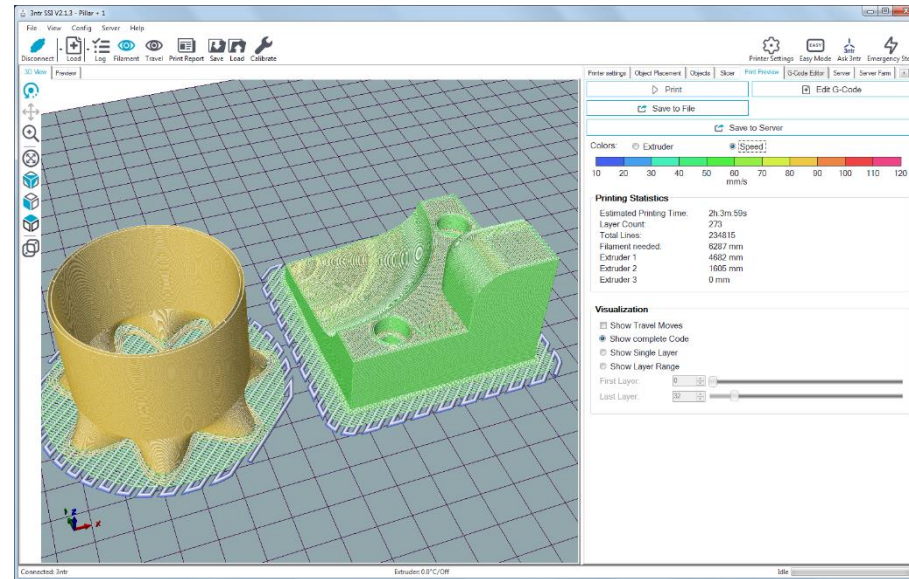
When this option is selected, this tab is divided into three areas:

- Top tool bar with several icons
  - New text (clears current gcode, preventing any further print)
  - Save (save current gcode into a user-selected file name and position)
  - Cut – remove the selected text (putting it into the clipboard – you can paste it back)
  - Copy – copy selected text (putting it into the clipboard – you can paste it back)
  - Paste – copy the text into the clipboard at current cursor position
  - Undo – cancel latest changes
  - Redo – last undo will be restored
  - Close – ends editing session, removes the editor tab
- Interactive editing area – here you see and change the gcode
- Bottom window, with three tabs
  - Visualization, where clicking on “first layer” or “last layer” will move the text accordingly to the slider positions. You can also choose the range of layers (complete, single, range) to be visualized into 3d area
  - Gcode syntax: selecting a gcode line will show here a brief explanation of current command
  - Search: basic search and replace tool



Below the three Print/Edit/save buttons we find two small buttons ("colors"):

- "Extruder" - this is the default option showing the 3D view with different colors for each extruder used during the print
- "Speed" - colors are depending on printing speed (a legend is shown, blue for slowest speed, purple for the fastest)



115 Speed visualization

The middle area is used to display a time and material usage analysis.

Lower part of the screen deals with visualization, with various options:

- Show travel moves (all movements with no extrusions)
- Show complete code
- Show single layer (using "first layer" slider)
- Show layer range (using "first layer" and "last layer" sliders)

## SD card

When the printer is fitted with an SD card, this section lets you deal remotely with it.

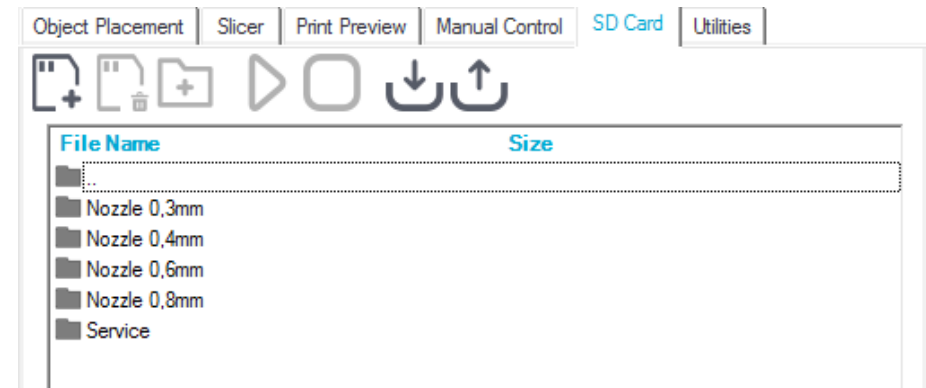
---

*All the SD functionalities are quite slow – we recommend using those capabilities for maintenance only.  
Print server is the preferred solution in any situation!*

---

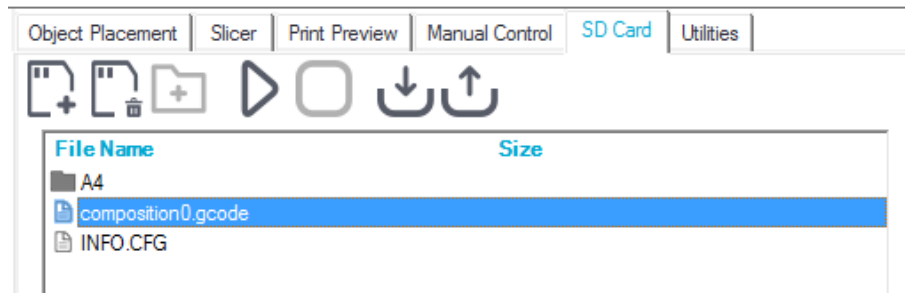
The upper part of this tab has a toolbar with the following icons:

- Upload: pops up the SD-card upload window
  - Uploaded filename: insert here the filename to save on SD card
  - Include "Start" and "end" code: keep this disabled
  - Include Job finished commands: keep this disabled
  - Upload current gcode: uploads the gcode currently into "Print preview"
  - Upload external file: choose an available file on your PC
- Delete file: removes the selected file
- New folder: disabled function

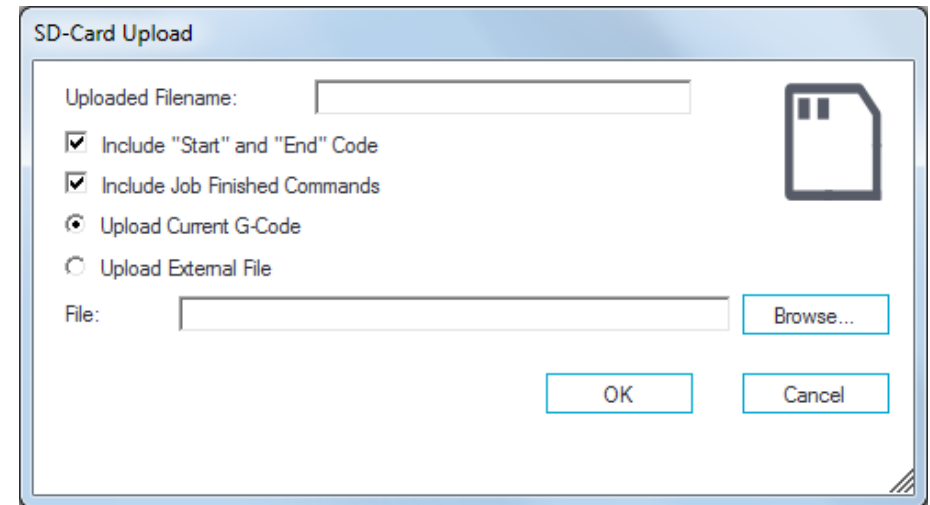


116 SD card tab

- Run program: runs selected gcode
- Pause/Stop current program
- Insert SD card: force SD card reloading
- Remove SD card: close open files on SD to safely remove it



118 File on SD



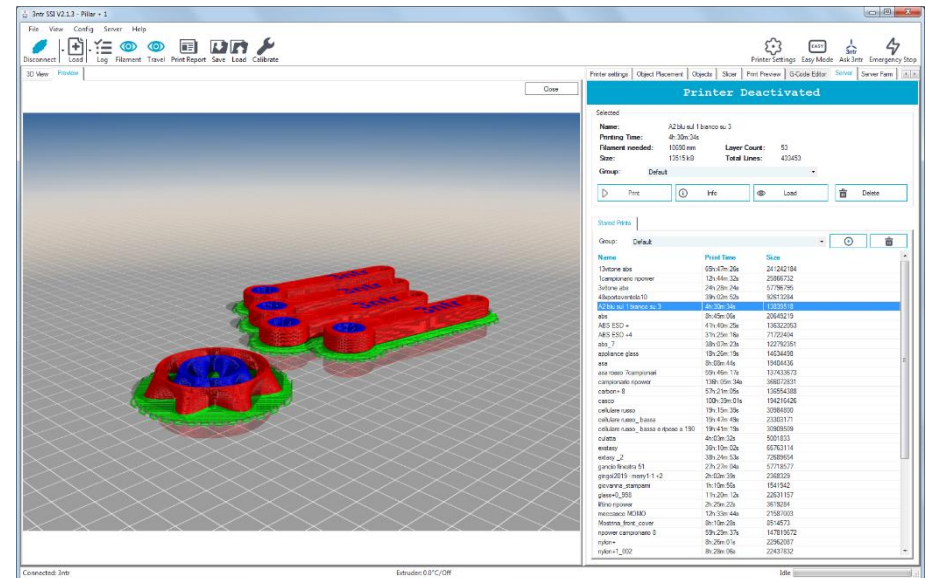
117 SD card upload

If you connected SSI to a print server, this tab will show the files available on the connected printer.

