Chapter 1

What's New...

1.1 Workflow Documents

Dental Cast MultiDrive Workflow

Download: **Click Here**

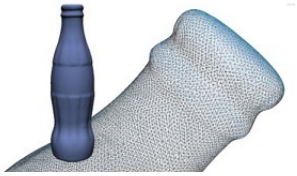
Large Object Boat Motor Workflow

Download: **Click Here**

Toy Car Scan Workflow

Download: **Click Here**

Coca-Cola Bottle Workflow



Download: **Click Here**

Rock Plate Workflow

Download: **Click Here**

1.2 ScanStudio and RapidWorks Webinars

>Advanced Mesh Processing In RapidWorks Download: Webinar Video / Sample Files

1.3 QA-Scan 3.0.0

1.4 RapidWorks 3.5.1

1.5 RapidWorks 3.5.0

1.6 QA-Scan 4.0

1.7 RapidWorks 4.1

1.8 RapidWorks 4.0

1.9 MultiDrive

>Setup

> MULTIDRIVE SETUP -Here are the items that are included with the MultiDrive

Allen wrench

L Bracket

AutoPostioner

-Attach the L Bracket to the MultiDrive with two flat head screws and allen wrench

-Attach the MultiDrive to the bottom of the scanner and fasten a screw underneath the scanner for additional stability

-Plug in the MultiDrive to the scanner

-Start ScanStudioHD and proceed to Calibration

>Calibration

>CALIBRATING THE MULTIDRIVE

Starting first scan with

-"Start" to begin the automated calibration process (We suggesting using the palm tree included with the MultiDrive) -"Skip" if you wish to proceed to the scan panel and choose -"Learn More" to be directed to this help page.

You can

-This function is available for re-calibration when alignment results in an error or when the MultiDrive was detached and is reattached.

>Scan Process

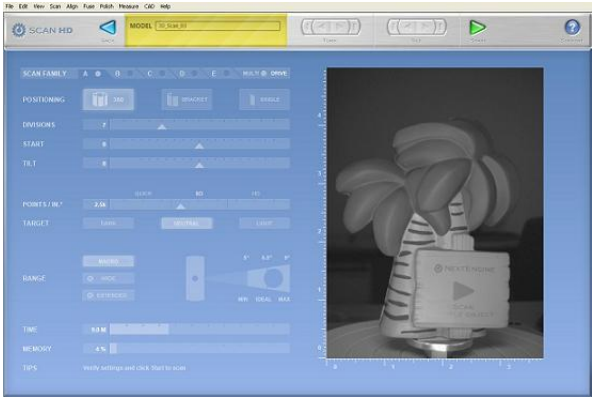
>SCANNING PROCESS

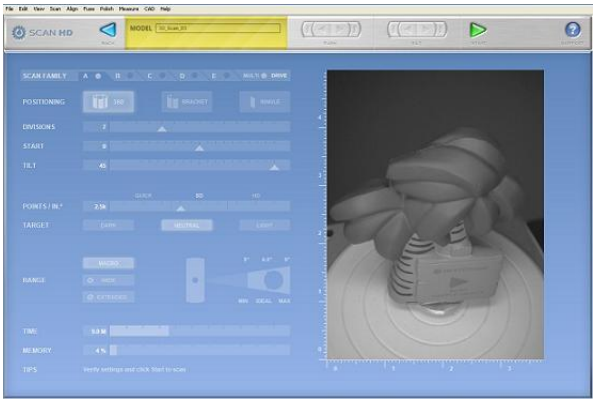
After calibration is

A new scan panel will be

-Five families are now available for predefined settings for Positioning, Divisions, Start Angle, Tilt Angle, Points/IN^2 and Target -Clicking on the family name will enable the tab to edit the settings. -To enable or disable a family, simply check or uncheck the circle next to the family name. -Starting positions can be set for both the initial and tilt axis by moving the slider bar arrow. -The start axis has the full 360 rotation and tilt axis is bounded to -35 to 45 degrees. -Use the top slider bars to visually set the starting and tilt positions. (This will update the settings for the scan family)

-Select the scan settings for each tab and check the tabs you want to have scan. If the setting for a tab have been adjusted, but the tab is not checked it will not scan.





-All MultiDrive scans are to be in MACRO mode. -Select a ROI for your model to prevent the MultiDrive from being scanned in for certain tilt angles. -If additional scans are needed, enter scan panel and position the model by using different starting and tilt angles to capture additional scans. -If you physically adjust the part, then a 3 pin alignment will be needed to align. -When finished, trim unnecessary data and "Fuse" or "Volume Merge" the model for export: ->

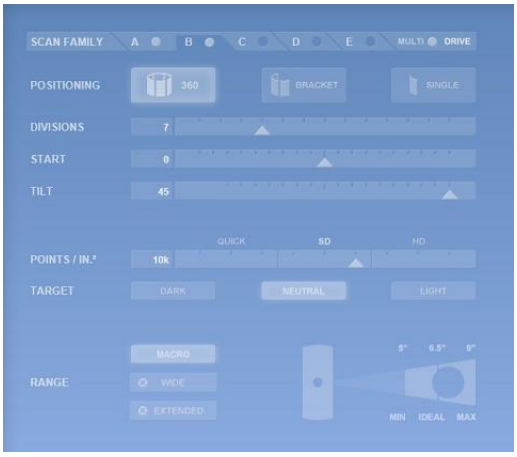
>Troubleshooting

b>Switching between AutoDrive and MultiDrive - Simply plug in an AutoDrive to display the proper UI. - When reattaching the MultiDrive, make sure to recalibrate as needed. - When more than 5 Scan families are required, then just click on scan to enter the scan panel, and you can add 5 more new sessions. These scans should auto align to the previous scans assuming all the movement and rotations were done by the turntable. If they don't auto-align , just drag the scans into the green and refine (no pins required) - Force Calibration. If your scans are not coming in aligned, you may need to run a force calibration. You can do this from the drop down menu , Align, then go down to Calibrate MultiDrive

>Dental

>DENTAL Recommended Scan Settings for Dental Cast Models

Family A Divisions: 6



Family B Divisions: 6

-Use the HD speed for higher resolution

1.10 ScanStudio HD 1.3.2

1.11 QA-Scan

>Proven Accuracy, Super Speed and Huge Data Capacity When it comes to inspection, every calculation counts. That's why QA Scan's geometry calculation algorithms have been tested by America's NIST, Britian's NPL and independently certified by Germany's PTB metrology authority as Class 1 accuracy. Top manufacturers around the world trust QA Scan to measure thousands of parts every day.

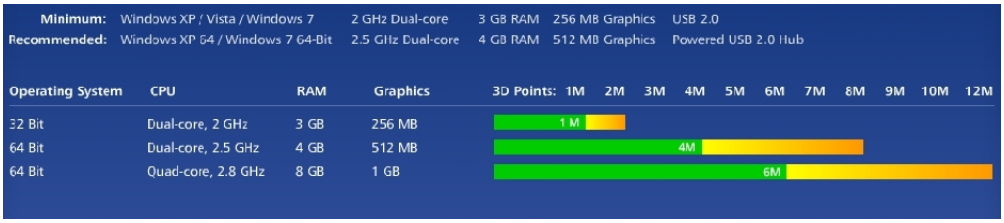
Chapter 2

Installation

2.1 System Requirements

>PC

The 3D Scanner HD is a high resolution device, and quickly captures many millions of points and pixels. A powerful PC is key for being able to visualize and take full advantage of this data.

