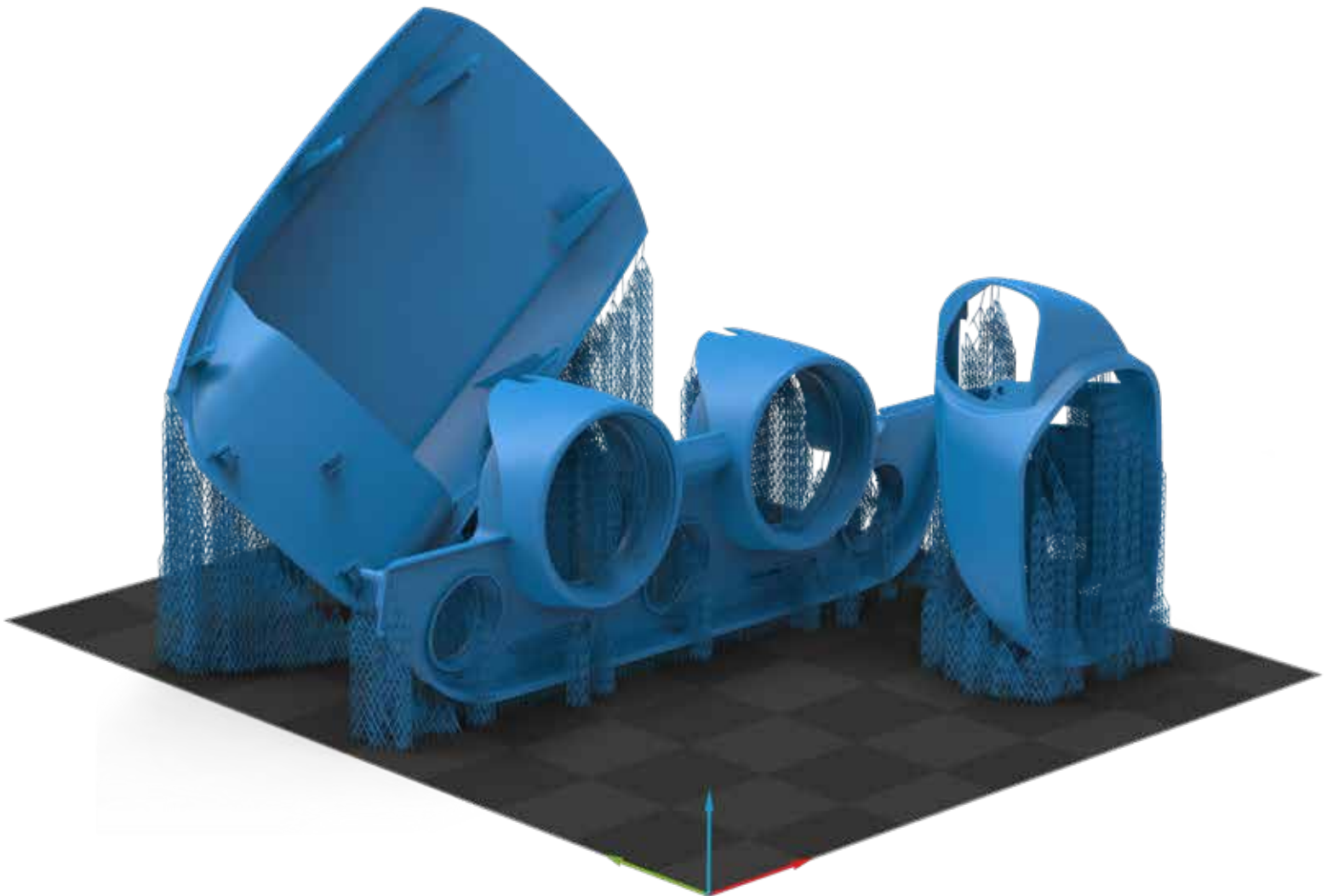


 **3D Sprint®**

## What's New 3.0

Release Date: 2020.12



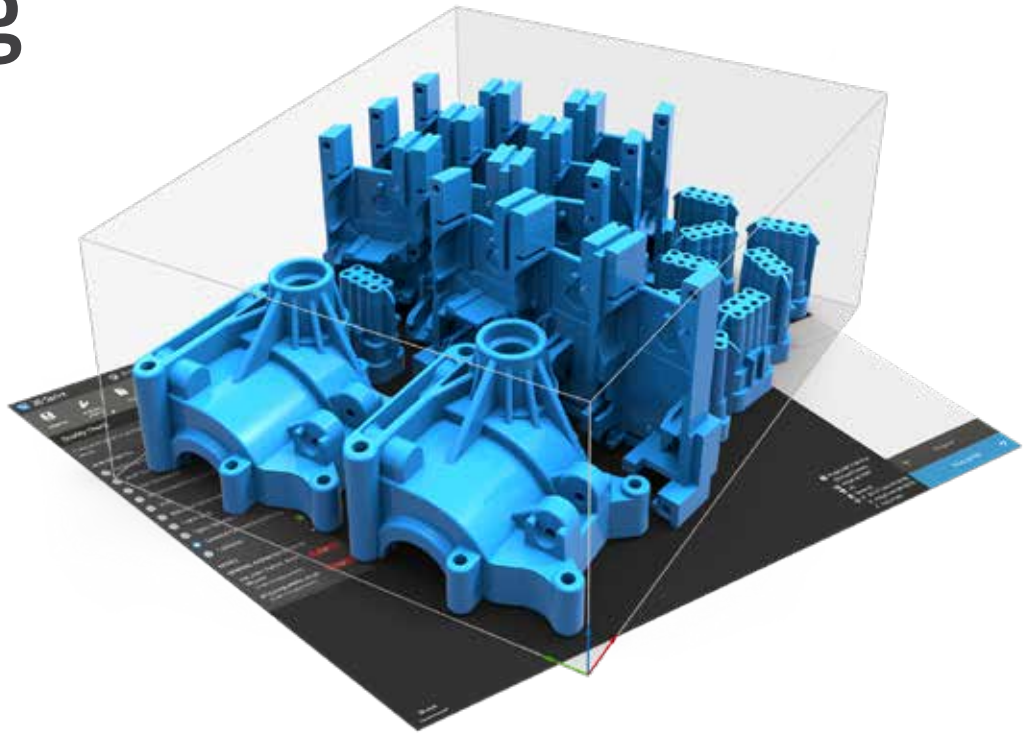
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# Introducing 3D Sprint

Version 3.0



## Setting the New Standard in 3D Printing

Experience true productivity with exclusive additive manufacturing software for 3D Systems Plastic Printers.

3D Sprint® is 3D Systems' exclusive software for preparing and optimizing CAD & polygon data and managing the additive manufacturing process on its plastic 3D printers. Shipping with each supported 3D Systems printer, 3D Sprint delivers tools that allow you to 3D print better parts.

## 3D Sprint enables you to:

### Increase Productivity for 3D Systems Plastic Printer

Prepare and optimize CAD data and then manage the additive manufacturing process on your 3D Systems' plastic 3D printers.

### Print Better Parts

Eliminate geometry processing artifacts with smarter geometry processing and powerful slicing technology.

### Increase Productivity with Optimized Data Management

Estimate print time and optimize material levels and usage both before and during the print operation.

### Go from CAD to Print

3D Sprint delivers all the tools you need to go from design to 3D print, offering an unparalleled user experience across 3D Systems plastic printers.

### Streamline Time to Finished Parts

Save on material and post-processing time without compromising on part quality.

3D Sprint 3.0 includes key new features and enhancements that bring new value to these objectives with a special focus on capabilities that are required to move from rapid prototyping to serial production.