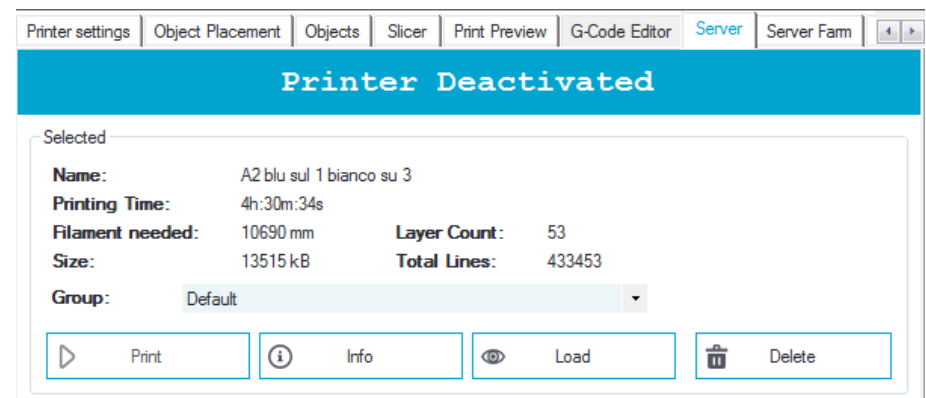
Clicking on any file of the list presented will show the rendering on the “preview” window.

On the top part of the tab are featured several controls:

- Printer status (deactivated, connected, printing)
- Information on the selected file
- Print (immediately prints it on the connected printer)
- Info: an information window pops up, showing some statistics
- Load: load the selected gcode into SSI, letting you visualize and analyze it
- Delete



119 Server tab



120 Top Server tab area

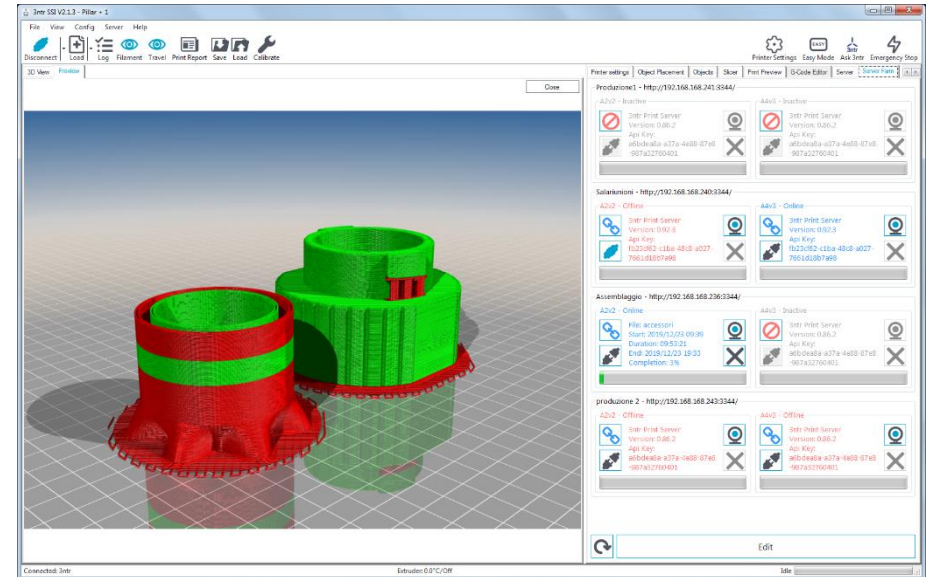
## Server farm

SSI lets you manage several print servers, getting an unlimited number of printers under your control.

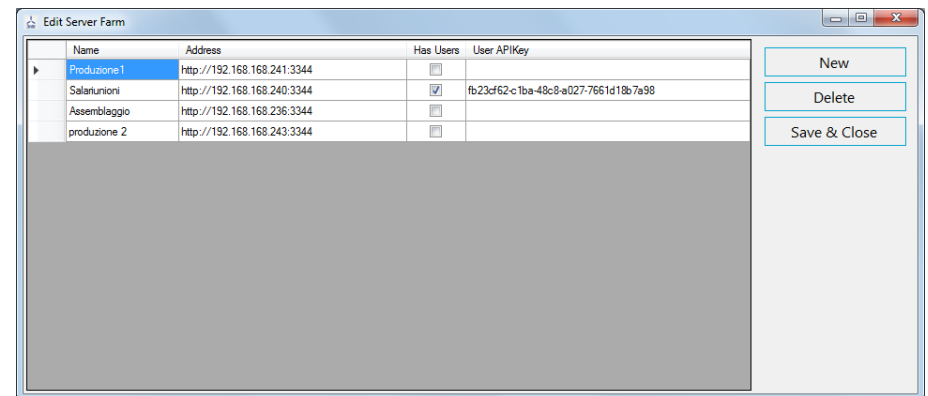
On the bottom part of the tab there is the “EDIT” button that gets you to the server farm administration settings (picture 122).

The right part of this panes shows three buttons:

- New – to insert a new print server, you need to insert the following information
  - Name (any combination of numbers and digit will do)
  - Address, such as “http://192.168.168.155:3344” will do – be sure to copy a working address! Paste it into a web browser to verify it.
  - Has users: this flag must be set if you are using a print server where users are defined (i.e.: any time you use a browser to manage it, if you are asked to login then there are users defined on it)
  - USER API - this field may be left blank
- Delete – to delete selected print server. Stored information won’t be deleted
- Save and close – to confirm any modification









121 Print server farm




122 Print farm administration panel


The list of print servers shows, for each one, a recap of the printer(s) connected.  
For each printer there are five controls available:


-  When printer is active and connected to the print server.
-  When printer is not active
-  When printer is the current SSI printer (only one active at any given time)
-  Printer not connected to SSI
-  Webcam available
-  Webcam not available
-  Stop printing process


Assemblaggio - <http://192.168.168.236:3344/>

A2v2 - Online

 File: accessori




 Start: 2019/12/23 09:39


 Duration: 09:53:21


End: 2019/12/23 19:33


Completion: 3%

A4v3 - Inactive

 3ntr Print Server



 Version: 0.86.2



Api Key:

a6bdea8a-a37a-4e88-87e8-987a32760401

123 Print server recap



Printing progress (5% completed, in this case)



## Utilities

This section has several peculiar SSI functionalities.

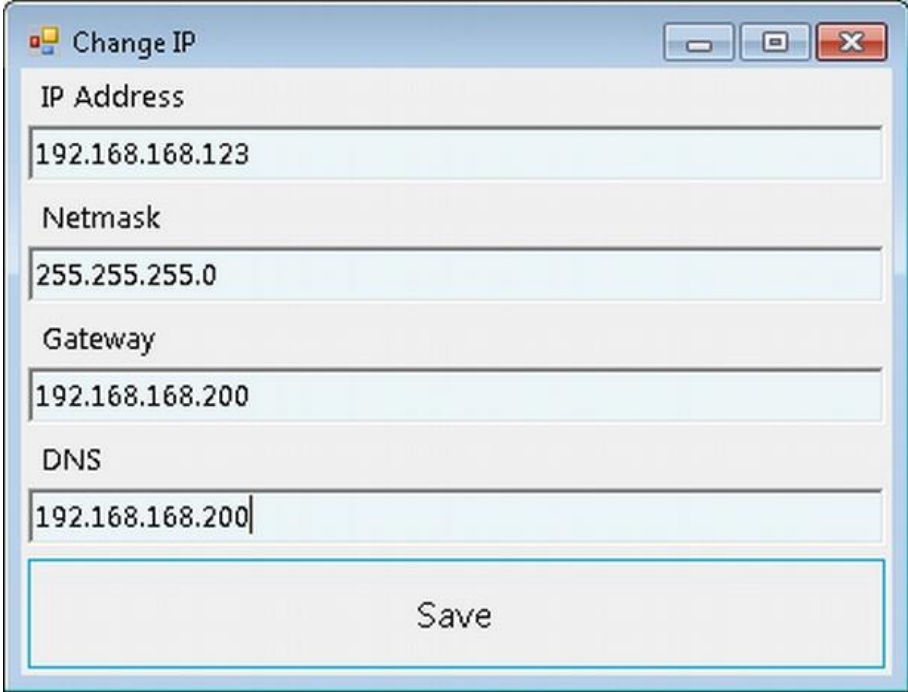
### Print server

Easy to use configuration tool (works with print sever delivered after May 1st, 2018)

This function lets you easily configure the print server, using a USB pendrive.