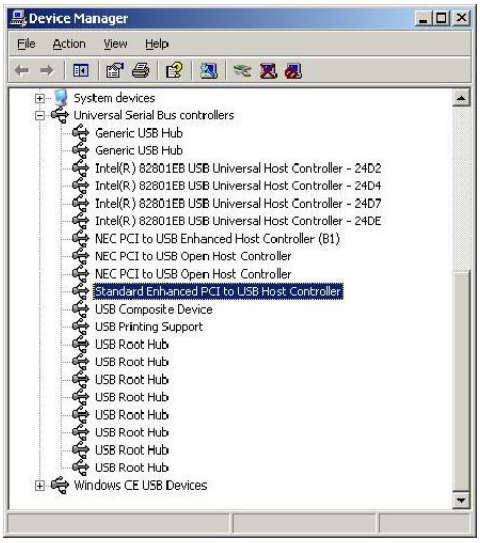


Note: If you are going to be scanning large or complex models, we highly recommend running a 64bit OS and upgrading your RAM to at least 4 GB. For a fast viewing experience, a good graphics card is essential. In our testing we've found that not all GPU's are optimized for dealing with lots of points and pixels. Quick tip for a new Graphics Card: The latest and greatest is the nVidia GeForce GTS/GTX series. They are well priced and can handle large amounts of scan data smoothly. The GeForce GTS/GTX series is available on Newegg with a price range of $115 to $300. High-end systems need sufficient power to run properly. If you are seeing errors in ScanStudio HD, it maybe related to an under specified power supply. A 600+ watt power supply is recommended to run high-end systems like those with Intel Core i7 processors. If you have questions about your system configuration, we'd be happy to help. Please note the SD scanner is only compatible with Windows XP and Vista when you are running as the administrator. All software developed after ScanStudio CORE is only for HD scanners. If you would like to upgrade your SD scanner please contact NextEngine at info@nextengine.com. Please click "Ask?" to talk to us about it.

>USB

The scanner requires a USB 2.0 connection. Here's how to check if you have USB 2.0 support, which is required to run the Desktop 3D Scanner. - Right-click My Computer - Click on Properties - Click on the Hardware tab - Click on the device Manager button

- Scroll down as needed until you see Universal Serial Bus Controllers - Expand that by clicking on the boxed plus sign in front of Universal Serial Bus Controllers



If it says "Standard Enhanced PCI to USB Host Controller" it is 2.0. If it does not say "Enhanced" it's USB 1.0.

>PC Buying Guide

It's now possible to purchase a PC with great scanning, CAD, and graphics performance for under $1000. We've found that the best combo in terms of price / performance is to assemble the computer from scratch, purchasing individual parts. For a ready made PC, options such as Dell and HP will let you choose individual components to meet your needs. Some tips are provided below for finding the best deals (as of November 2009). We don't have a relationship with any of these vendors, but this is how we buy most of our test hardware. Go to Newegg.com and check out their latest deals.

Look for a Intel Core2 Quad Processor. These are the some of the best processors currently available, and are dropping in price significantly. Intel Core2 Quad Q9400 - 2.66GHz 6MB L2 Cache - LGA 775 95W Price: $190 http://www.newegg.com/Product/Product.aspx?Item=N82E16819115131

Upgrading the RAM: For stable performance when capturing complete models, 4 GB of RAM is recommended. One example: 4 GB DDR2 PC2-8500 RAM Price: $89 http://www.newegg.com/Product/Product.aspx?Item=N82E16820231166&cm_sp=DailyDeal-_-20-231-166-_-Product Upgrading the Graphics Card: We've found that the nVidia GeForce GTS/GTX series are well priced and can handle large amounts of scan data. We've also found that SolidWorks and other CAD programs work quite well with these cards. Here's a well priced sample from Newegg.com nVidia GeForce GTS 250 - 1GB of RAM Price: $150 http://www.newegg.com/Product/Product.aspx?Item=N82E16814150439

Make sure to download the latest driver for your Operating System The ATI FireGL cards are also recommended. They have great price/performance. We do not typically recommend purchasing a nVidia Quadro for this application. This is because only the high-end Quadro models have sufficient processing power to handle large numbers of 3D vertices.

>Supported Operating Systems

ScanStudio HD 1.3.2 runs on Windows x32 and x64 operating systems,

including Windows XP, Windows Vista, Windows 7 (x32 & x64), and Windows 8 (x32 & x64). ScanStudio HD 1.3.2 offers a full 64 bit application. ScanStudio CORE with the SD scanner is only compatible with Windows XP, Vista (with administrator rights) as well as Windows 7 (x32 & x64), and Windows 8 (x32 & x64) under special installation instructions. Installation instructions for ScanStudio CORE with Windows 7 or 8 (x32 & x64) can be found here: 32-bit: ->

64-bit: ->

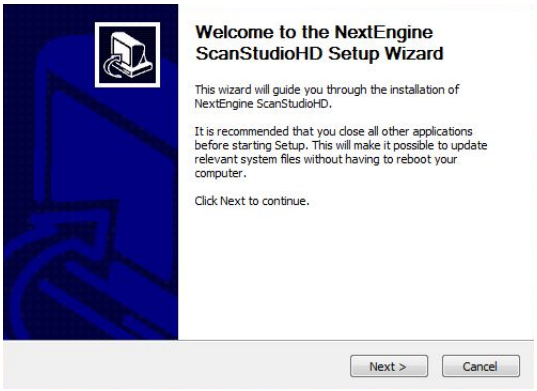
2.2 Software Installation

>Download

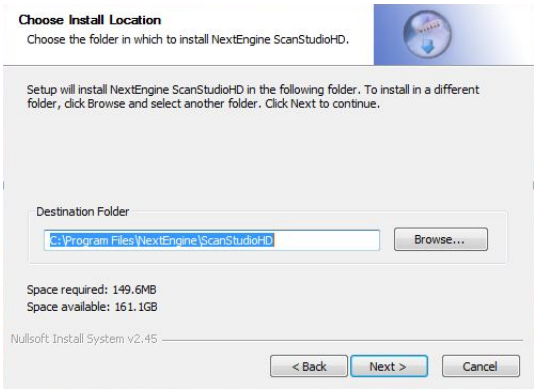
Please uninstall 1.7.3 before installing ScanStudio HD. - Go the ScanStudio Quick Start Page at http://www.nextengine.com/start Link to the Download for ScanStudio HD 1.3.0 ->

Enter your e-mail address and password

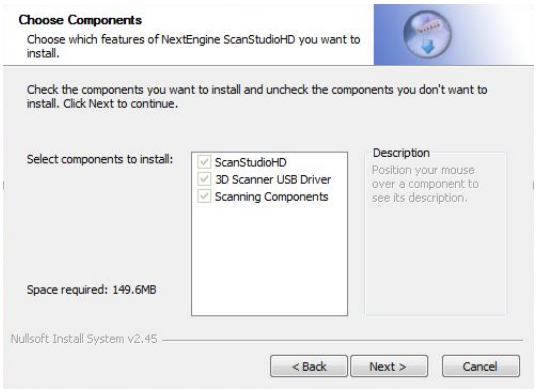
- You can find your username and password in the order confirmation e-mail. If you need your account information please e-mail info@nextengine.com - Choose to SAVE the file. After download is complete, double click the installer file to start Installation.