## 2 INSTALLATION

### System Requirements

For the latest system requirements information and to learn about specific qualified system configurations, go to the [System Requirements](#) page. Some users have had success running system configurations that deviate from the supported listed on our website. In such cases, these configurations are not officially supported by 3D Systems, Inc.

Additionally, we test a variety of hardware platforms in combination with the graphics subsystems. While we make every attempt to be as thorough as possible, hardware manufacturers change their products frequently and may be shipping newer products or have discontinued active support for others. Check the support section of the website for the latest system requirement information and specific qualified systems.

**NOTE: Microsoft Windows 10 Operating System is recommended. Windows 7 is not supported by this version. If you are using Windows 7, please do not upgrade to 3D Sprint 3.0.**

### Download and Install Software

You can download and install 3D Sprint from the [getting started](#) page.

In addition, automatic software updates are available if you set the Check for updates on launch option to True in Preferences and a valid activation code is activated, and your computer is connected to the Internet. 3D Sprint will check if a newer version is available and will download it automatically for installation.

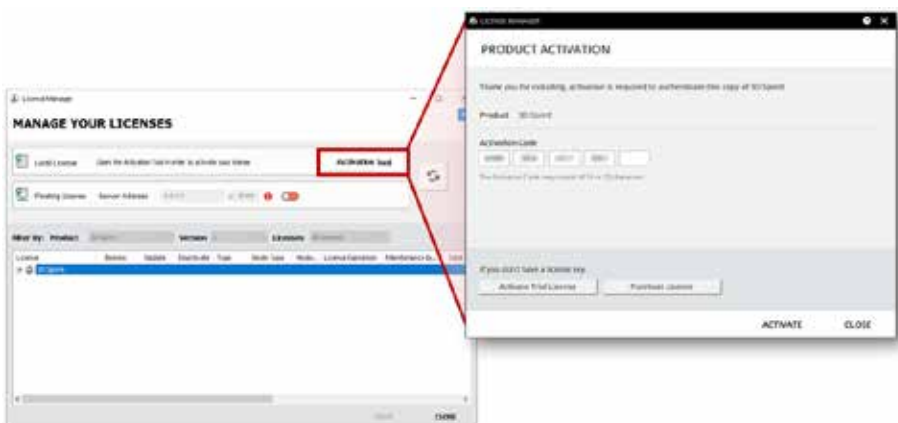
You can also visit [support.3dsystems.com](http://support.3dsystems.com), select your printer, then download 3D Sprint for the Software Downloads section on your printer's site.

### Activate License

3D Sprint requires license activation to run the application on your PC. You can choose to use an evaluation license for a 30-day period or activate a permanent license by using an activation code.

After you start 3D Sprint, the License Manager window opens. The License Manager allows you to activate and use the 3D Sprint software.

**NOTE: Starting with 3D Sprint 3.0, a new licensing management tool is available, providing more flexibility and convenience in managing your license. For more information, read the [CimLM Licensing Guide](#).**



To register for permanent activation codes, please use the 3D Sprint registration landing page here:

<https://support.3dsystems.com/s/get-3d-sprint> \*

\*This request will go into a system, and we will produce activation codes within 24 hours (excluding weekends).

If you are an existing user and have already activated the license on your PC with the previous version of 3D Sprint, all the existing activation codes will be retained in the new license system, so you can run the newer version of 3D Sprint without re-activating the license.

For more information, go to the Licensing section on the [getting started](#) page.

### 3 NEW PRINTERS, FEATURES AND IMPROVEMENTS

#### Requirement Notice

Please note that printers must be running the required printer firmware version to be able to submit print jobs with 3D Sprint 3.0. For the latest firmware version please consult the [3D Sprint - Minimum Firmware Guide](#)

## Common Key New Features

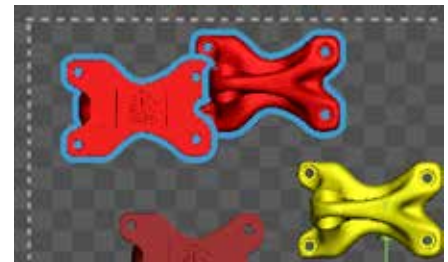


### Align / Space Parts

Rearrange/align/space your parts on the print platform through a few simple clicks.

**Challenge :** Some parts end up closer to the edge than other parts, or not spread evenly on the platform. Depending on the printer technology, they might need to be at the same distance from each other as a concession for thermal characteristics.

**Solution :** A new **Align Parts** tool has been added, which allows you to align and/or space the parts by different criteria. While aligning parts, the **Dynamic Collision Check** option is also available for real-time feedback on new part positions.

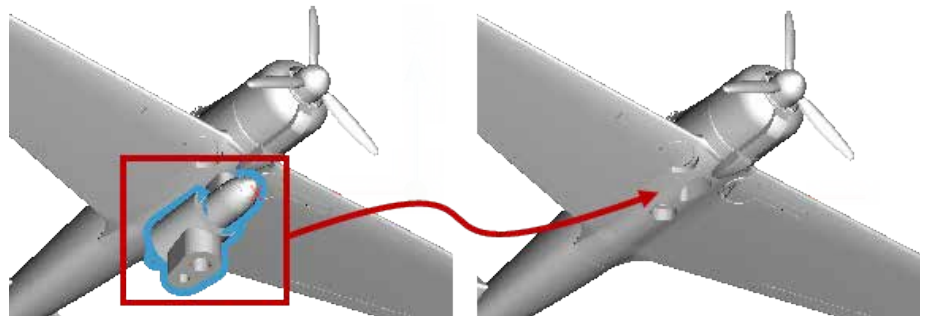


Dynamic Collision Check to indicate colliding parts

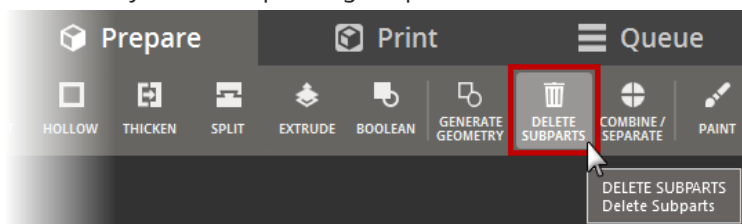
### Delete Sub-Parts

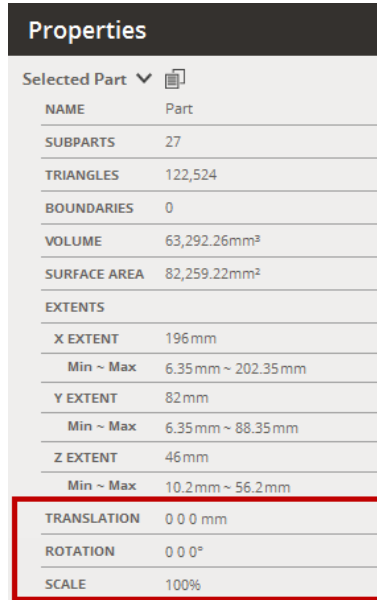
Delete subparts from a part or from an assembly.

**Challenge :** Improve the efficiency of deleting sub-parts. Simplify multi-step process for removing unnecessary objects from a part or from an assembly (an assembled part contains several objects).



**Solution :** A new **Delete Subparts** tool has been added, which allows you to select subparts and delete them from a part or from an assembly without separating the part. This tool is available in the Prepare and the Print tabs.





## Remembering Part Transform

The part transform (translate, rotate and scale) can now be displayed in Part Properties panel. A new **Reset Transform** option in the Transform dialog helps you reposition the part to its original position.