*IMPORTANT: the configuration of a networked device should be performed only after getting relevant information from your IT manager – DON'T ATTEMPT ANYTHING IF YOU DIDN'T RECEIVE THE NETWORKING PARAMETERS AND THE RELEVANT AUTHORIZATIONS*

1. Use the “Print server” function to fill the required fields
  - IP Address: the IP to assign to the print server
  - Netmask: print server masking value
  - Gateway: the IP address of the device managing the LAN traffic (usually a router or firewall)
  - DNS: usually same address as the gateway, handles the machine addressing on customer LAN
2. Press “Save” to save the file on an USB stick. We recommend using one with an activity LED
3. When writing process is over, remove the USB stick (be sure to use the windows “safely remove” function)
4. Plug the USB stick into the print server (must be turned OFF and detached from the LAN)
5. Turn ON the print server: the configuration file will be read, and print server will be flashed with the desired configuration
6. Wait for the procedure to complete (typically it will take 2-3 minutes)
7. Power off the print server
8. Remove the USB stick and connect the print server to the LAN
9. Power on the print server: now it will be reachable at the desired address at port 3344 (i.e.: 192.168.168.123:3344)



Change IP

IP Address  
192.168.168.123

Netmask  
255.255.255.0

Gateway  
192.168.168.200

DNS  
192.168.168.200

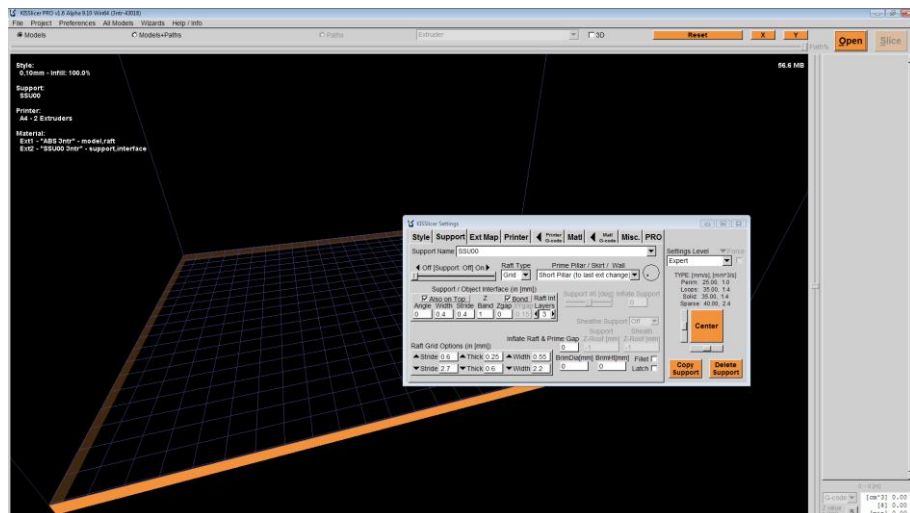
Save

124 Print server IP configuration

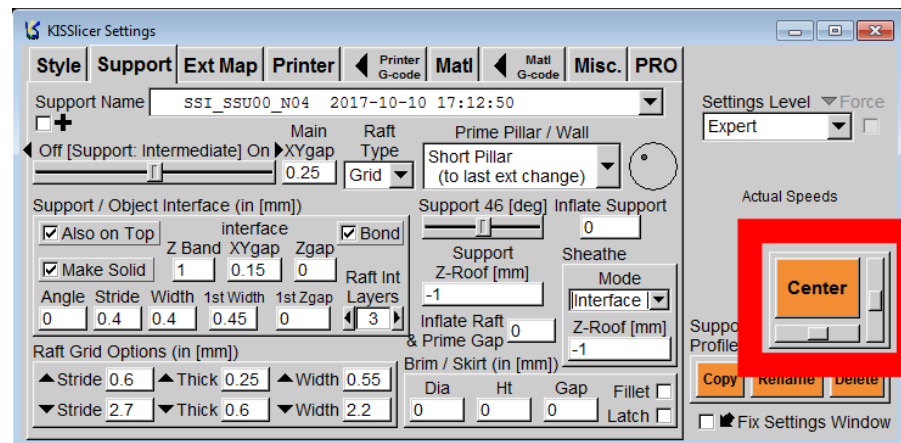
To deal directly with the slicing engine.

You must have an object placed and slicer parameters correctly set to access this function. A KISSLICER session will start and you will be given full power to do anything you like. You can change any parameter EXCEPT the license key: you may crash the installation !

You are free to play and save any parameter you want: no change will interfere with SSI factory settings – they are protected and constantly up-to-date.



126 Kisslicer control panel



### 125 Kisslicer XY centering controls

*Only for trained people – no support is given for this option, unless you have been attending advanced training lessons.*

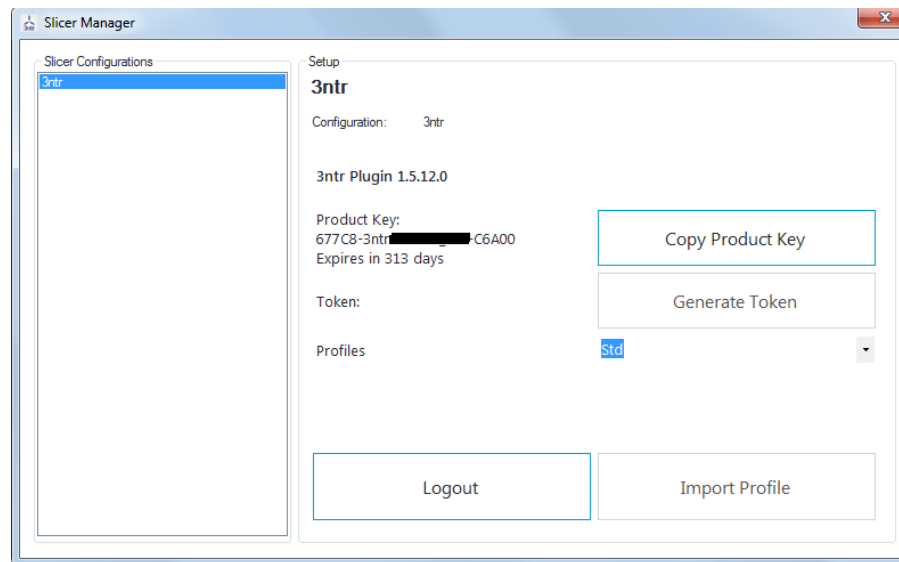
*IMPORTANT: when you use KISSLICER be sure to reset coordinates using the CENTER (see pic 125 ) button before returning to SSI, if you changed the XY positioning sliders – failing doing so you may experience part centering problems in SSI.*

Forces the SSI update process (automatically performed at program start).

---

*The update process works only for active subscriptions.  
Clicking on "manager" button on the slicing tab (picture 127 ) you can see if your license is still active.*

---



127 Manager pop up screen

# Appendix 1 - Installation

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## Prerequisite

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[Download the installer here.](#)

Hardware requirements:

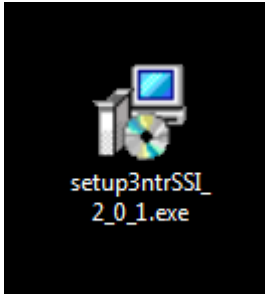
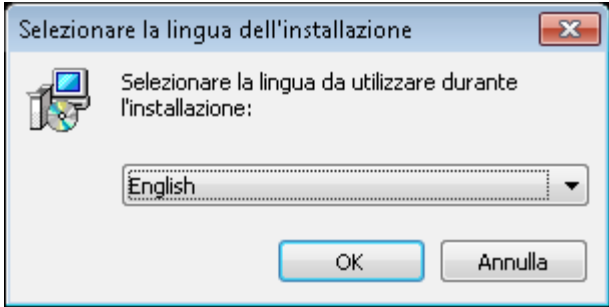
- Operating system: Windows XP / 7 / 8 / 10
- Ethernet connection (Internet and print server)
- USB connection (direct printer connection)

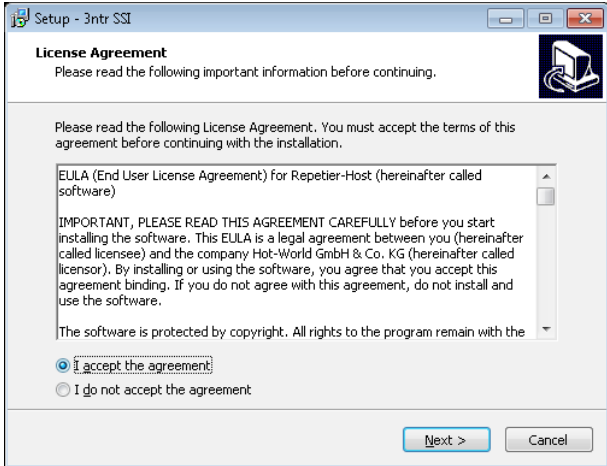
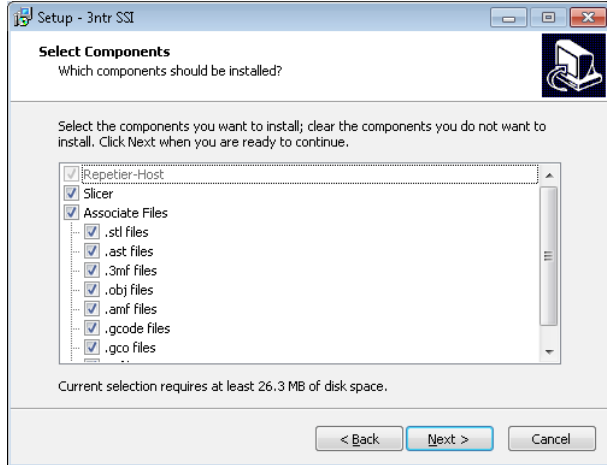
Before proceeding, be sure to have:

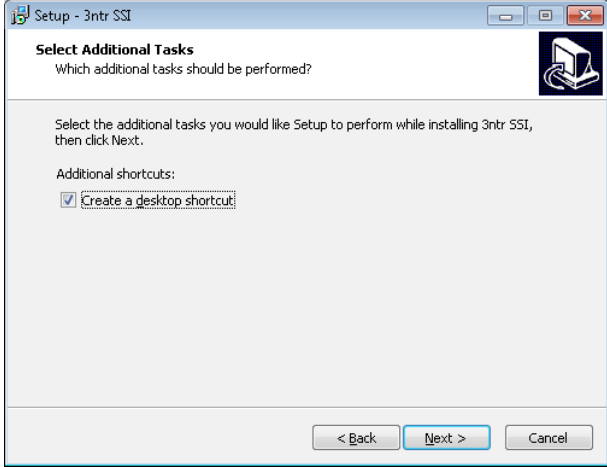
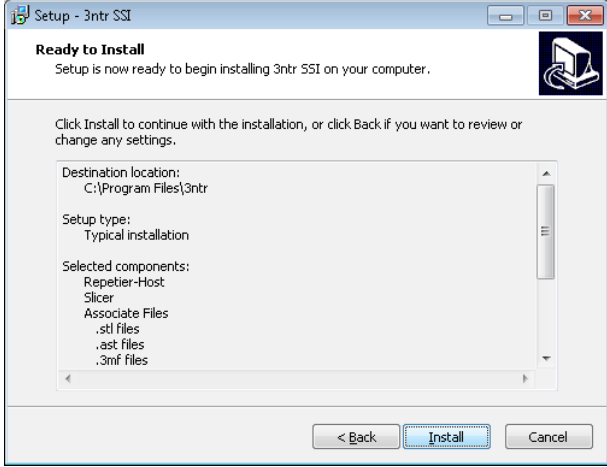
- SSI license, supplied with any 3ntr printer (NB.: SSI works exclusively with 3ntr licenses)
- Permission to install new software on your PC (you may need administrator password)
- Working internet connection or email access

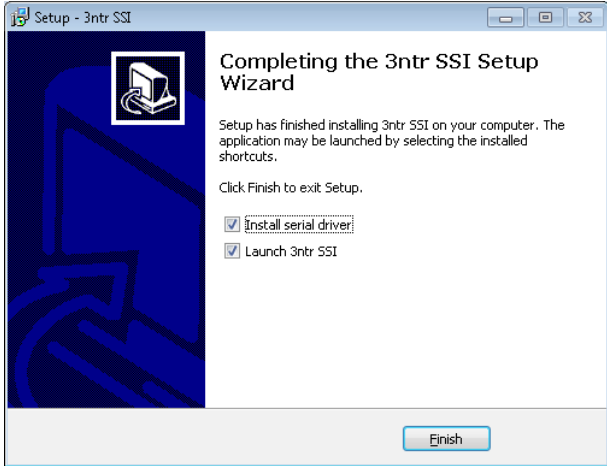
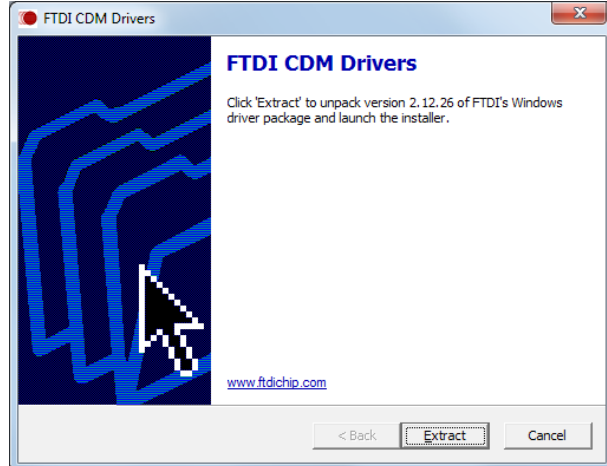
NB.: 3D printer must be unplugged to PC during install

# Procedure

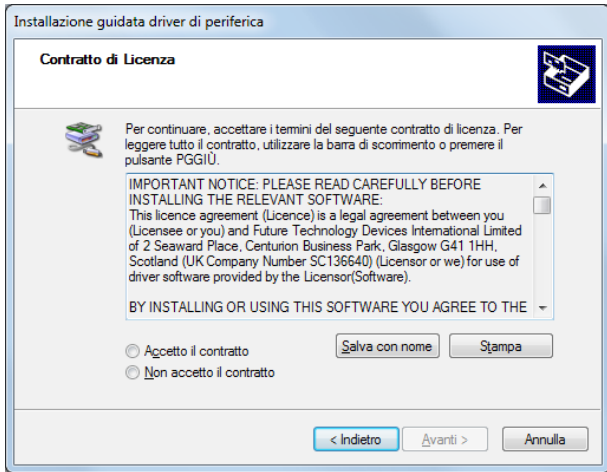
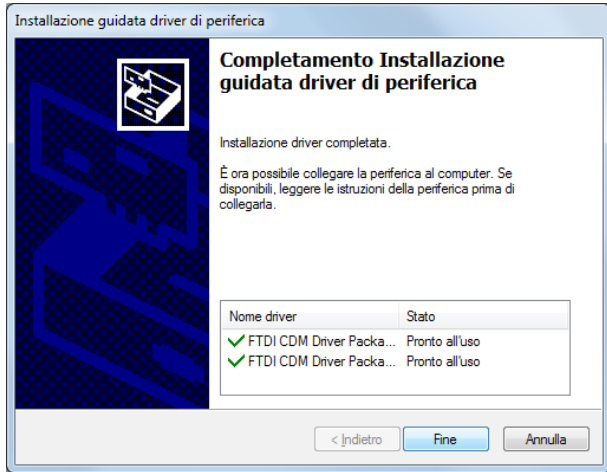
1	Be sure that no other program is running on your PC	
2	Start installation clicking on installer icon (fig.128)	<div><p>128 SSI installer</p></div>
3	Installation process will start, asking for installation language (fig.129). We are choosing now ENGLISH, but you are free to choose any language that suits you	<div><p>129 Choose language</p></div>


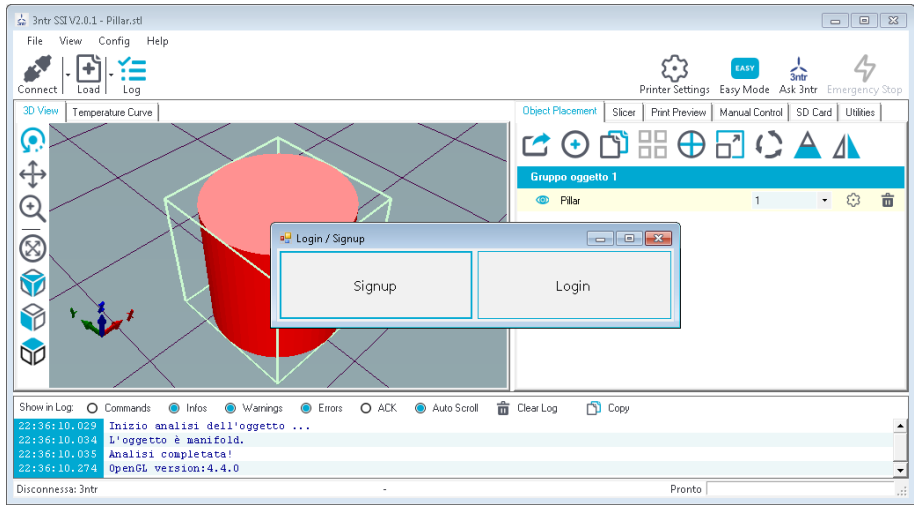
<p>4</p>	<p>Then you have to accept the license agreement.</p> <p>Select “I accept...” then click on “NEXT” to continue with installation. If you don’t agree with the terms, installation will quit.</p>	 <p>130 License agreement</p>
<p>5</p>	<p>Next is component selection.</p> <p>We recommend the default installation: click on “Next” to continue</p>	 <p>131 Component selection</p>

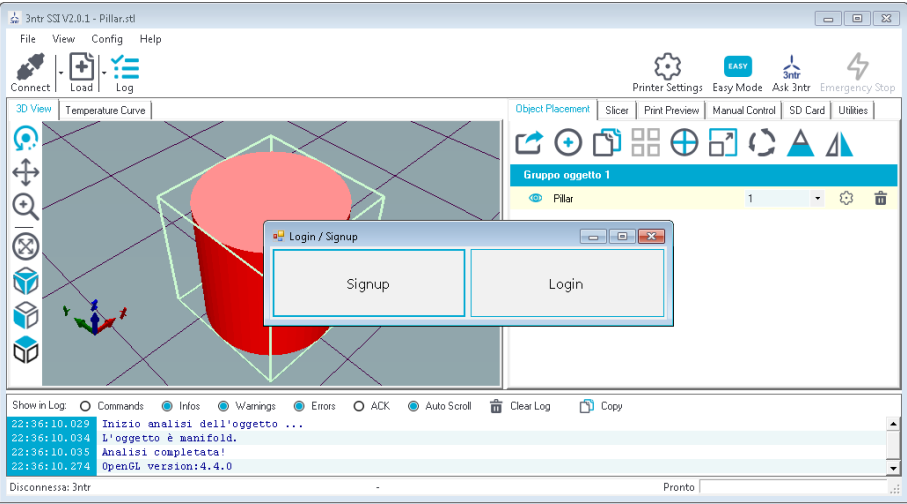
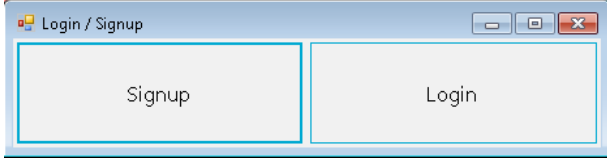
<p>6</p>	<p>Will be asked permission to put a desktop shortcut to SSI.</p> <p>Click on “Next” to continue.</p>	 <p><i>132 Desktop shortcut creation</i></p>
<p>7</p>	<p>Installation can now start.</p> <p>It should take few seconds – should be taking several minutes could be a symptom of problems on your PC.</p>	 <p><i>133 Ready to install</i></p>