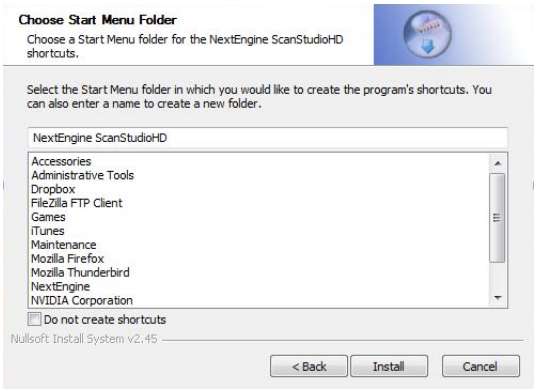
Accept the License Agreement



It is recommended to install

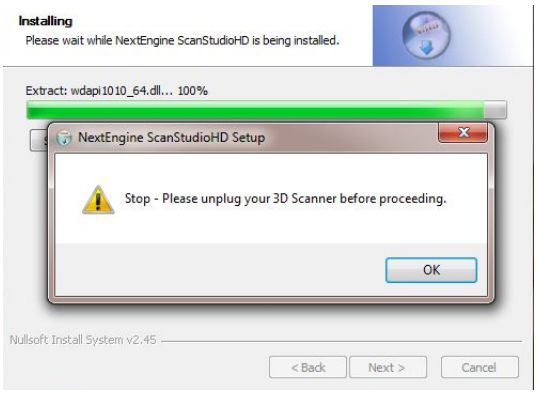


Every box should be checked

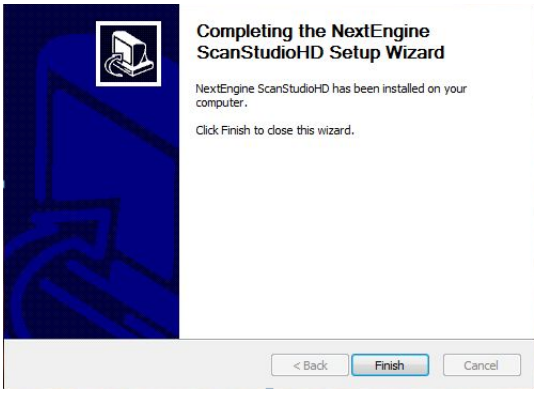


Click to Install the Software

The latest version of .net is



Make sure the scanner is



Once Installation is complete

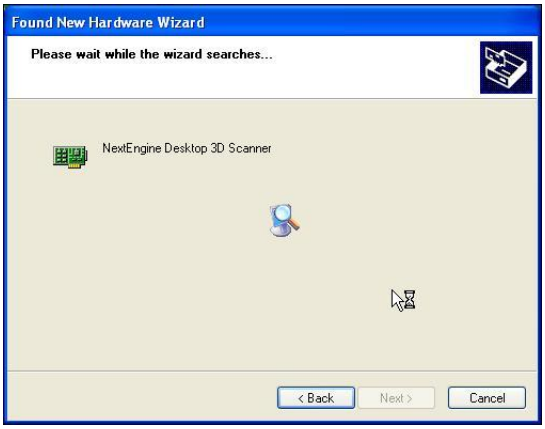
- For an SD scanner and ScanStudio 1.7.3 you will need to be logged in as an administrator to install and run the software. For HD scanners running HD 1.1.0 and newer you are required to install as an administrator, but do not need administrator privledges on the computer to run the software.

>Connect

- Connect the scanner to the computer's USB port

- For XP and Vista a window will appear alerting you that new hardware has been detected.

Select option to Install the



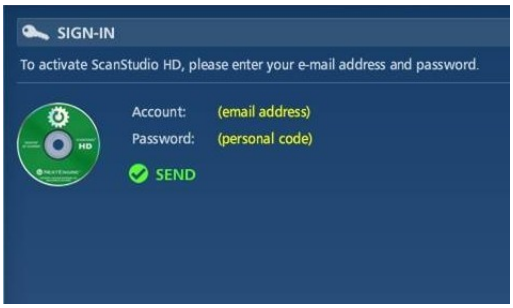
When the wizard has

- For Windows 7 the drivers should automatically install once you plug in the scanner.

The scan

>Online

If you are connected to the internet activation is very simple.

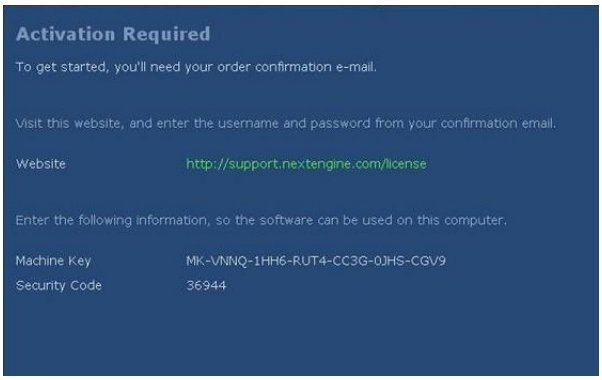


You will be asked to sign-

- If your computer is connected to the internet it should automatically detect your computer and validate your ScanStudio license. - Go to Help, About ScanStudio to see which version of ScanStudio you are running - Click on Support and go to My Software to see your license status.

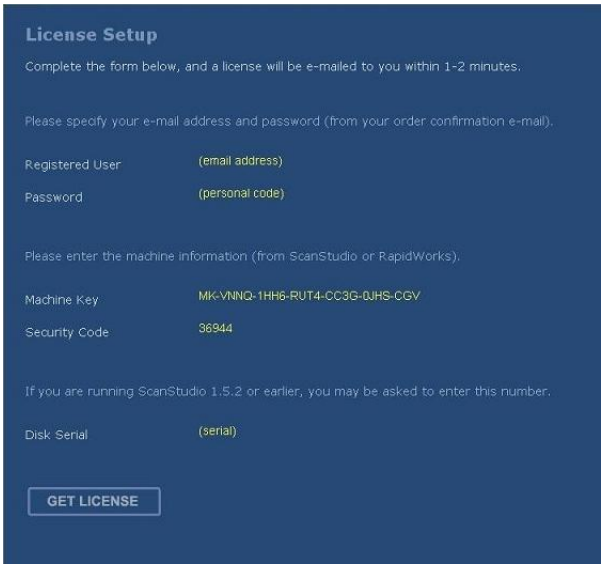
>Offline

You do not need an Internet connection to use ScanStudio.



If your computer is offline you

- Please go to this link http://support.nextengine.com/license/setup.



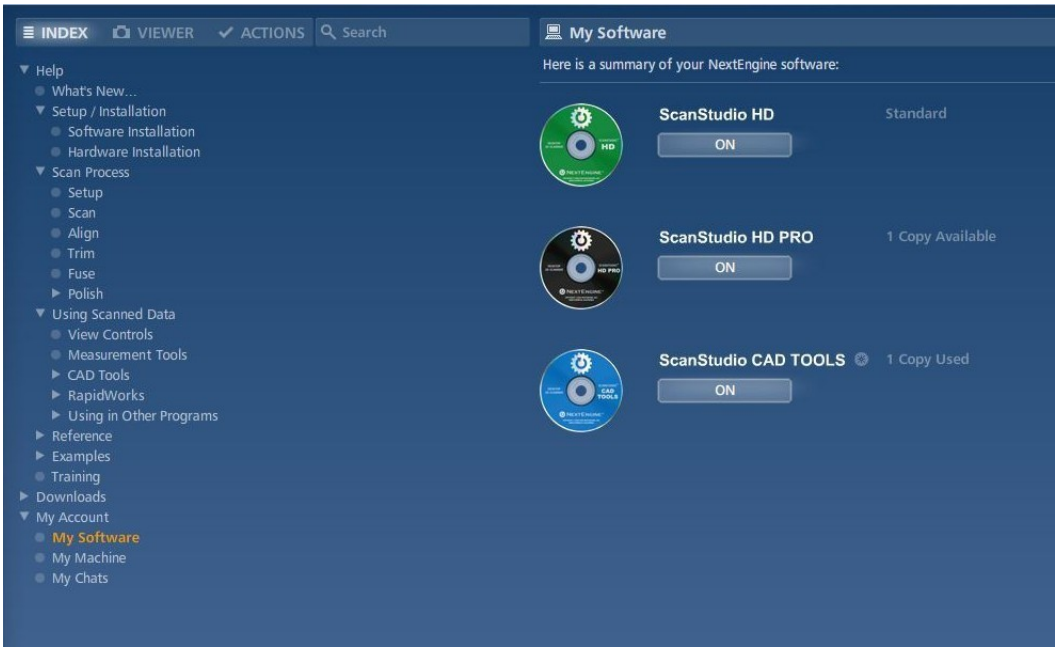
Enter in the requested machine

Your license will be e-

- Transfer the license file to your offline computer via a USB drive. - Save the license file on your computer. - Click the license file to launch ScanStudio.

>License

>ScanStudio CAD Tools and HD Pro Licensing: - CAD Tools and HD PRO are assigned to a single username and can only be used on one computer per license.



To activate, click where it says OFF and then it will say

> License Transfer Procedure - Click on Support inside of the application. - Go to My Software - You need to turn the software OFF on the old computer before activating it on a new machine. *If you have a question about your license please click ASK and someone from technical support will help you.

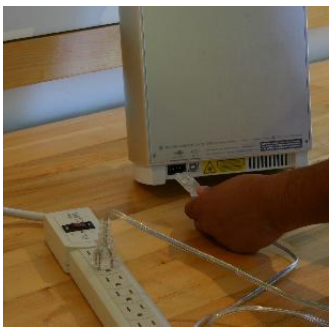
2.3 Hardware Installation

>Scanner

Installing the Scanner:

- Get your USB and power cords out of box

- Plug power cord into outlet and back of scanner



- Plug USB cord into back of scanner and computer USB port

Note: USB 2.0 is required to handle the large volume of 3D data and images.