## Key Improvements

### New 3MF File Format Support

Added a new **3MF** file format to the supported file type in the Import. This file format is the standard for 3D printing. Mesh, instances, color, texture, supports and slices from the 3MF file can be imported in 3D Sprint.

### UI / UX Improvements

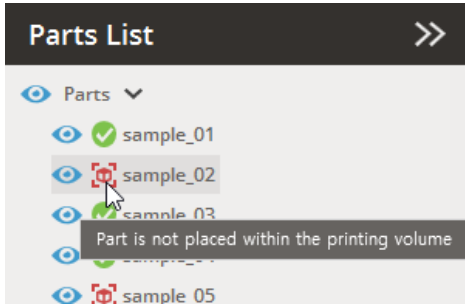
The following improvements were made to the UI / UX:

- You can now save and reuse the parameters set in the Auto Place.
- Added an easier way to turn off printer visibility.

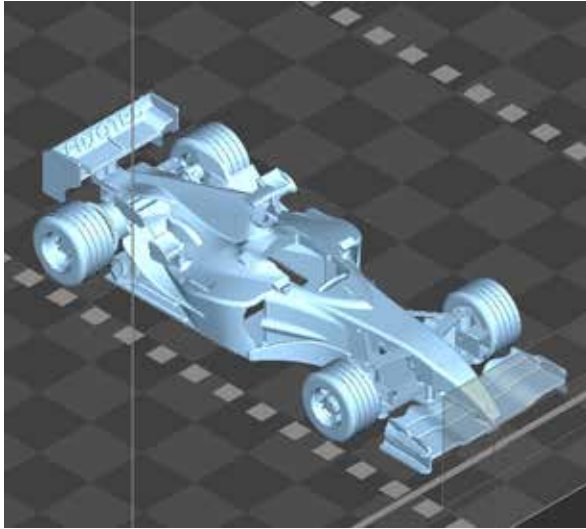


- Moved the visibility icon in the Part List to the left of the part name so that it can be turned on or off easily.

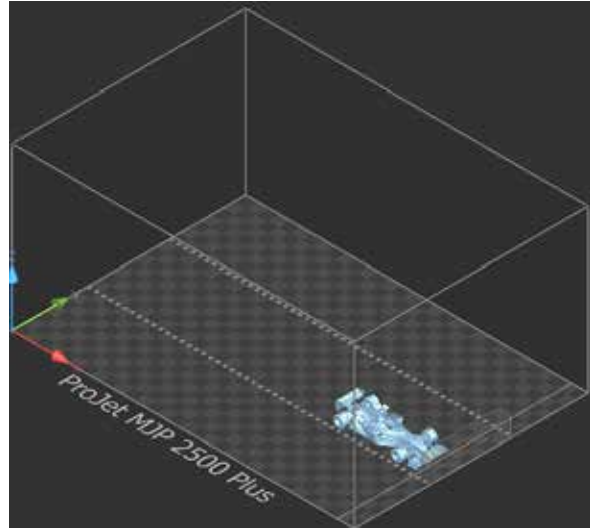
- Separated the icon in the Part List to distinguish parts that are outside of the print platform from parts that have other errors.



- The default **View** settings have been updated for each printer technology, and are now remembered across 3D Sprint sessions.
- A new **Zoom Platform** option has been added, that allows you to fit the entire print platform to the canvas.

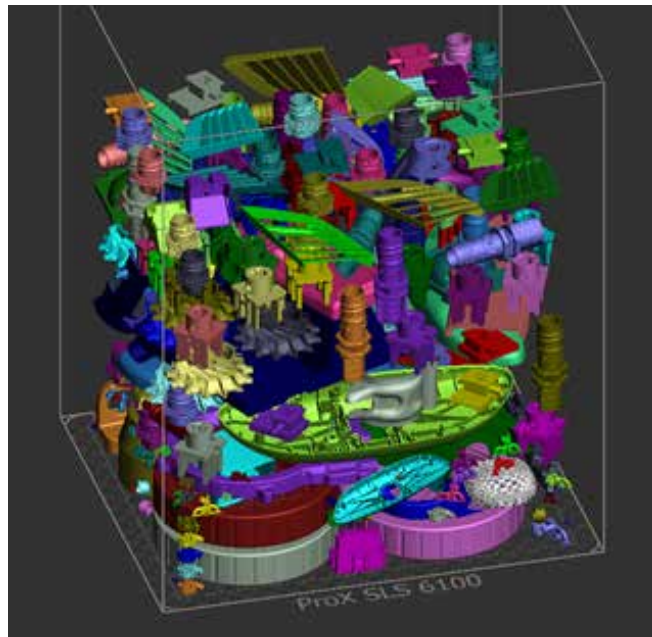
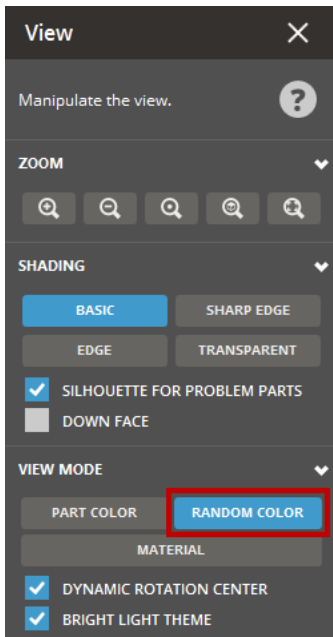


Zoom Extents



Zoom Platform

- Multiple parts can be colored randomly with just one click so that they can be identified easily on the canvas.





# Improvements to Reporting

The following improvements were made to the Reporting:

- Included the part transform.
- Included build volume utilization.
- Included measurements.
- Included measurements in the images that were saved with the report.
- Enabled to save a snapshot of the current viewport in the images saved with the report.
- Organized the report into different tabs in the excel sheet.

# Miscellaneous Enhancements

**Improvements to Infrastructure for New Material Introduction** - The new material introduction process is now more robust and faster than before.

Additionally the following improvements were made to the UI / UX:

- The material patch file can now be downloaded and installed by non-admin users also.
- When applying a new material patch, you can view the progress and then receive a warning message that says that you need to restart 3D Sprint to take the effect of the patch.

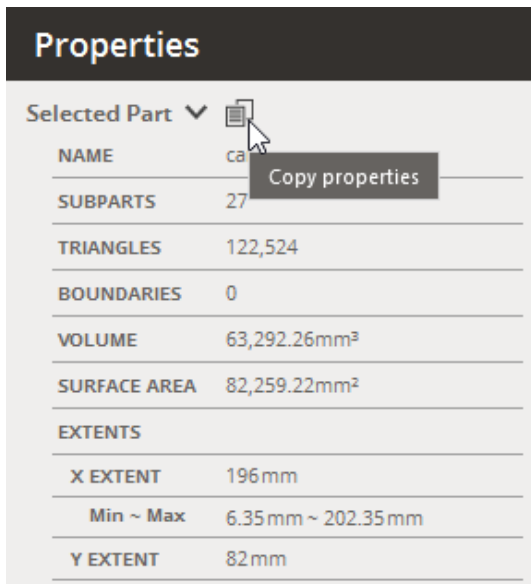
**Improved Performance for Large Parts** - Large Parts can be represented by a 'box' for a better graphics performance.