8	<p>After SSI install you will be asked to install serial drivers.</p> <p>Even if you are going to use a print server, having those drivers on your PC won't keep you from using direct connection should you have any emergency.</p>	 <p>134 Driver install</p>
9	<p>Click on "Extract" to proceed.</p>	 <p>135 USB driver install</p>



10	<p>You will be asked to accept the drivers license.</p> <p>Select “I agree...” then click on “Next” to continue.</p>	 <p>136 Licensing drivers</p>
11	<p>After few seconds the drivers will be installed.</p>	 <p>137 Driver installed</p>

12	SSI will be then starting for the first time	 <p>138 Starting SSI</p>
13	<p>You will be asked to register your copy to validate the installation.</p> <p>Follow the relevant following pages for Registration – ONLINE or Registration – OFFLINE.</p>	 <p>139 Register your copy</p>

<p>1</p>	<p>Using the online procedure, you will be up and running quickly and future upgrades will be performed effortlessly.</p> <p>At first start, you will see the screen depicted into fig.140</p>	 <p>The screenshot shows the 3ntr SSI V2.0.1 software interface. The main window displays a 3D model of a red cylinder on a grid. A 'Login / Signup' dialog box is overlaid on the 3D view, with 'Signup' and 'Login' buttons. The interface includes a menu bar (File, View, Config, Help), a toolbar with icons for Connect, Load, and Log, and a right-hand panel with tabs for Object Placement, Slicer, Print Preview, Manual Control, SD Card, and Utilities. A status bar at the bottom shows 'Disconnessa: 3ntr' and 'Pronto'.</p> <p>140 Register your copy</p>
<p>2</p>	<p>You will be asked to signup or login. If this is your first time, you must register. If you are installing a copy of the license, you need to LOGOUT from the license installed on other PC before clicking on LOGIN.</p>	 <p>The image is a close-up of the 'Login / Signup' dialog box. It has a title bar that says 'Login / Signup' and two buttons: 'Signup' and 'Login'.</p> <p>141 Signup or login?</p>

3

You are given a form (fig.142) to fill out with your data.

Two address are there in case that the printer is operated in a different place than the administrative offices.

Be careful when typing the product key: wrong data won't let you enable the installation.

Clicking on "Signup" SSI will be enabled – a working online connection is required during this phase.

The image shows a software window titled "Signup" with a standard Windows-style title bar (minimize, maximize, close buttons). The window is divided into three main sections: "Business", "User", and "Printer". Each section contains several text input fields. The "Business" section includes fields for Business Name, Nation, Region, City, Address, and VAT. The "User" section includes fields for Name, Surname, Email, and Phone Number. The "Printer" section includes a dropdown for Printer Model, a text field for Printer Number, and fields for Nation, Region, City, Address, and a Product Key. At the bottom of the window is a large "Signup" button.

Business	
Business Name:	Nation:
ACME Inc	USA
Region:	City:
Nevada	Las Vegas
Address:	VAT:
192 Long Road st.	1234569

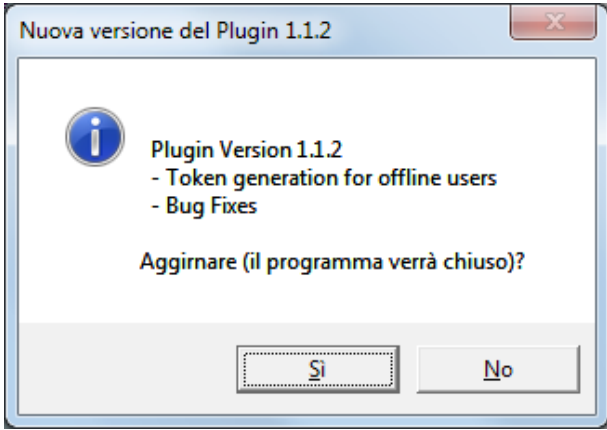
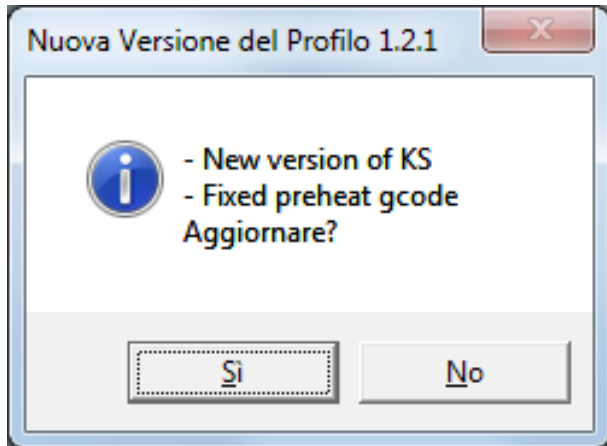
User	
Name:	Surname:
Wile	Coyote
Email:	Phone Number:
slowpoke@meep.it	1112223334

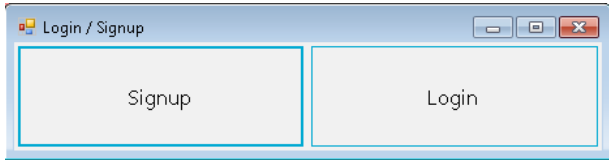

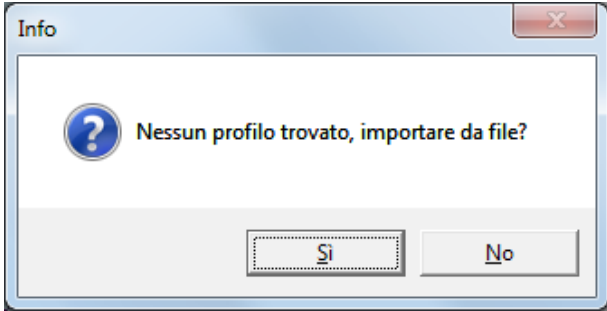
  

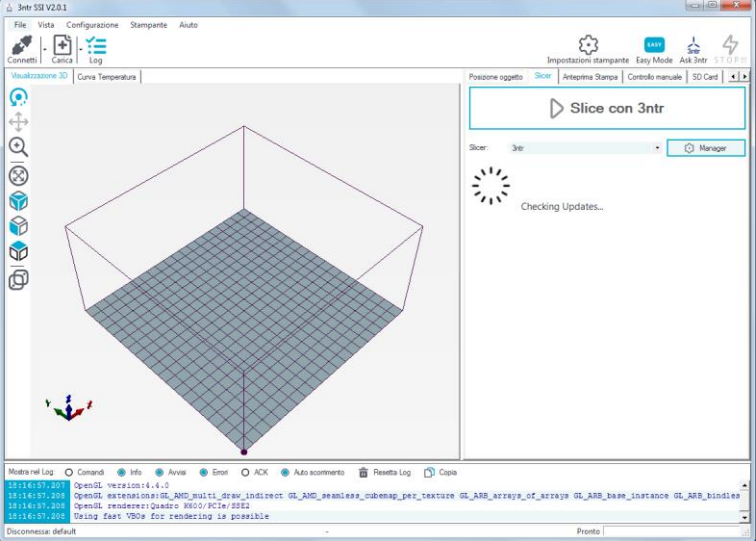
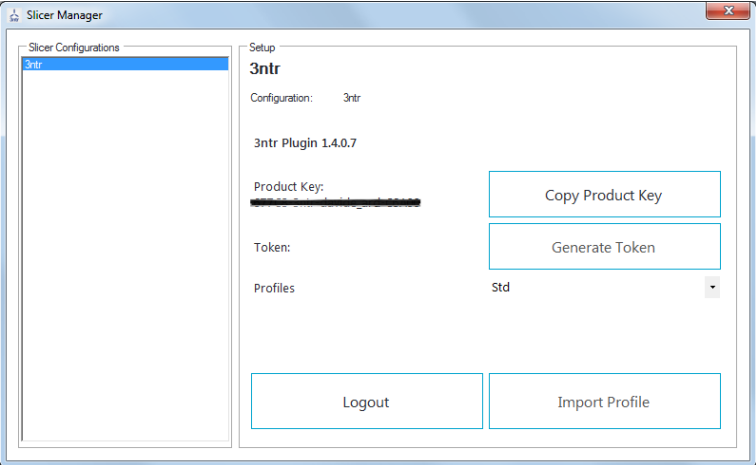
Printer	
Printer Model:	Printer Number:
A2 - 2 Extruders	22123456
Nation:	Region:
USA	Nevada
City:	Address:
Area 51	Yuma rd.
Product Key:	
1234-1234-1234-7799	

Signup

142 User registration

4	<p>If signup process completed successfully, SSI will check availability of more up-to-date plugin versions: if available, you will be asked if you want to upgrade.</p> <p>Click on “Yes” to accept upgrading.</p>	 <p>143 Software upgrade</p>
5	<p>After plug-in software upgrade, SSI will be restarted.</p> <p>Now will be tested availability of upgraded print profiles. If available, you will be proposed to upgrade.</p> <p>Click on “Yes” to accept upgrading.</p> <p>Now SSI is ready to use!</p>	 <p>144 New print parameters available</p>