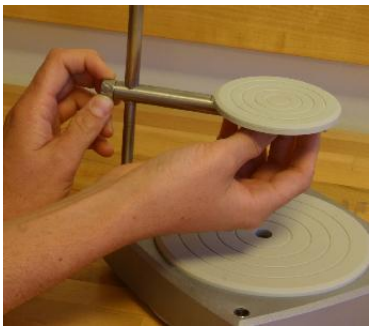
>AutoDrive

b>AutoDrive

>PartGripper

- Screw PartGripper into one of four corner sockets on AutoPositioner

- Tighten Platter on PartGripper



- Rotate Post clockwise (about 6 turns) to tighten PartGripper into AutoDrive

>Tripod

>Scanner and Tripod

There is a screw hole on the bottom of the scanner for attaching the scanner to a tripod

Next Step: Download and install ScanStudio -> or if already installed start your first scan

2.4 Customizing ScanStudio HD

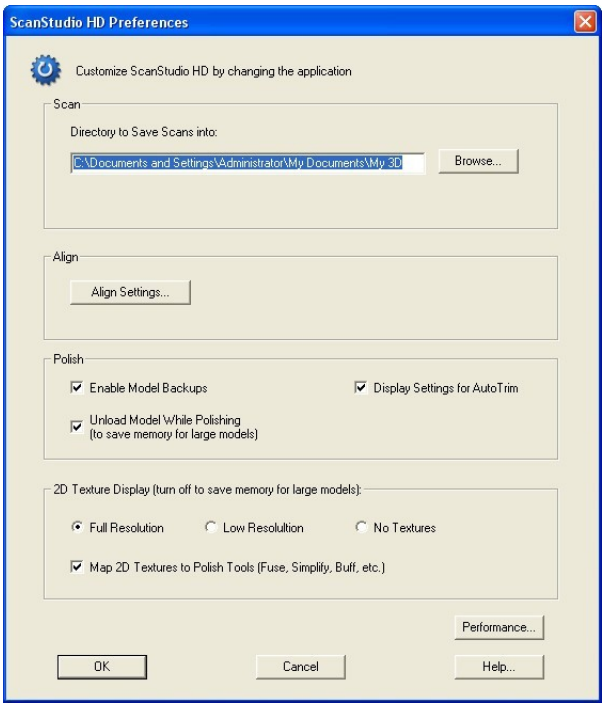
>File Management

-Each new scan is named 3D_Scan_## where the ## gets incremented to ensure a unique filename for each new scan. -When you capture the first scan in a model, you can specify the filename by entering it in the yellow status area in top bar of the Scan Setup Panel:

-A new folder will be created in your scan results directory with the specified name. Your SCN and JPEG files will be saved into that folder as the scan is captured. -When you do a File-Save As, ScanStudio will save all of the needed files (SCN, JPEGS, etc.) into the directory you select, so you should be able to delete the 3D_Scan_## directory once you've done a File-Save As. -File-Save should save your current SCN file wherever it resides, so it should save into the 3D_Scan_## directory unless you have performed a SaveAs or named the model at scan time, at which point it would save into your specified directory.

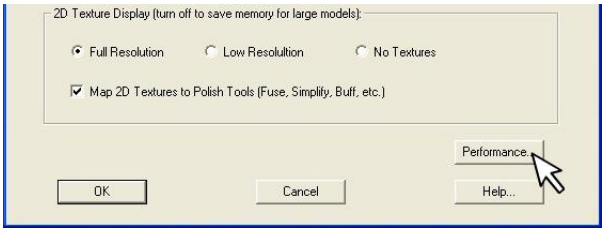
>Preferences

-The Application Preferences Dialog is available from the Edit-Preferences menu and can be used to customize ScanStudio to fit your usage

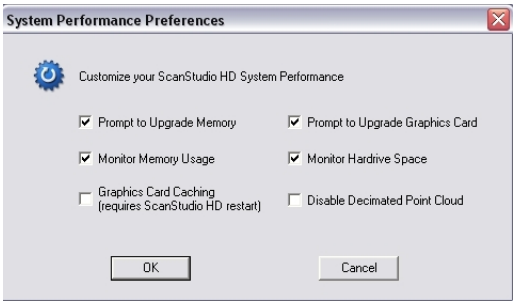


2D Texture Display -Enable/disable texture loading and display (can be disabled to save memory). -If it is disabled your model will only be displayed in solid mode.

>Performance



Click on Performance to select



b>Disable Decimated Point Cloud - By deafult the decimated point cloud display is enabled. - It will intelligently reduced the point cloud for accelerated responsiveness. - You can disable this display option here.

Chapter 3

Getting Started

3.1 Setup

>Surface Prep

Prepare dark, shiny or transparent objects using included tools to help the lasers capture the data.

Paint Pens: Washes off

Powder: Talc

Testing has also shown that a spray powder like Magnaflux Spotcheck SKD-S2 Developer works well for prepping objects prior to scanning. Here is a link to the site where you can purchase. Magnaflux Buy Page

Magnaflux Spotcheck

Other spray alternatives such as foot powder spray or white hairspray can be used as well:

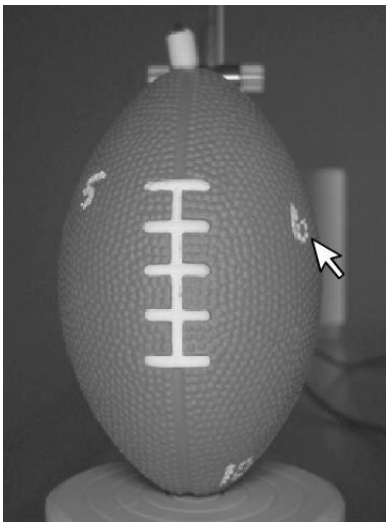
Foot powder spray

White Hairspray

>White Hairspray Buy Page

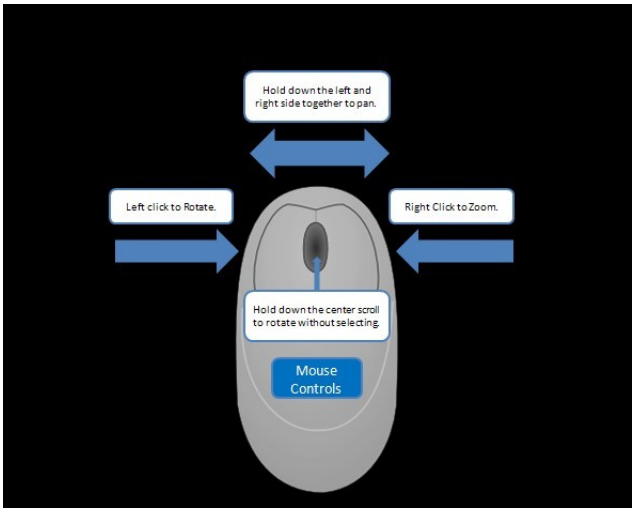
>Alignment Prep

It may be helpful prior to scanning to make alignment marks using the alignment pen. These marks will make it easier to place pins and identify locations on the object. Alternatively, the 3D geometry that the Scanner captures can be used to align scans.



3.2 Controls

>Mouse Controls



- Right click to zoom. - Left click to rotate the model. - Hold down the left and right buttons together to pan. - Use the center scroll button to pan without selecting an area during trim.

>Starting and Stopping

- Click the Start button to run the scan

- Click the Stop button to stop the scan

>NextWiki Support Center

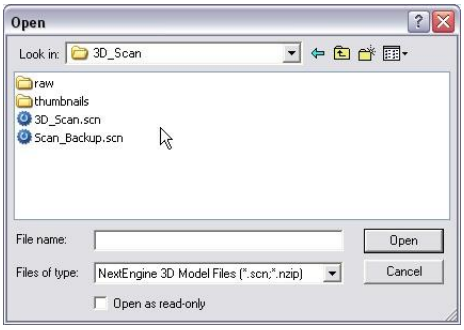
The SUPPORT button will take you to the NextWiki Support Center.