**Undo / Redo** - Improvements were made to some operations such as undo/redo that consumed too much memory.

**Fixing Part** - The part fixing algorithm has been improved and more robust.

**Collision Check** - Added a new **Dynamic Collision Check** to check collision after a part is oriented.

**Enable to Copy Part Properties** - The part properties can now be copied from the Properties panel.



**Copying Parts** - After copying a part, the original part can be auto-placed along with the instances.

## Bug Fixes

- **GW-23689:** The New Material Introduction Patch file was not applied when the user opened two instances of the same 3D Sprint, even after one was closed.
- **GW-22587:** Help was not linked when the printer was not set.
- **GW-23839:** Auto-placement caused that 3D Sprint crashes on the Client mode.
- **GW-24363:** Parts were located across the borders.
- **GW-24632:** 3D Sprint crashed when creating build files with long-character file names and folder names.
- **GW-23417:** Copying with the Fill Up Platform option resulted in copies that are named "MeshInstance."
- **GW-21759:** Ungrouping group of SLI/SLC files deleted all files in that group.
- **GW-23636:** The Transform - Fix Minimum Z option didn't fix the height if the numerical input box was used.
- **GW-22614:** The Help pages of the Hollow and Thicken tools were linked to the wrong page.
- **GW-21869:** The Minimum Quality Check was not invoked when the Print to File was initiated.
- **GW-25151:** Only one part was displayed in red while all interior parts were void.

# SLA

## Key New Features

### Support Improvements

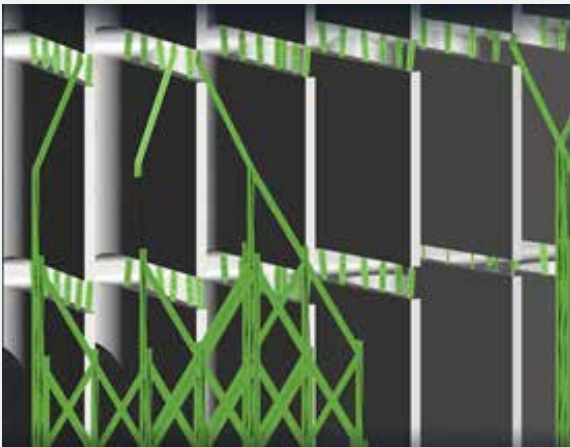
Many improvements and new option updates were made for reinforcing the structure of supports and increasing the print success rate.

**Challenge** : A variety of issues (support structure, intersection of supports with parts, incorrect anchor points, etc.) causes the build failures.

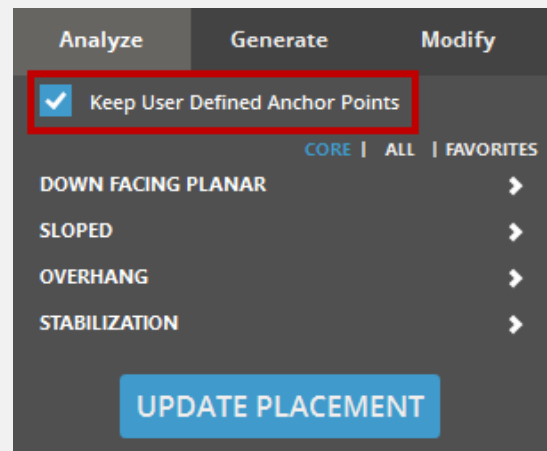
**Solution** : You can print parts successfully either with the default styles provided in 3D Sprint or your own styles. While constructing supports, you can also avoid sensitive areas of a part and optimize the material usage.

### Print Success Rate

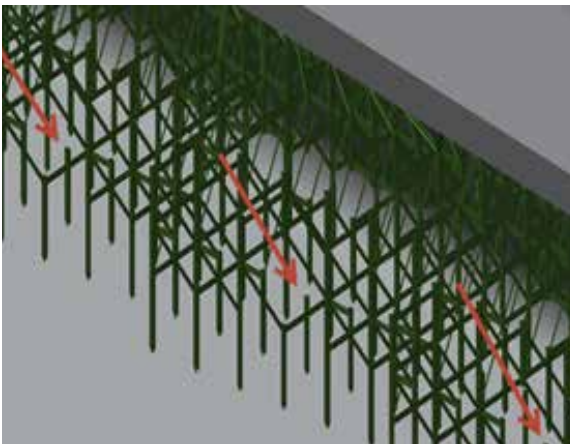
- Vertical beams can be generated in sufficiently narrow gaps.



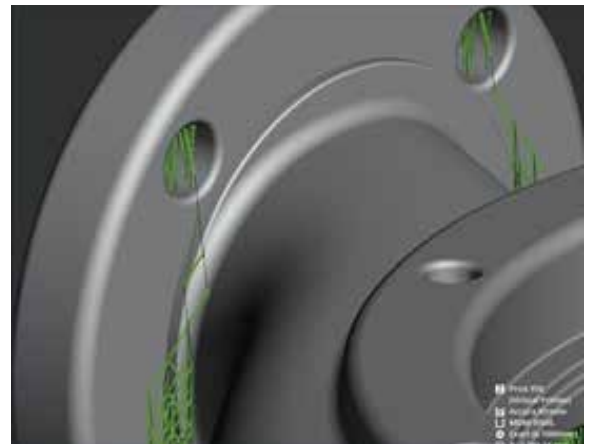
- Added a new **Keep User Defined Anchor Points** option to retain user-defined anchor points.



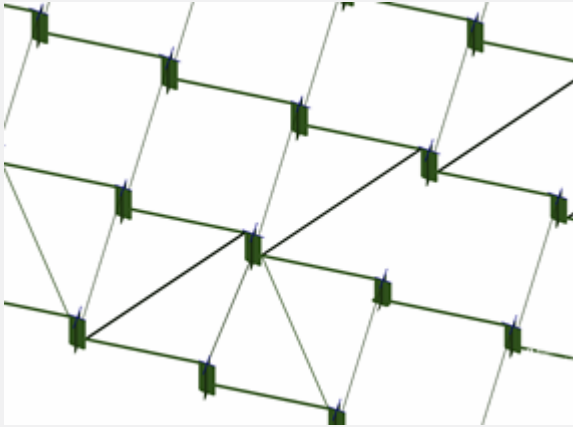
- Prevent creating tall columns without proper trussing and disconnected bottom connections.



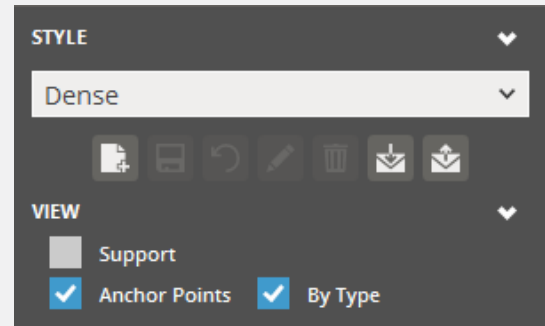
- Added extra trusses to long top connections.



- Allowed creation of adaptive direction truss within main support grids for adequate trussing at bottom connections.

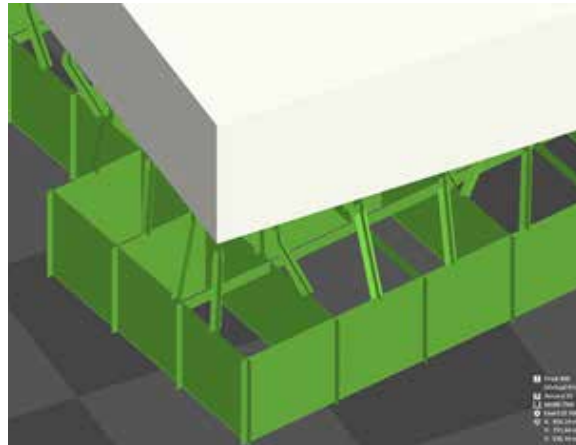
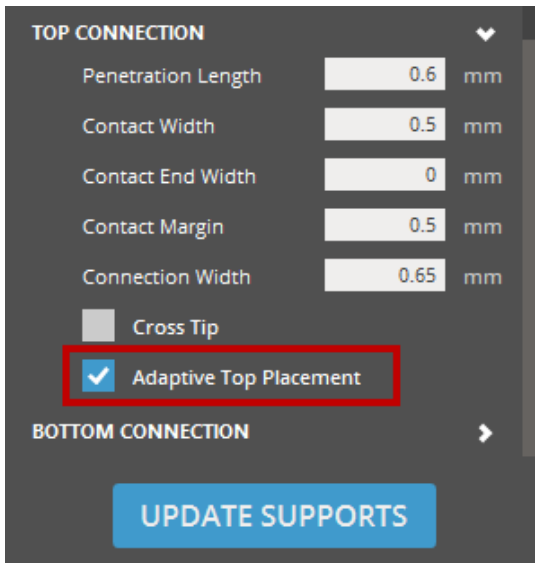


- An easy troubleshoot support for points and supports using the View panel. You can catch and display individual points that have been edited, or failed to generate supports with the View filter.