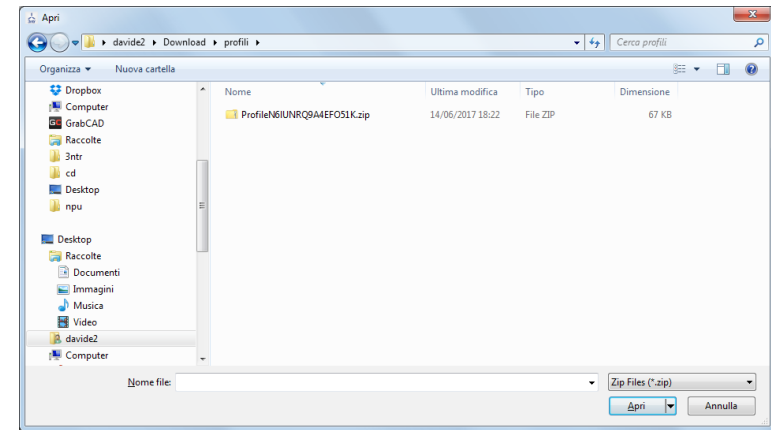
1	<p>If you can't get online, you are still able to register and get upgrades.</p> <p>When you get the "Signup/login" screen, dismiss it closing with the white cross (top right Fig.145)</p>	 <p>145 Signup or login ?</p>
2	<p>SSI will propose you to create a "token" (registration request).</p> <p>You must type your product key taking care not to make mistakes.</p> <p>Let the checkbox "Save token on file" enabled.</p> <p>Clicking on "Create" SSI will generate the "TOKEN.TXT" file to send to <a href="mailto:support@3ntr.net">support@3ntr.net</a></p>	 <p>146 Token generation</p>
3	<p>At next restart SSI will ask to import profiles from file.</p> <p>Clicking on "YES" import procedure will start.</p>	 <p>147 Import token (profile)</p>

4	Same procedure can be started using the “manager” button on the “slicer” tab...	 <p>148 Manager button</p>
5	...will open this window to let you generate tokens and import profiles.	 <p>149 Token generator / Profile importer</p>



6

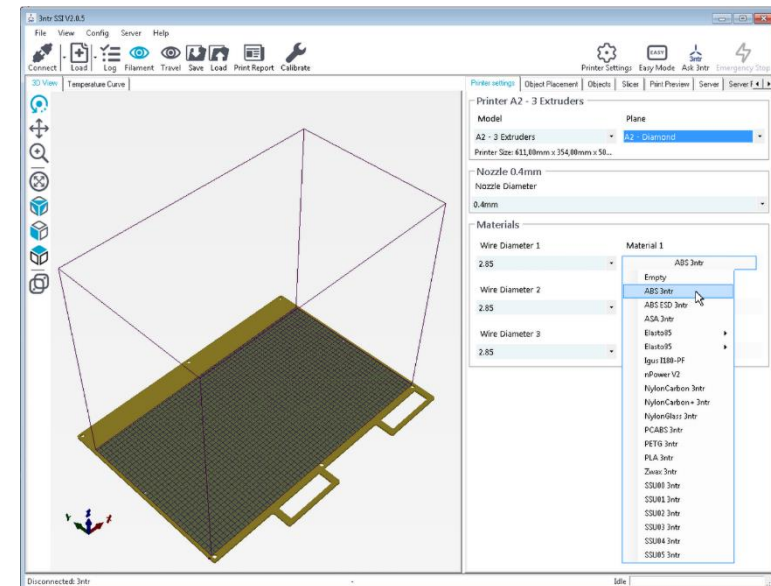
Once received the file from 3ntr, you can import it selecting from the provided file opener dialog  
Select the file (\*.zip) then click on "Open".  
SSI will the proceed to automatic upgrading.



150 Profile importer

7

After upgrading your screen should look like this:



151 SSI correctly started

## Appendix 2 – Printer connection

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After SSI install is completed, you need to decide how to connect to your 3D printer.


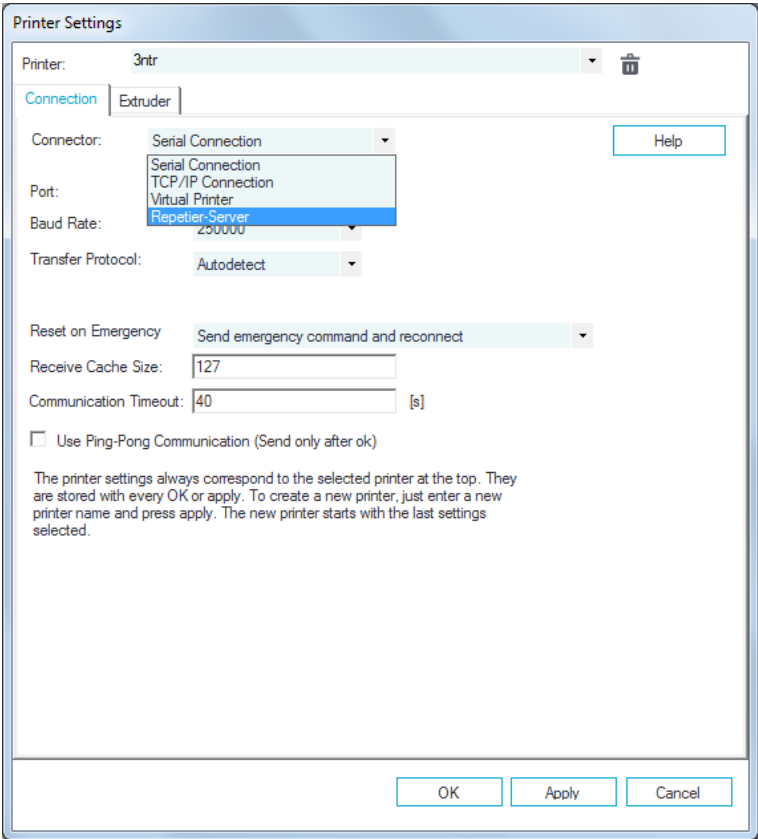
Three possible scenarios:

- Network/print server - Using local (or remote) networking to connect to print server
- Direct USB connection
- SD card - This is a deprecated solution:
  - SD cards are known to give read errors – making you lose a print, maybe just at the last few mm
  - Juggling with several SD kills your statistics
  - SD card can be easily damaged (removal from PC before dismounting)
  - You may lose SD cards around
  - SD can wear the receptacle on machine

Following pages will be helping you to deal with above #1 and #2 cases

Printer connected to print server

This is the recommended solution, giving the best user experience. Many user can share one printer, yet administrator can grant various access rights.

1	Start SSI and select "printer settings" icon	
2	The "printer settings" window will open: from "connector" drop down list choose "Repetier server"	
3	Select <u>Server farm</u> tab and follow the procedures to add a new instance.	

152 Choose your connection method

## Printer connected with USB cable

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This connection method is not recommended for production - countless chances are there to make your life difficult with USB:

- System upgrade requiring overnight reboot
- System slowing down due to CPU intensive tasks (ie: rendering, 3DCAD, CAE...)
- Physical link interruption (ie.: someone steps into USB cable)

---

*Always unplug printer before SSI installation*


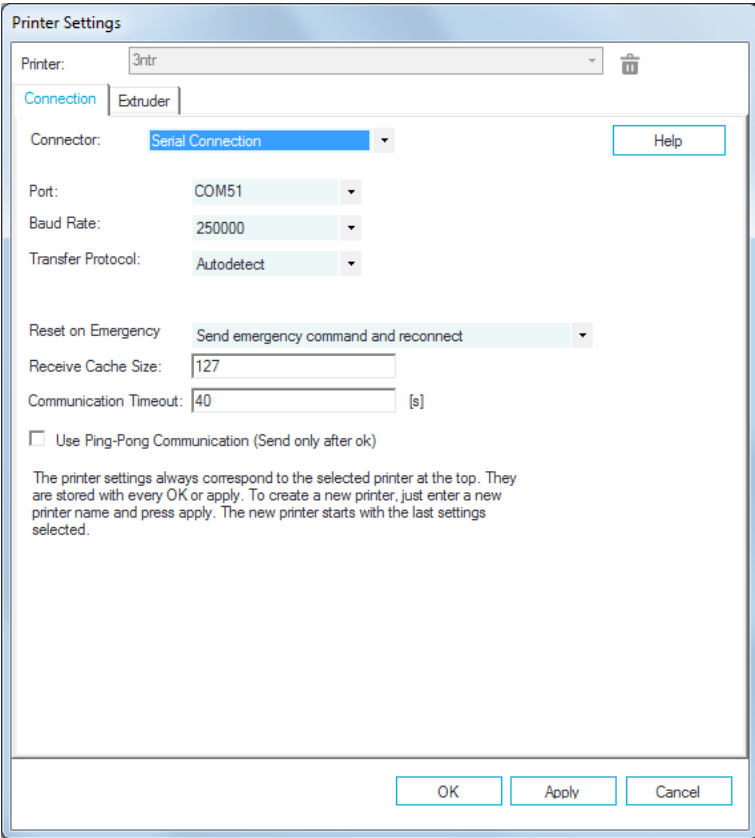

---



1

Connect printer to PC with supplied USB cable.  
Turn on PC  
Turn on printer.  
Wait for automatic PC port configuration.