Click on

>Browsing

- Click on the Close button to close a scan before starting a new project

- Click on the Browse button to open a previously saved scan


Open
Look in:
3D_Scan
raw
thumbnails
3D_Scan.scn
Scan_Backup.scn
File name:
Open
Files of type:
NextEngine 3D Model Files (*.scn;*.nzip)
Cancel
Open as read-only

3.3 Scan

>Intro

- Enter the Scan Panel by clicking the Scan button

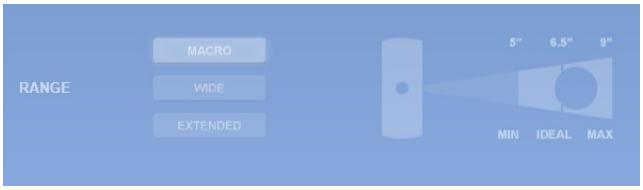
- Customize your scan name in the yellow toolbar

>There are 3 main types of scans:

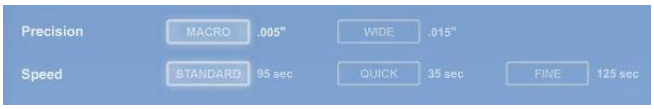
Single: -Single scan of the object from one angle.

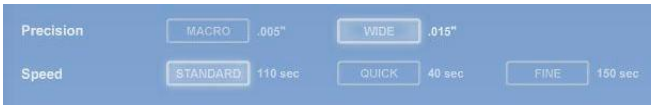
>Speed

>Precision: Choose MACRO or WIDE distance based on object size and desired resolution



b>ScanStudio CORE Choose Standard, Quick or Fine scan speed based on desired scan time and quality





>ScanStudio HD/HD PRO

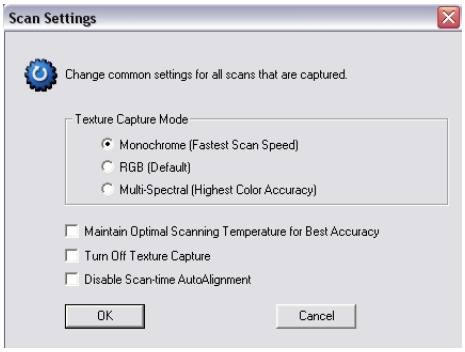
	Speed	Decimation			
		HD		HD PRO	
		Points/IN²	Triangle Size	Points/IN²	Triangle Size
1	HD	40k(2x)	0.0050"	160k (1x)	0.0025"
2		17k(3x)	0.0075"	40k (2x)	0.0050"
3		10k(4x)	0.0100"	17k (3x)	0.0075"
4	SD	4.4k(3x)	0.0150"	10k (2x)	0.0100"
5		2.5k(4x)	0.0200"	4.4k (3x)	0.0150"
6		1.6k(5x)	0.0250"	2.5k (4x)	0.0200"
7	Quick	1.1k(4x)	0.0300"	2.0k (3x)	0.0225"
8		700(5x)	0.0375"	1.1k (4x)	0.0300"
9		500(6x)	0.0450"	700 (5x)	0.0375"

Macro Reference Table

	Speed	Decimation			
		HD		HD PRO	
		Points/IN²	Triangle Size	Points/IN²	Triangle Size
1	HD	4.4k(2x)	0.0150"	17k (1x)	0.0075"
2		2.0k(3x)	0.0225"	4.4k (2x)	0.0150"
3		1.1k(4x)	0.0030"	2.0k (3x)	0.0225"
4	SD	500(3x)	0.0450"	1.1k (2x)	0.0300"
5		280(4x)	0.0600"	500 (3x)	0.0450"
6		180(5x)	0.0750"	280 (4x)	0.0600"
7	Quick	125(4x)	0.0900"	220 (3x)	0.0675"
8		80(5x)	0.1125"	125 (4x)	0.0900"
9		55(6x)	0.1350"	80 (5x)	0.1125"

Wide/Extended Reference Table

>Tips - For ScanStudioHD, go to Scan -> Settings -> Texture Capture Mode - and choose Monochrome or No Texture Capture for faster scan speed.



 - Choose Fine or HD Speed for the greatest resolution. - Choose Quick Speed to capture data the quickest with lowest resolution (not recommended for most parts). - Calibration will occur for every scan family (AutoDrive and MultiDrive) by default, but can be disabled by checking the box for "Disable Scan-time AutoAlignment"

>Position

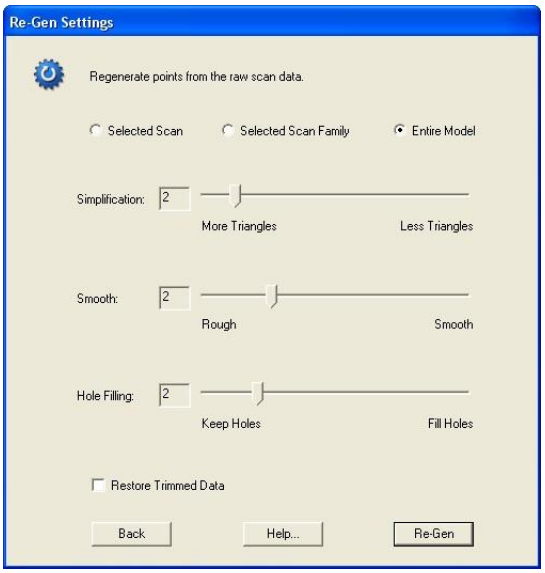
b>Turn/Step Arrows:

>Region of Interest - Drag the cursor around the object to select a smaller scan area

>Regenerate

b>Steps: - Click on Fuse, Re-Generate Scan(s)

- Select new scan settings for reprocessing

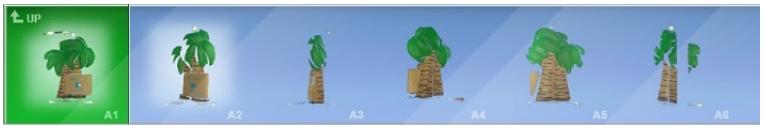


b>Next Step: Remove unwanted areas such as the PartGripper using Trim or Align your scans to make a complete model -> . For tips on viewing your scan -> - If you have any further questions, please click on the Ask? button.

3.4 Align

>Intro

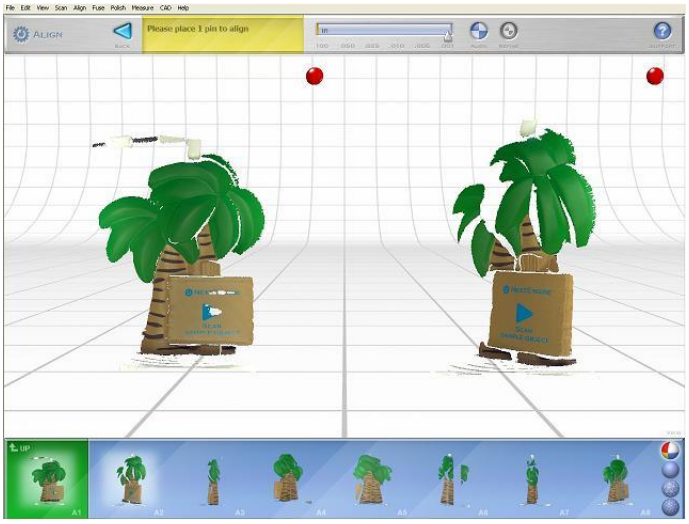
>Selecting Scans to Align - Double click on thumbnail of a family to separate the family into individual scans



>Alignment Screen

Click on Align to enter

- When you enter Alignment, you'll see a split screen view - The left side shows an assembly of scans/families that are already aligned - The right side shows the next piece that you're attaching to that assembly

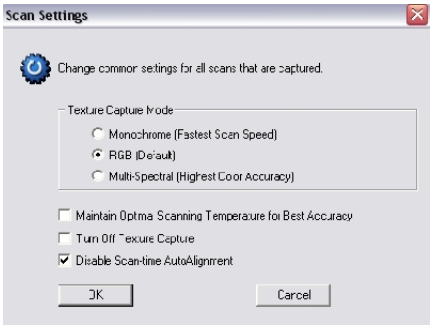


>Thumbnail Bar

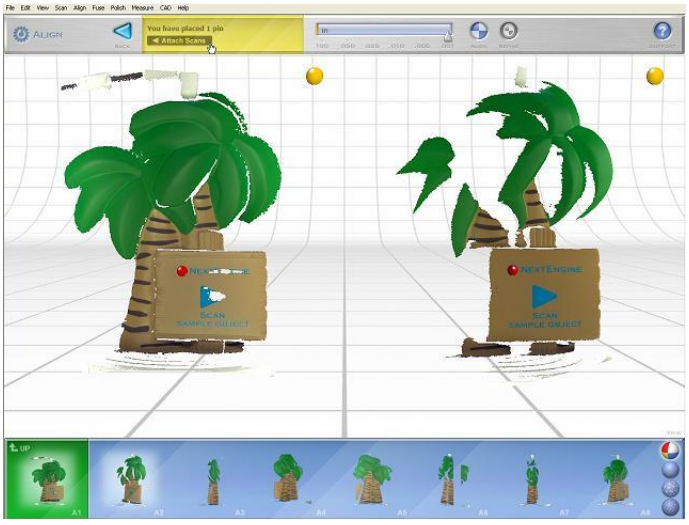
- The green side contains scans and families that are already assembled - The blue side is for pieces that aren't part of the assembly yet - To break apart or assemble your model, simply drag parts from one side to the other

>Single Family

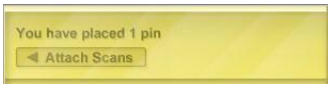
>AutoAlign - By deafult AutoAlignment is enabled and will run for all 360 and bracket scans. - To disable AutoAlignment go to Scan ->Settings.