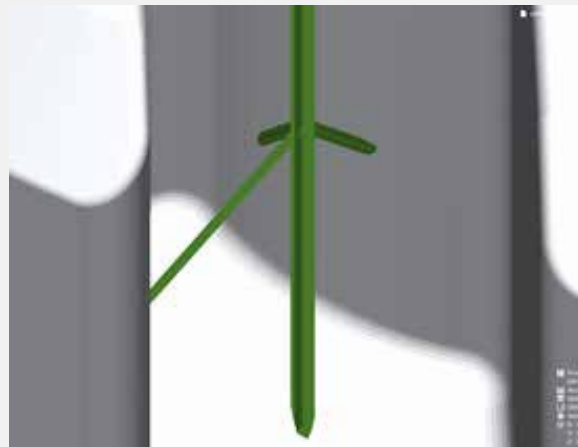
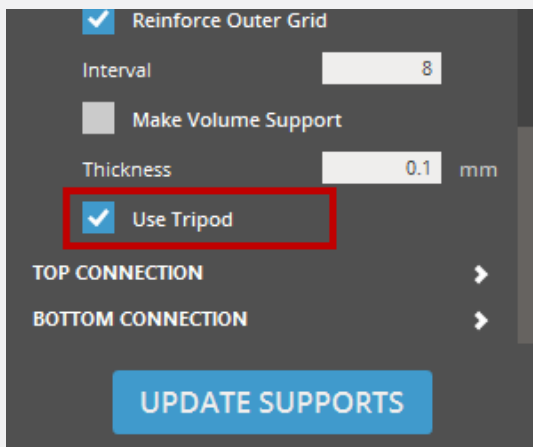


**Note:** The **By Type** option is only available with a 3D Sprint PRO license.

- Added a new **Adaptive Top Placement** option to make more candidates for origination of grids.



- Added a new **Use Tripod** option to allow creation of extra tripod stabilizer connections.



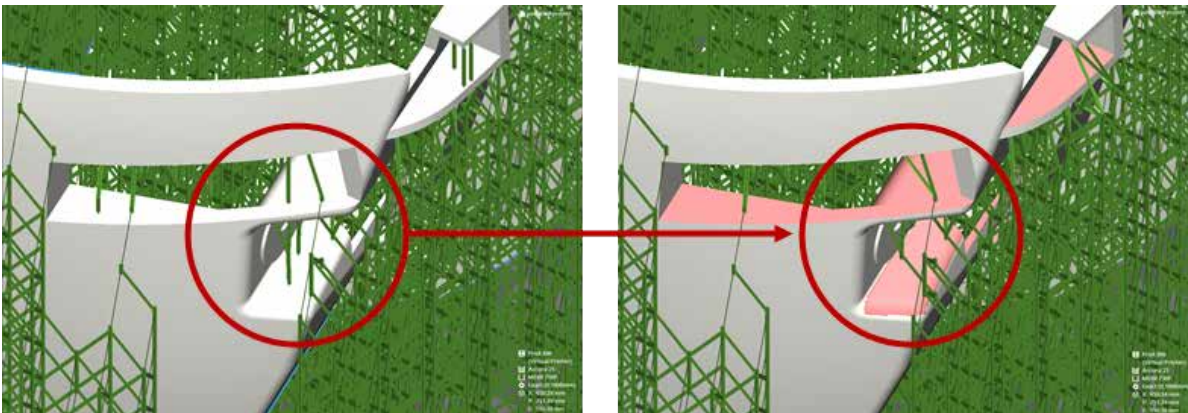
- Allowed to generate a single support for a group or parts. The advantage of generating a single support is that you can keep different build styles for each part in the group while having a single support structure for all parts in the group.



- Improved algorithm for part support intersections.
- Improved for truss margins near bottom connections.

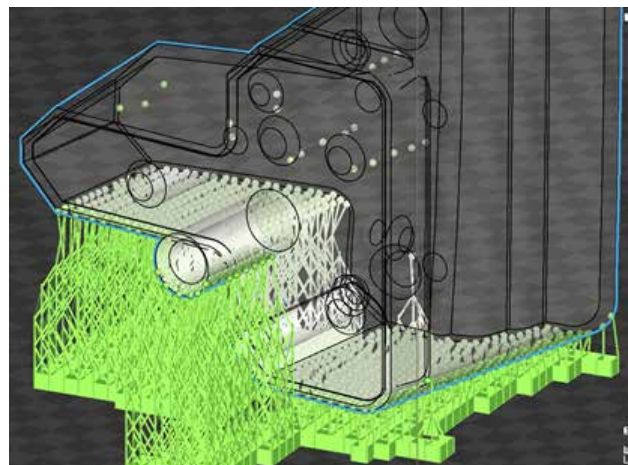
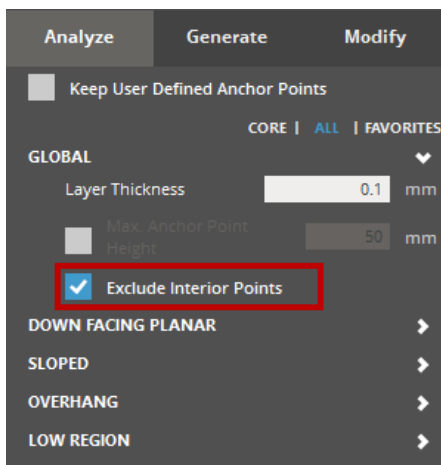
## Part Quality

- Exclusion Region on surface enhanced to redirect any type of support connections, and prevent support scars in undesirable areas.



## Faster Post-Processing

- Added anchor points in voids to no-support lists and prevented from generating supports on the inside of parts.



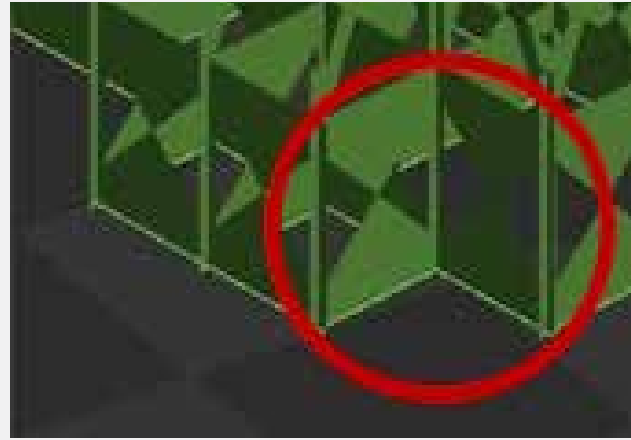
# Material Savings

- Provided holes on the base.