153 USB connection

2	Start SSI and click on “printer settings”	
3	<p>The “printer settings” window will open - from “connector” drop down list choose “Serial connection”</p> <p>Port is set to “AUTO”. If it doesn’t work, you must set it manually: from the “port” drop down list select the highest number available.</p> <p>Click on “Apply” then “OK”.</p>	 <p>154 USB settings</p>
4	Click on “connect”.	

5	<p>If log is enabled, you will see some screen activity – after few seconds it will settle. Connection will be established, and you will be able to start using your 3D printer!</p>	<div> <div>Show in Log: <input type="radio"/> Commands <input checked="" type="radio"/> Infos <input checked="" type="radio"/> Warnings <input checked="" type="radio"/> Errors <input type="radio"/> ACK <input checked="" type="radio"/> Auto Scroll  Clear Log  Copy</div> <div> <pre> 15:24:48.473 A4/Nozzle 0,3mm/XY_Extr_3.gcode 15:24:48.473 A4/Nozzle 0,3mm/Z_Extr_2.gcode 15:24:48.473 A4/Nozzle 0,3mm/Test_2_Extr.gcode 15:24:48.473 A4/Nozzle 0,3mm/XY_Extr_2.gcode 15:24:48.473 INFO.CFG 15:24:48.486 composition0.gcode 15:24:48.487 End file list </pre> </div> <div> <div>Connected: 3ntr</div> <div>Extruder: 26.0°C/Off Bed: 29.4°C/Off</div> </div> <div>155 Connected !</div> </div>
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## Appendix 3 – your firewall is blocking SSI

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If the registration process or updates won't work, chances are that your IT services are blocking our application.

IMPORTANT: sometimes firewalls and antiviruses are PARTIALLY blocking the connection at our servers – be sure to tag our servers as trusted.

You must open the following outside contacts

<http://helpdesk.3ntr.net>  
<https://helpdesk.3ntr.net>  
<http://159.253.98.86:7998>  
<https://ssi.3ntr.eu:8443/>  
<https://159.253.98.86:8443>

The following addresses are still in use but will be phased out during 2020:

<http://ssi.3ntr.eu>  
<http://helpdesk.3ntr.net>  
<http://159.253.98.86:7998>  
<http://159.253.98.86:80>  
<http://159.253.98.86:7999>

IF you don't know what this means, please revert to your IT manager!



## Appendix 4 – floating licenses

Any SSI license can be installed on a virtually unlimited number of PC, BUT at any given moment only one license must be active.

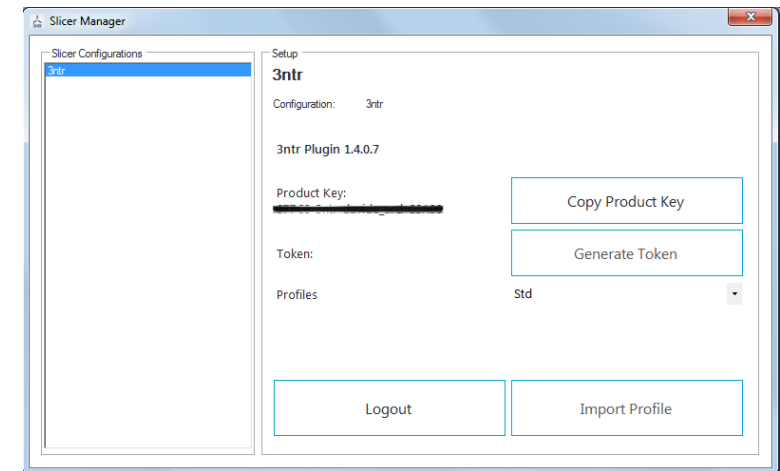
This function is meant to be used for a single user that wants to move the license temporarily to another PC (i.e.: office workstation / Notebook PC).

To move the license on a secondary PC follow this procedure in the following order:

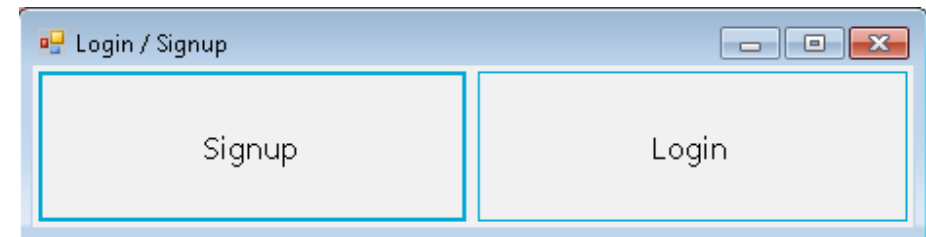
1. On the PC in use, click on the LOGOUT button (screen called from “slicer” tab, “manager” button) to release the license
2. On the secondary PC run SSI and LOGIN using the given license number

### IMPORTANT

- License can't be running on more than one PC at any time
- License key must be initially registered on the primary PC with all user data required
- Registration is performed once – if you attempt to re-register you will get “license already in use”
- Both PC must be connected to the web to communicate with 3ntr license servers
- Lending (even if temporary) of the license to third parties is illegal



156 License logout



157 Login

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*“tokenized” installs can't move licenses around.*

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## Appendix 5 – multi material / multi mesh prints

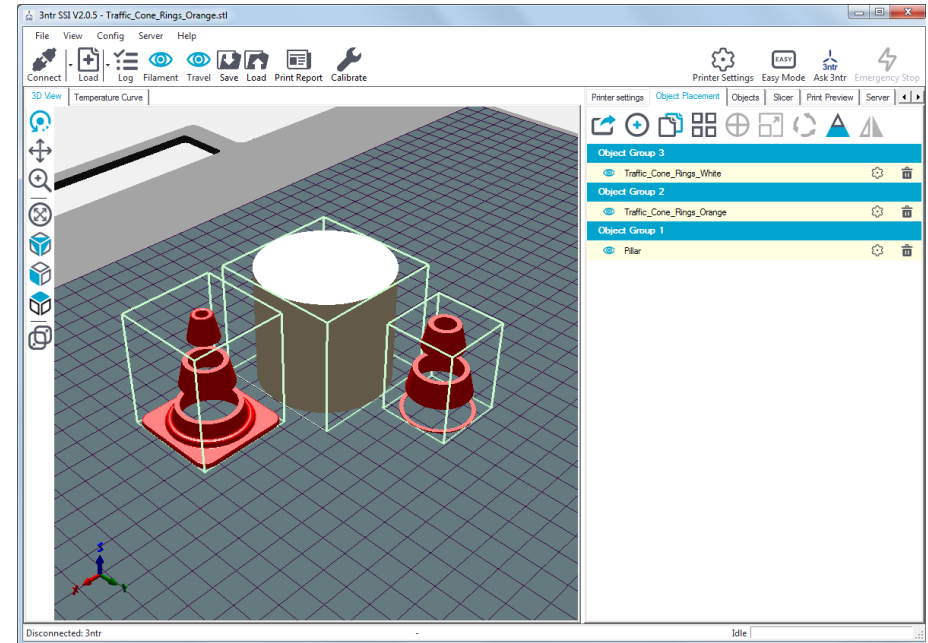
One of the most useful SSI capabilities is the multi material print handling.

To get the most from this option you should consider few essential steps when modeling your 3D parts:

- Assembly parts should be exported as separate files, each one with the same cartesian space origin
- Assembly parts must not be colliding - for example a shaft diameter can be equal to the hole where it stays, but not larger (the resulting interference may create issues during printing)

Any assembly part gets printed individually, even if all assembly parts are printed with the same nozzle. If you don't want to see separation lines into a multibody geometry, consider a Boolean union and then exporting the result as a single object.

Let's see what happen when we want to print the classic traffic cone geometry: SSI imports all selected files and places on the tray as independent parts plus a placeholder for the prime pillar.