>Alignment for 360 or Bracket Scans - Place 1 pin on a common location between 2 scans within the family. - Drag the pin to the location or double click on the point to place the pin.



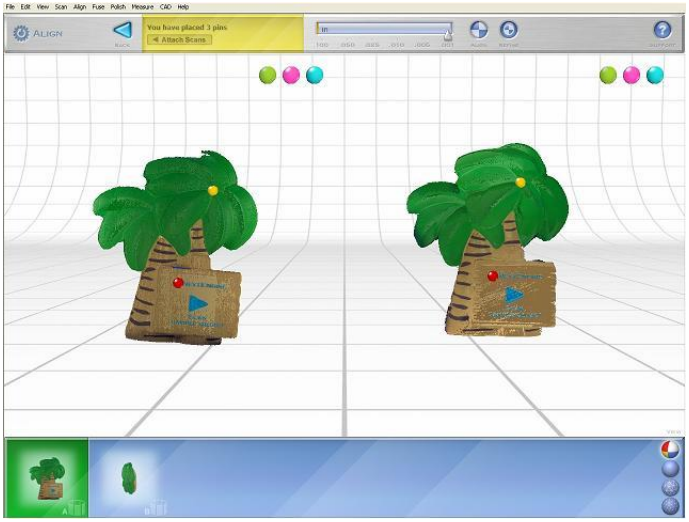
>Attach Scans - The yellow status bar will walk you through the process - Click "Attach Scans" to add your scan to the assembly



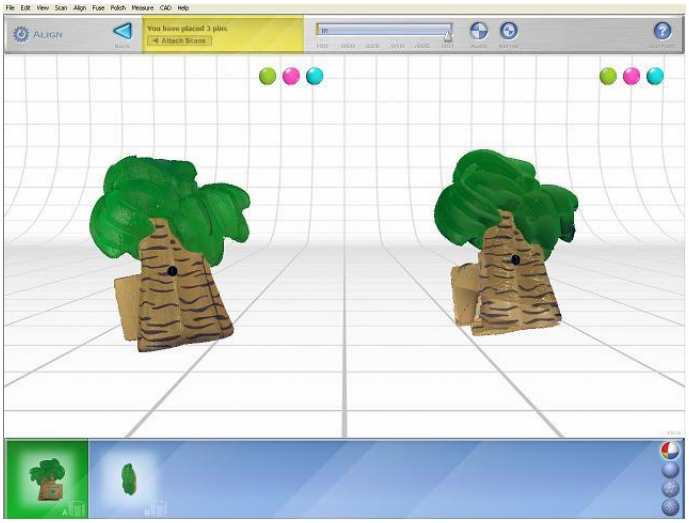
- Click File > Save after each alignment in order to save pin locations - You can detach a scan by dragging it from the green to the blue and then you can adjust the pin.

>MultiFamily

- Multiple families can be aligned together. - Place 3 pins on common locations between the 2 families

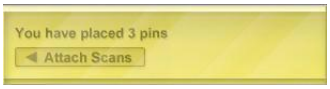


Two pins placed in front



Third pin placed in back

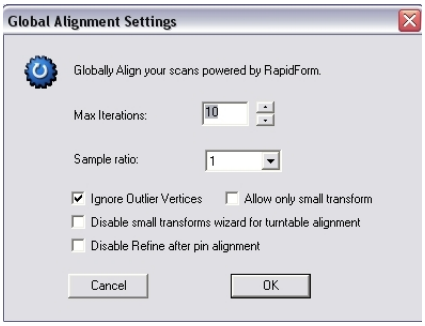
>Attach Scans - The yellow status bar will walk you through the process - Click "Attach Scans" to add your scan to the assembly



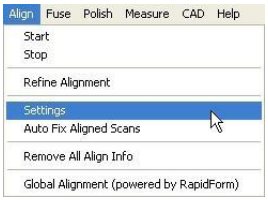
b>Next Step: Once it's all put together, learn how to trim and fuse your scan data ->

>Align Settings

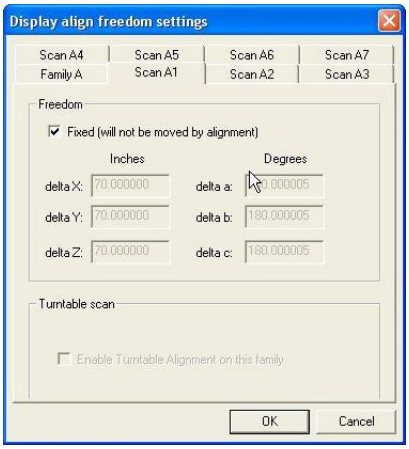
>Advanced Settings



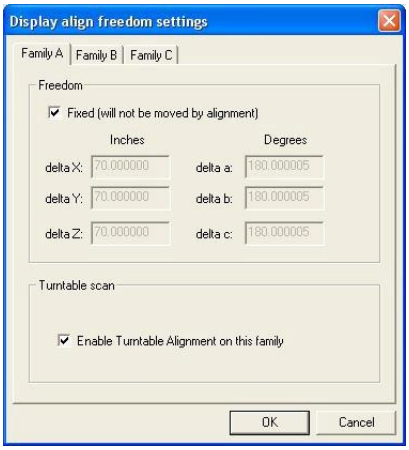
b>Fixing a Single Family -After your single family alignment is complete (double click on the family if you need to expand it out), then go to Align, Settings.



-Check the box "Fixed (will not be moved by alignment)" for scans A1-An. This will lock the individual scans in the family and not be moved with future alignment. -If you check the Fixed button for the Family A tab, then this will lock the entire family in place and not just the individual scans for that family.



>Fixing Multiple Families -For multiple families, go to Align, Settings and check the box "Fixed (will not be moved by alignment)" for the families that have been sucessfully aligned and wish to be locked in place.



>Example: - Starting out with three families (One 360 and two brackets) - Attach Family A to Family B (both families are not fixed) - Go to Align, Settings and check "Fixed" for Family A and Family B (They are now locked in position) - Proceed to attach Family C to A and B. - After C is sucessfully aligned, then go to Align, Settings and fix Family C - Repeat for any additional family attached.

3.5 Trim

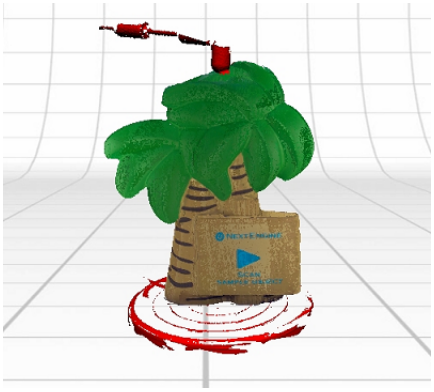
>Intro

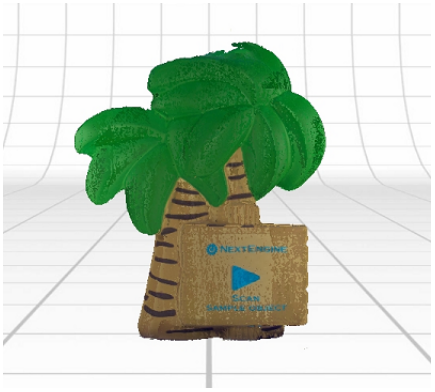
- Back up your scan file as a different copy unless ScanStudio has not done so already.