ALL | FAVORITES

GRID

Grid Angle	60	°
Grid Width	10	mm
Grid Edge Width	0.65	mm
Rotation Around Z	10	°
Base Height	5	mm
Base Notch Height	0	mm
Col Height to width Ratio	7	
Inner Grid Reduction Level	2	



- Enabled to turn off extra points.

CORE | ALL | FAVORITES

DOWN FACING PLANAR >

SLOPED >

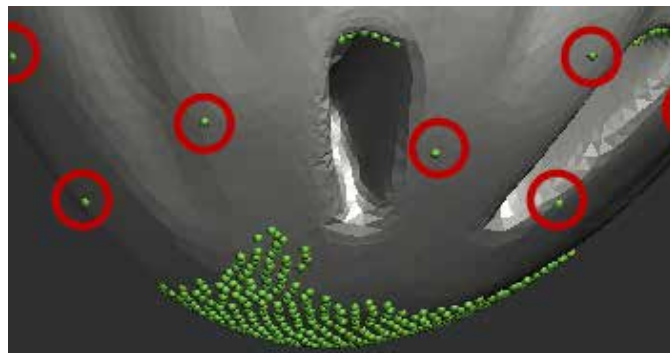
OVERHANG >

STABILIZATION >

Recoating Points

Extra Point Distance 25 mm

UPDATE PLACEMENT



CORE | ALL | FAVORITES

DOWN FACING PLANAR >

SLOPED >

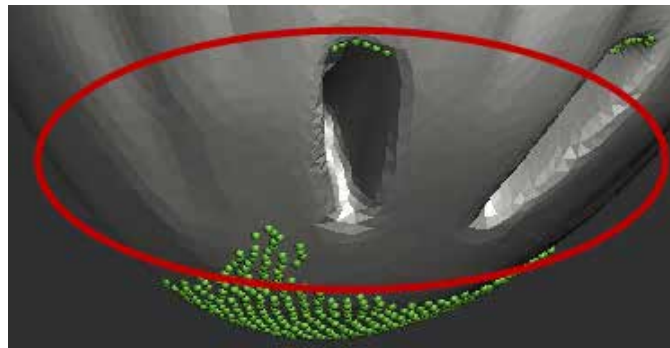
OVERHANG >

STABILIZATION >

Recoating Points

Extra Point Distance 25 mm

UPDATE PLACEMENT



- Allowed to specify Max. Z height for all anchor points.

Analyze Generate Modify

Keep User Defined Anchor Points

CORE | ALL | FAVORITES

GLOBAL >

Layer Thickness 0.1 mm

Max. Anchor Point Height 50 mm

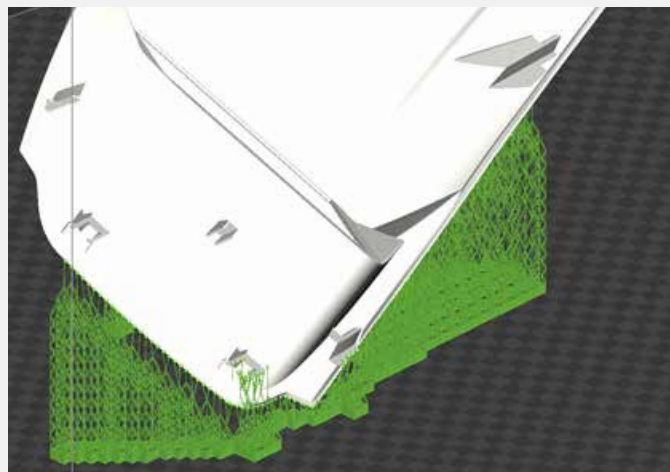
Exclude Interior Points

DOWN FACING PLANAR >

SLOPED >

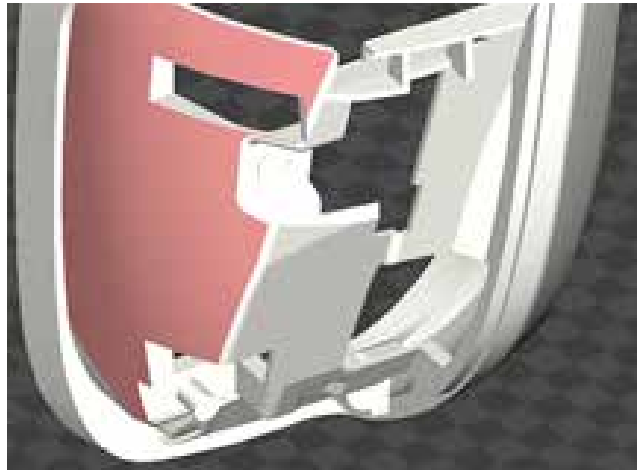
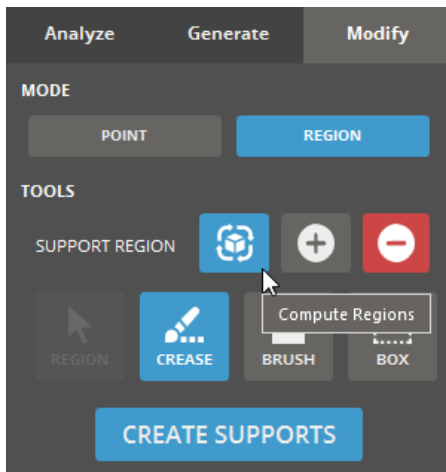
OVERHANG >

LOW REGION >



## Performance and User Experience

- Computed regions on-demand, to avoid unnecessary and long analysis.
- Allowed to draw custom regions anywhere on a part.
- Added a new Crease Angle selection tool, allowing contiguous region selection for variable curvature.
- Allowed to use region editing tools for All, Clear, and Reverse with shortcut keys.



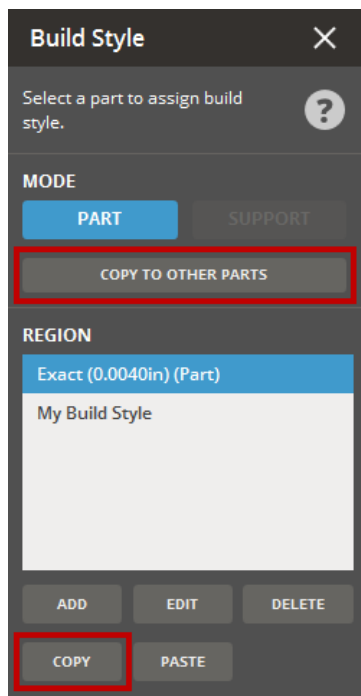
- Enhanced region definitions lifetimes to saving .3dprint file, persistence for more operations, propagating to copies, etc.

## Real Printer Connection to iPro 8000 / 9000 SV

Connecting to iPro 8000 / 9000 SV printers and sending a build file over to the printer from 3D Sprint are now available.

**Note: This requires the Windows 10 version of iPro control code.**

## Key Improvements



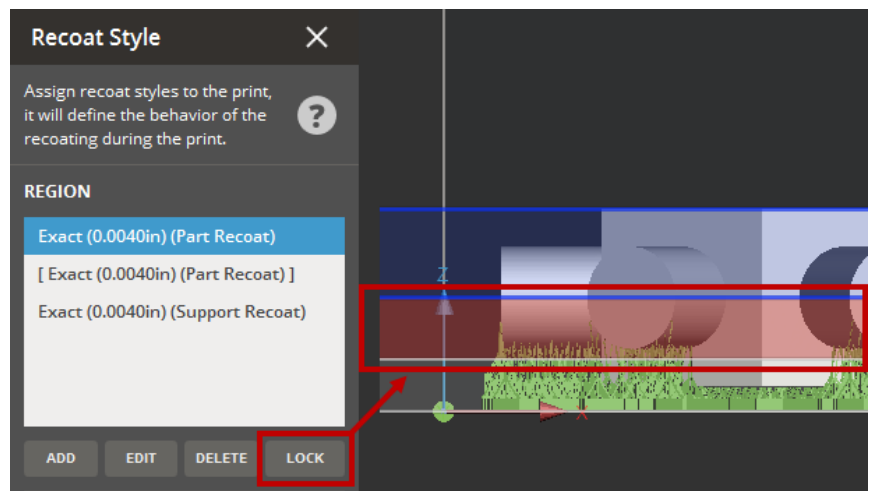
## Build Style Improvements

The following improvements were made to the **Build Style** command.