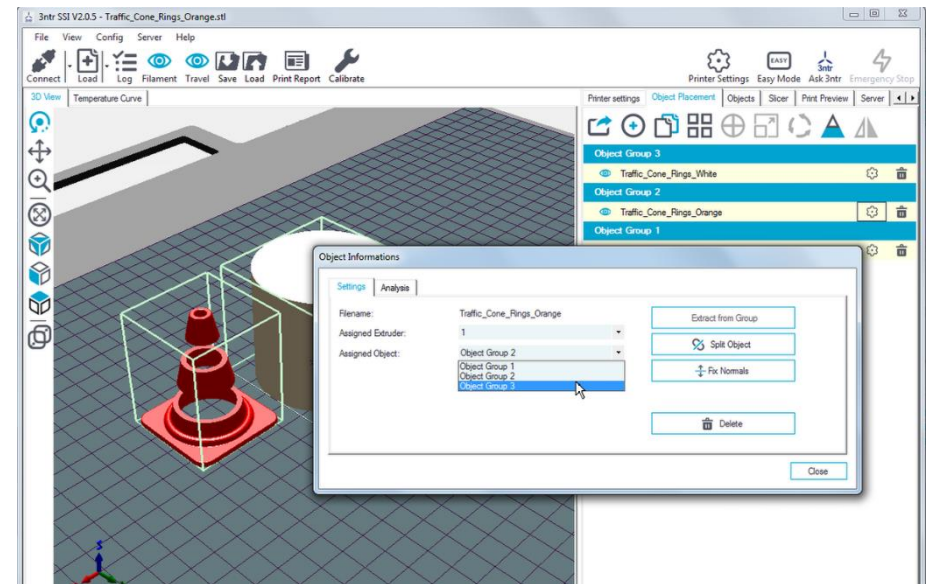


158 Traffic cone parts

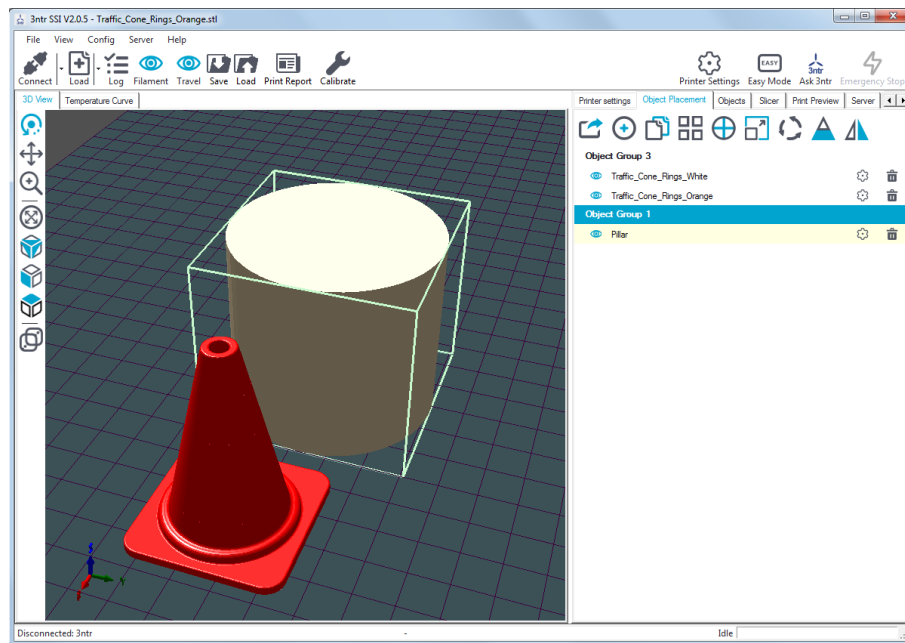
First, we need to group all desired geometries, to let them share the same geometrical origin.

Clicking on the “gear” icon of any give part you will be given the capability to group to another part.

A pop-up window will let you choose the object to group with: in this case you are going to group object #3 with #2: both parts will share same origin and therefore it will form desired object.



159 Change object grouping



160 Desired geometry

Now you can decide the materials for every geometry available.  
The machine in this example is fitted as follows:

Nozzle #1 = ABS

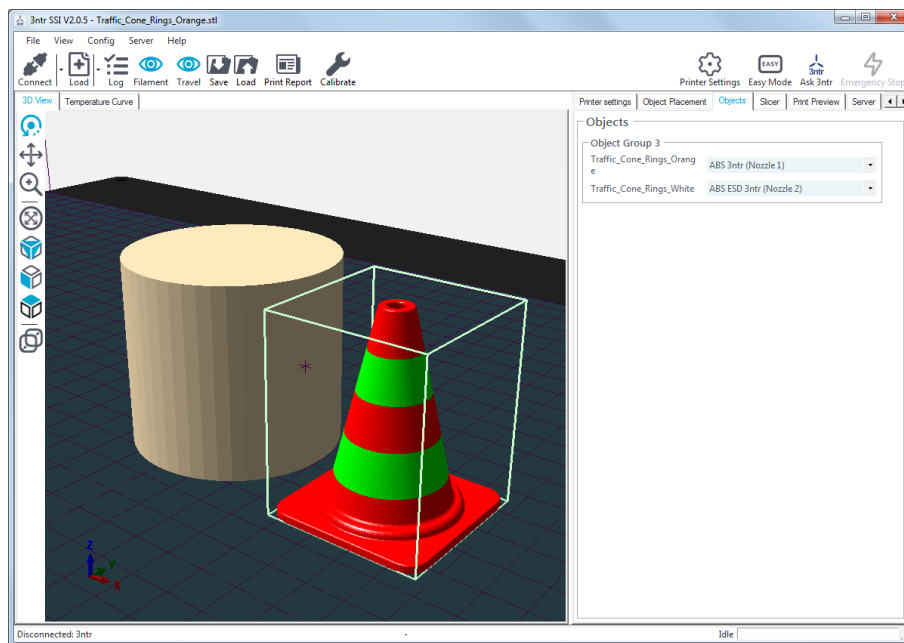
Nozzle #2 = ABS ESD

Nozzle #3 = SSU00 (breakaway support)

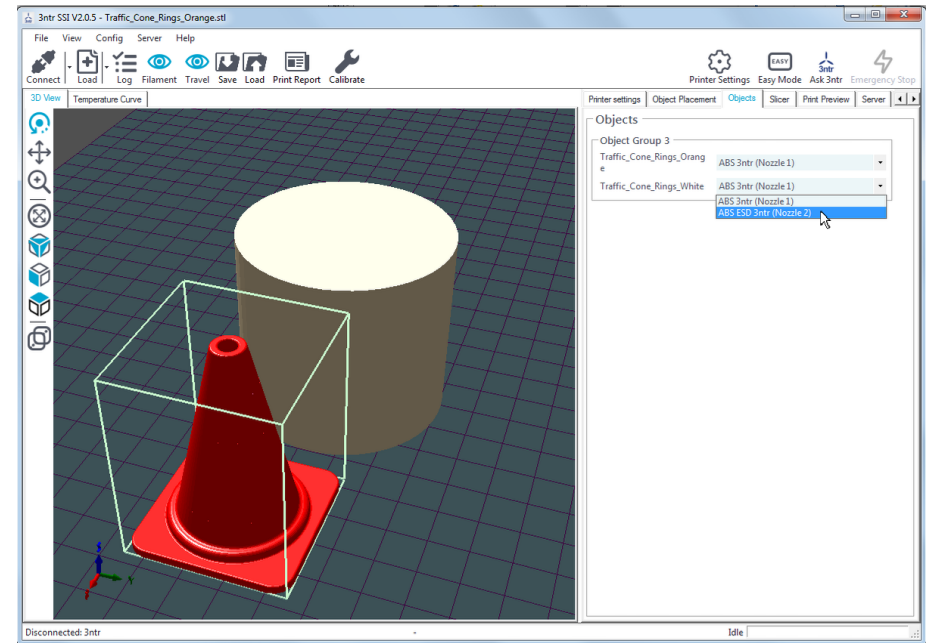
Associating an extruder to a specific geometry: the “Objects” tab lets you assign an extruder to any part going to be printed.

Now SSI is able to create the correct gcode.

You can freely change any setting into EASY or ADVANCED slicing parameters – your material preferences will be retained anyway.



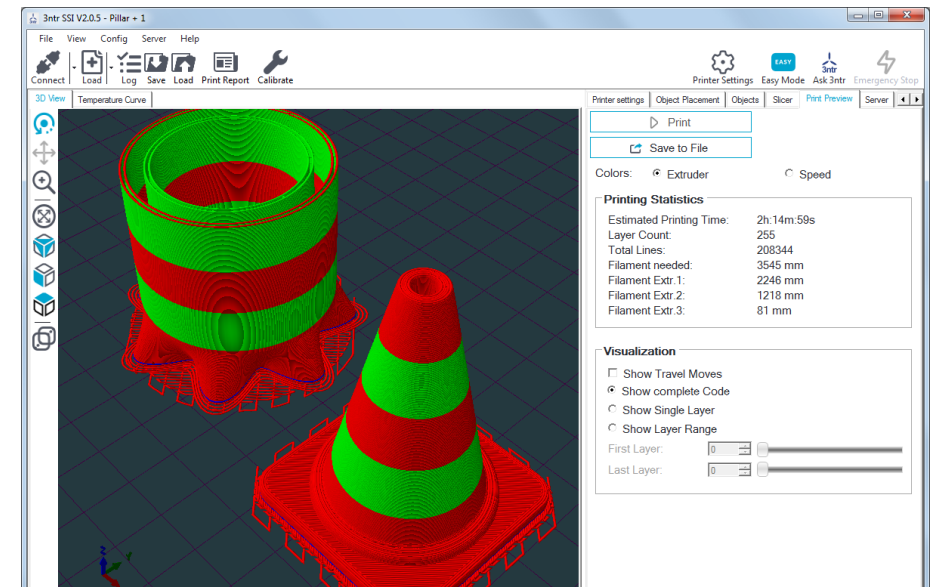
162 Materials are now correctly set



161 Material selection

Once set the slicing preferences you can proceed to gcode preparation and check if final paths are matching the desired result!

If print is looking as expected you can start the printing process: you will get the part(s) with desired build materials!



163 Print preview

## Appendix 6 – preset handling

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It is easy to handle preset settings: two icons are available on the tool bar to help you managing your slicing preferences

To create a preset you just need to take three easy steps:

- Be sure not to have any loaded part/geometry on the tray
- Choose your slicer settings (Easy or Advanced)
- Save the file (will have an \*.SSI suffix) with the SAVE icon

Now onward you will just use the LOAD icon to recall the desired preset to handle any job you like.

NB.: loading a preset you will delete anyway any geometry previously loaded



*164 Preset handling icons*