Click the 'Trim'

- Click the cirlce/square/square selector/poly selector button in the toolbar to select data

- Select the area on the scan to be removed and continue selecting until all unwanted area is highlighted - To remove selected area, click on the "Trim" button in the toolbar - Continue the process until all unwanted area has been removed





Before Trim

After Trim

>Deselecting

- If an area is incorrectly selected it can be deselected before trimming takes place. - To deselect an area, click on the "minus sign" in the toolbar, which will turn the selectors to blue

- Then click on the area to be deselected. - Click on the "plus sign" in the toolbar to return the circle/square to red and resume selecting area to be removed - Select "undo" under Edit in the toolbar to undo the last trim. (This will only work if you have Enabled Model Backups) - You can also restore trimmed data through Regeneration of your scan found here: ->

>Navigating

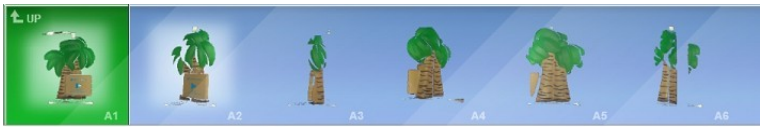
- Click on the "pointer button" before zooming or repositioning the object

- Drag object up/down while right clicking to zoom. - Drag the object while holding down both mouse buttons to pan ->. - Hold down center

scroll to rotate object without selecting any areas.

>When to Trim

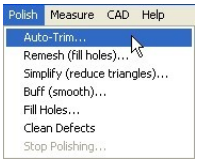
- You can trim completed individual scans of 360/bracket scans while other scans are finishing. - Before alignment you should not trim away parts of the object, only parts of the PartGripper. - After alignment you can trim overlapping data to improve fusing/merging. - Double click on the aligned family and drag the scan to be trimmed into the blue thumbnail bar



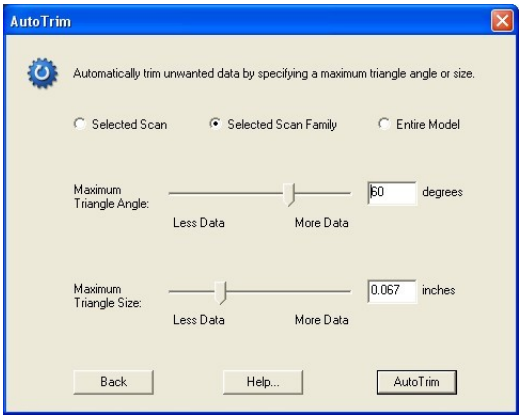
>Next Step: Fuse your scans to remove any remaining overlap -> or align your scans if needed ->

>AutoTrim

- Auto-trimming automatically detects and removes data that was captured at a steep angle relative to the line of sight of the scanner. - This can be useful in removing data that may negatively affect alignment or blending. - Auto-trimming is available under the Polish menu and should be run before aligning, fusing or merging multiple scans together.



- With this option selected you can choose the angle for trimming.



If you have any further questions, please click on the Ask? button.

3.6 Fuse

>Fuse

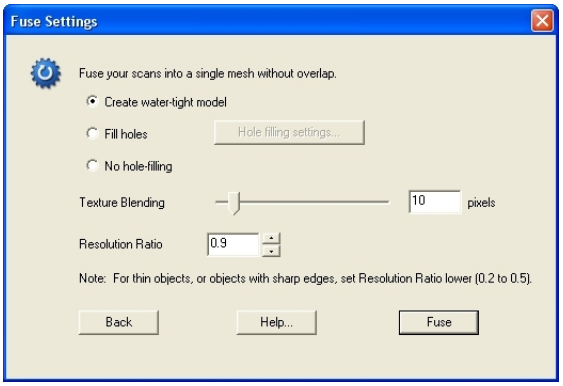
The Fuse tool Volume Merges, Remeshes, Fills Holes and Simplifies your aligned scan data. - Ensure that the data that you would like to fuse is aligned in the green section of the bottom view bar.

Click Fuse

Choose Simplification Level

- Enter the desired deviation tolerance for any mesh simplification (decimation) - 0.00" simplification will not simplify the data - Increasing the simplification will simplify your model and make the file size smaller. - It will perform intelligent simplification, which keeps more points in detailed areas and fewer points in larger planes.

Click to enter Settings



b>- It is best to keep this at the default of 0.9.

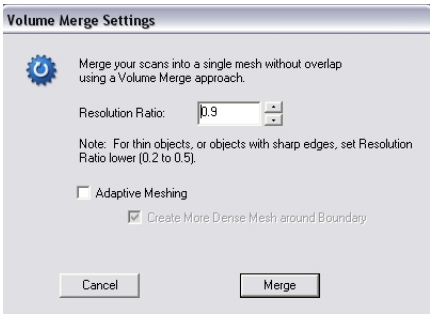
Click FUSE

New family C is created

>Volume Merge

b>To Merge multiple scans into a single mesh: - Ensure that the scans to merge are in the green section of the bottom view bar.

Select Volume



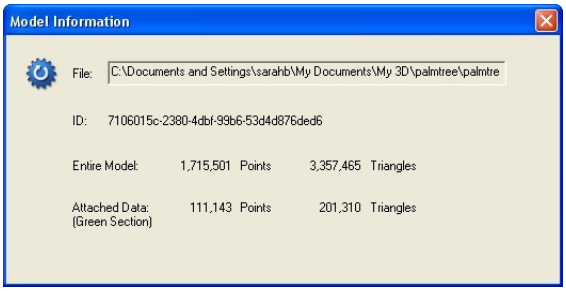
b>Adaptive Meshing - Adaptive Meshing will intelligently reduced the point cloud of the final merged model.

New family C is created

The Merge process will not automatically fill holes in the mesh where there is no scan data. You can use the Remesh option after a Merge to create a water-tight mesh (more info: ->).

>Fusing Large Models

- The number of points that can be merged or fused at one time is dependant on the Computer Specs. - To fuse/merge larger models we recommend these specs: CPU: Dual Core, Quad Core or i7 processor Memory: 4+ GB RAM Graphics Card: 512+ MB GPU (Dedicated, non-integrated) Operating System: Windows XP 64 Bit Windows Vista 64 Bit Windows 7 64 Bit You can check the number of points in your model under File->Model Information.

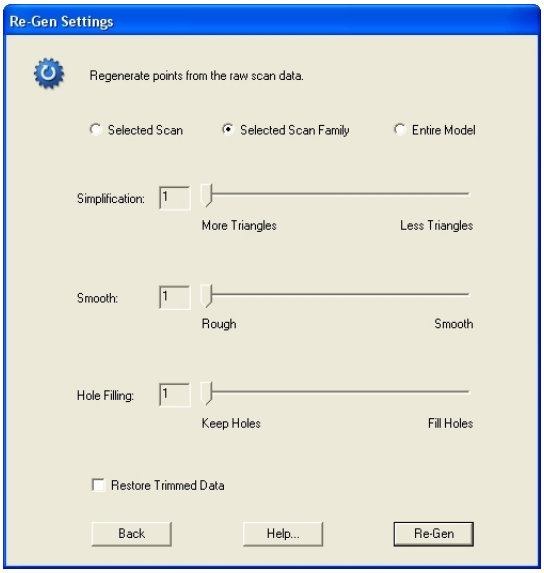


To reduce the number of points in your model Regenerate your data a higher simplification level. See next section for instructions for regenerating.

>Regenerate

Since the raw scan data is saved at scan-time, you can regenerate the points at any time with different point-generation settings. These settings have the same effect as the sliders on the scan setup screen. Re-Gen is particularly useful for changing the simplification value after a scan has been completed. Steps:

Click Fuse, Re-



Select new settings for

- Higher Simplification values will result in fewer points in the model. - Simplification level of 2 will result in 1/4 of the original data, level 3 will result in 1/9 of original data... - Simplification can be increased and decreased at any time without losing original data. - Restore Trimmed Data: Choose this option to restore the trimmed data from either a single scan, family or the entire model.