- All the parameters can be controlled at the region-level.
- Added ability to copy the build styles across parts and regions.

## Recoat Style Improvements

You can lock recoat style region and prevent it from being modified by mistake. The range values can be fine adjusted by pressing the Up / Down arrow keys.



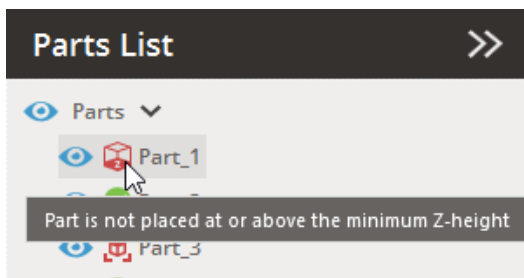
## Auto Update Mechanism for New or Updated Materials

Material patch will be delivered via auto-update notification in 3D Sprint. This will update 3D Sprint database for SLA printers.

## Miscellaneous Enhancements

**Collision Check** - You are now warned about collisions between supports and its part, or other parts and supports. This also works for SLI / SLC files.

**Error in Part List** - You can distinguish parts that are below the minimum height in the Parts List from the parts that have other errors.



**Support Slicing** - Improved the efficiency and the performance when slicing supports.

**Recoat Style** - You are warned if the type in an imported styleddd files doesn't match the type that was selected when clicking Edit.

**Enable Opti-Draw™** - Added a new **Enable Opti-Draw™** option to the Preferences. This is only available with a 3D Sprint for TruShell license for ProX / iPro printers.

**Build Time** - Improved build time for supports by ~20% for all SLA builds, and ~40% for TruShell builds.

**Build File Generation** - Addressed robustness and performance issues with build file generation.



## Bug Fixes

- **GW-23111:** QC 2.0 style should not be imported for materials that do not support QC.
- **GW-24251:** Recoat Styles would reset if models were moved to the Prepare tab.
- **GW-23492:** Generating a .BFF file caused 3D Sprint crashes.
- **GW-23464:** Scaling By Unit from MM to IN didn't retain the Build Style settings.
- **GW-22925:** The Recoat Style presets were not retained after importing the "Support Recoat Style" preset to the "Part Recoat Style" preset, and vice versa.
- **GW-22822:** Build Style preset would become blank when importing an exported preset, and it caused 3D Sprint crashes on update.
- **GW-22821:** Delete option got enabled for default/single part or support recoat style listed in the region section.
- **GW-23761:** 3D Sprint crashed when rotating a part around the Z-axis while the Down Face Angle view was turned on.
- **GW-23416:** Copying with the Fill Up Platform option resulted in copies that are intersected with other parts and supports.
- **GW-22138:** Recoat style was not imported with the correct type (i.e. part or support)
- **GW-20167:** Auto-placement showed a warning message after Linear Pattern run.
- **GW-17276:** A warning message was shown for Estimate even when the ".sli" file was auto-placed properly.
- **GW-23424:** The "Scaling" tab got enabled, when Undo was performed and while the "Keep Supports" is enabled.
- **GW-22328:** The user interface of the "color legend" and "View" dialog overlapped if they were opened at the same time.
- **GW-25196:** A warning of support regeneration was not given after changing the build style values.
- **GW-25294:** The Show Odd layer didn't work.

## Known Issues

- **GW-25192:** Several empire gusset structural problems.
- **GW-25696:** Creating supports on a part or a group of parts that has more than 5.5M triangles crashes the application. Reduce the number of triangles on the model to create supports.

# NextDent 5100 & Figure 4

## Key New Features

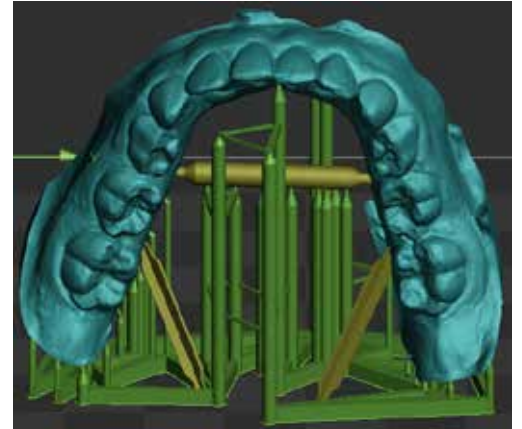
### Struts to Reinforce Supports

Enforce the part and supports using struts.

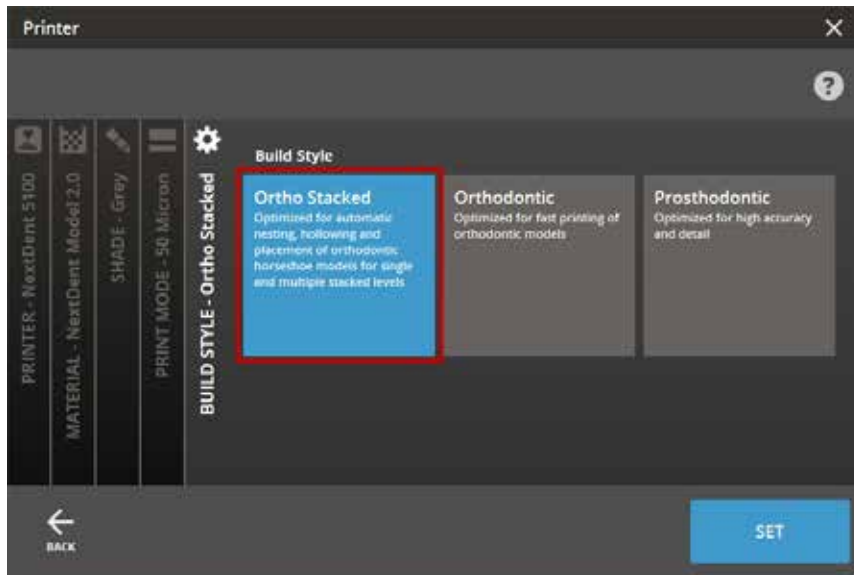
**Challenge** : Default supports might not be enough for the part, thus affecting part quality and build success rate. Adding enforcement bars removed existing supports, requiring the users to regenerate supports.

**Solution** : The Create Bars which was in the previous version of 3D Sprint has been renamed to **Create Struts**. In addition to existing capability of adding struts to a parts, this tool provides ability to add struts between supports or between part and the supports, while retaining existing supports.

Additionally, a new cross-sectional profile named “**Cross**” has been added for the struts.



## Key Improvements



### New Stacked Arches Build Style

A new **Ortho Stacked** build style has been added to support printing stacked arches using the Grey and Peach shades of Model 2.0 material.

## Improvements to Stacked Arches

The following improvements were made to the Stack Arches command:

- Improved the algorithm to detect the base accurately.
- Resolved crashing issues that might be encountered when creating stacked arches.

## Miscellaneous Enhancements

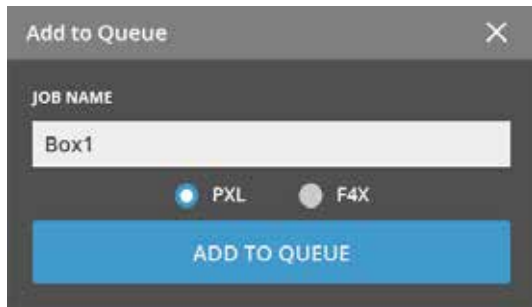
**Printability Check** - You are now warned about collisions between supports and other parts. This also works for SLC files.

**Retaining Supports** - Supports can now be retained when parts are rotated around the Z axis.

**Cure Depth** - Enabled to set cure depth separately for support tips.

**F4X / PXL File Output** - Selecting one of **.F4X** and **.PXL** file types is available when printing parts to file or sending them to Queue.

F4X is preferred for serial production using different printers or across long time frames on same printer. PXL is preferred for short builds that are built on the same printer.



**Note: This option is only available for NextDent 5100, Figure 4 Standalone, and Figure 4 Jewelry printers running the firmware version 1.1.1 or higher.**

**Anchor Point Parameters** - The following global anchor point parameters are now available with a 3D Sprint Basic license.

- **Max Anchor Point Height** - Allows to specify the maximum Z-height for anchor points. Anchor points will not be generated above the specified Z-height.
- **Exclude Interior Points** - Allows to add voids to no-support lists and prevent from generating supports on the inside of parts.

## Bug Fixes

- **GW-23555:** If printer job failed, that needed to be added to the printer, 3D Sprint didn't display the job or notify the user.
- **GW-24287:** Creating supports for NextDent build caused 3D Sprint crashes.
- **GW-23538:** Hi Temp 300 Amber material displayed as Unknown in Queue tab.
- **GW-23485:** Manual Firmware upgrade for connected/online Figure 4 Modular system offered .ddd instead of .wcu file.
- **GW-23027:** Supports were not retained after rotating in Z direction even while the Keep Supports option was checked.
- **GW-22717:** Build file generated with the Ortho Stacked build style listed the Prosthodontic build style.
- **GW-22702:** The Check for Updates tried to transfer rather than download if there was an existing upgrade file on user's system.
- **GW-22482:** Silent app crashes was observed for a scenario of creating supports and changing Analyze Tab parameters while the View By Type option was checked.
- **GW-22963:** 3D Sprint saved a log with different name.



## Bug Fixes

- **GW-22189:** Failed to Run Command after creating a build file with NMI(New Material Introduction)-delivered material.
- **GW-22970:** The Dynamic Collision Check option was turned on by default and not able to turn off when mesh, .SLI, and .SLC files are imported together.
- **GW-23013:** The default minimum connector width option in the Split tool was set to 3mm.

# SLS

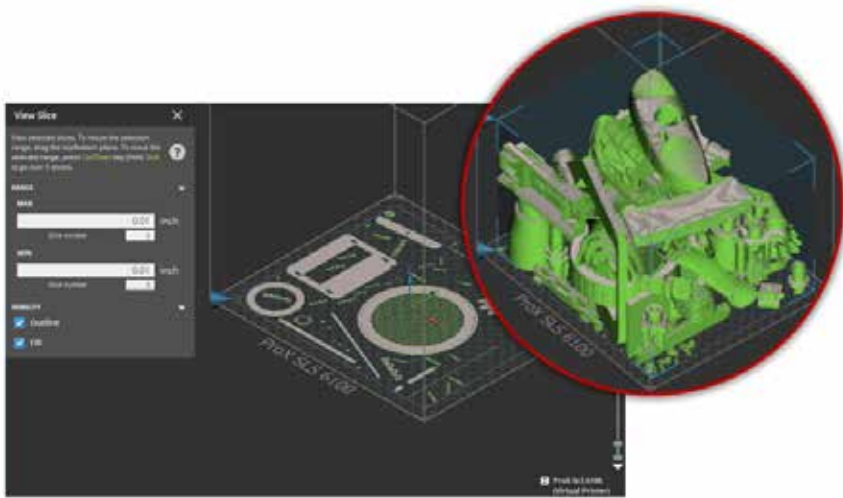
## Key New Features

### Slice Preview

Increase printer utilization rate and reduce material waste / build failures by validating the build before printing it.

**Challenge :** There is no way for the user to examine the slices before sending the job to the printer. The user needs to check the build for layer errors, small feature preservation, etc. before printing. Sending invalid builds to the printer causes material waste and loss in productivity.

**Solution :** The **View Slice** is now available for SLS printers. This allows you to preview the actual slices that will eventually be printed and inspect the layers that might have errors while printing.

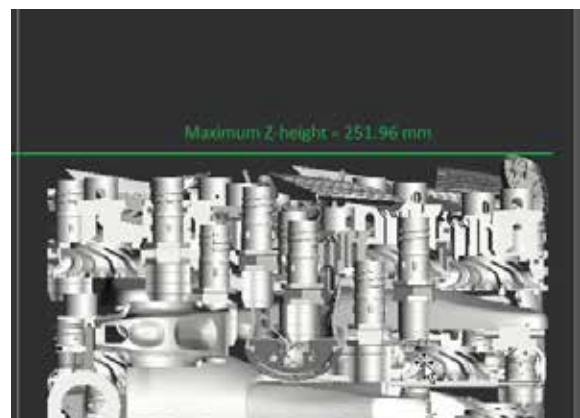
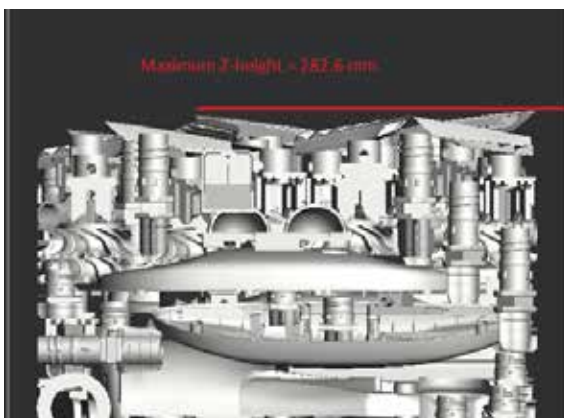


## Key Improvements

### Improvements to Auto-Placement

The following improvements were made to the **Auto Place** command.

- Increased productivity by fitting more parts on the print platform.
- You can save your parameters as presets for repeated uses.



Savings of ~31mm, ~10% of original Z height

## Build Time Estimate

Enabled to schedule builds efficiently as a result of build time estimate being close to the actual value.

## Miscellaneous Enhancements

**Printability Check** - You are now warned about small and enclosed parts.

**Report** - Included more data for each part in the report.

- Scale and offset parameters
- Part profile parameters
- Scaled volume and extents

**Including sorted facet files** - Included a new [Include sorted facet files](#) option to include sorted facet files when creating the build packet.

## Bug Fixes

- **GW-22947:** Cage in this 3dprint file was preventing the creation of a .BPZ file.
- **GW-22581:** Auto-placement didn't fit all parts.
- **GW-22776:** 3D Sprint crashed when the "SAVE AS" preset style operation was performed in the Part Profile Editor on the imported .bpz file.
- **GW-21052:** The Help icon was not shown in dialogs for some SLS commands.
- **GW-19451:** Scale and offset values of a part didn't change on switching between parts.

## Known Issues

- **GW-24608:** Build Time Estimate and Preview is not calculated if the Fill Scan Count is set to any odd number greater than 1.
- **GW-25499:** The Restore button is not enabled for the Part Profile Editor when changes are made in the editor without selecting any part.
- **GW-25659:** Running auto-placement sometimes crashes the application if the distance between parts is too small.



Find out more at: <https://www.3dsystems.com/software/3d-sprint>

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