>Texture Quality

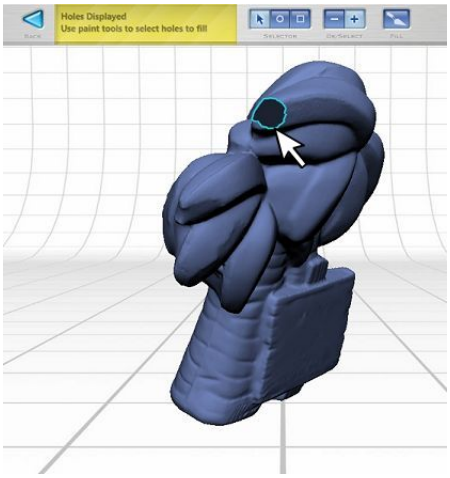
> Tips to improve textures: - Ambient lighting- Minimizing the ambient lighting in the room can help improve textures. - Object Distance- If you are repositioning the object make sure to keep the same approximate distance to reduce color variation. - Shadows- Try to minimize shadows as much as possible. Keep in mind the PartGripper can cause shadows. Prior to scanning you can preview the rotation using the STEP and TURN buttons in the scan panel. If necessary you can adjust the position of the rotations to reduce shadows. If you have a single scan with an extreme shadow you can try to trim out the shadow as long as the data was capture from a different angle.

3.7 Polish

>Hole Fill

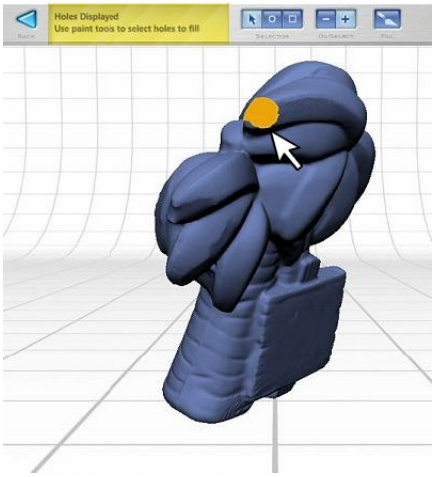
- Enter the Polish panel.

- Select the Fill tool.



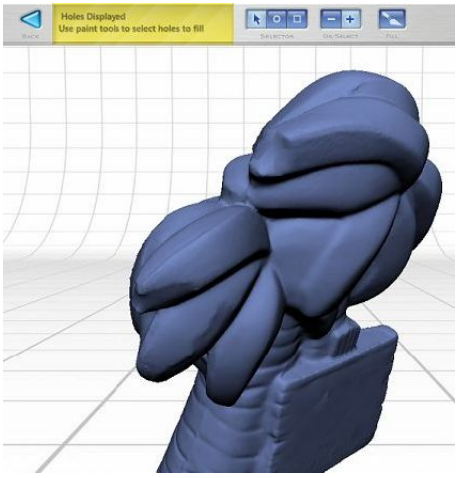
Holes are automatically

>Note: Please make sure that when using the Fill tool, you are working with a fused, merged or a single scan model. - Use the selector tools to select the holes that you would like to fill.



Selected holes will turn

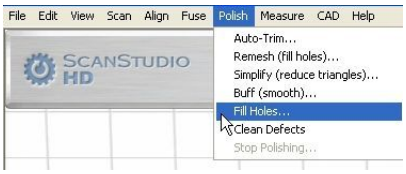
- When you finish your selection(s), select the Fill button to permanantly commit these triangles into your model.



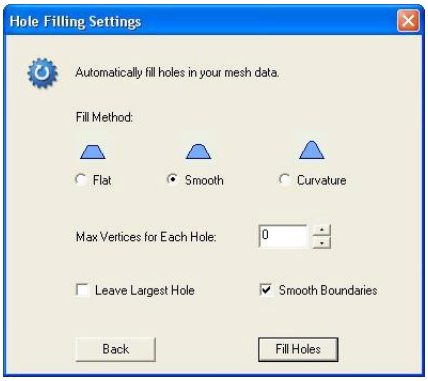
After Fill

>Auto Hole Fill To have ScanStudio automatically fill holes in the scan data: - Ensure that the data that you would like to fill holes on is a volume merged model in the green section of the bottom view bar.

- Select the Fill Holes tool from the Advanced Polish Menu.



- Enter desired Hole Filling Settings.



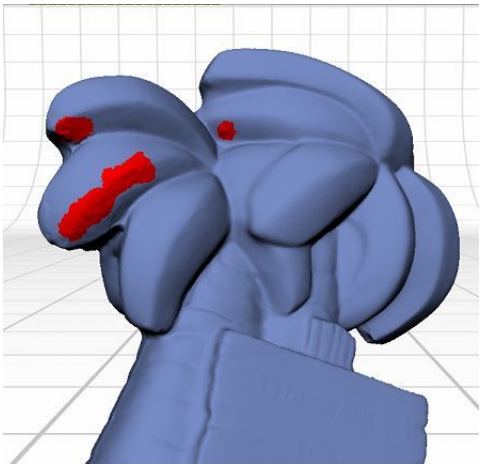
a. FILL METHOD: - Flat Fill will fill the holes along a flat edge. - Smooth Fill will fill the holes along a smooth edge. - Curvature Fill will analyze the neighboring geometry and try to match the overall curvature. b. MAX VERTICES: Controls the maximum number of vertices for holes to fill. Increase to fill more holes. c. LEAVE LARGEST: Enable this option to leave the largest hole in the scans. d. SMOOTH BOUNDARIES: Enable this option to smooth the vertices on the edge of the holes as part of the fill process. You can also use the Remesh tool to automatically fill holes in merged data: -> You can alternatively use the ScanStudio manual hole filling tool to manually select and fill holes (more info: ->). If you have any further questions, please click on the Ask? button.

>Buff

- Click on the Polish tool.

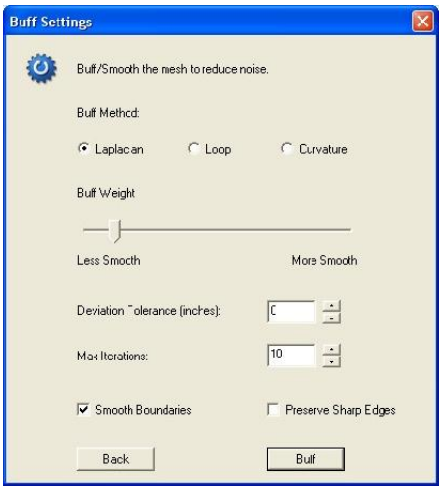
- Then click on the Buff tool.

>Note: When buffing, please make sure that the model is a fused or merged model. - Select localized data to smooth or all for the entire mesh.

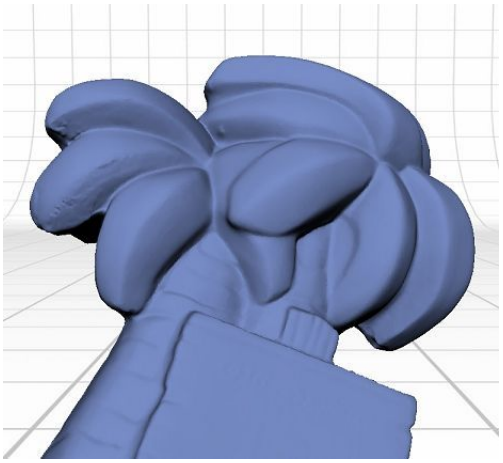


Selected data will be

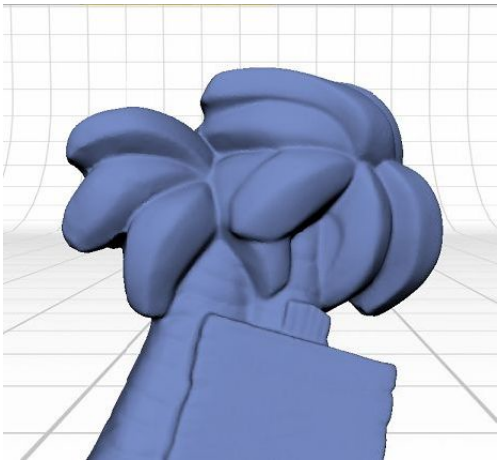
b>3. Enter the desired buff options:



>Results



Before



After

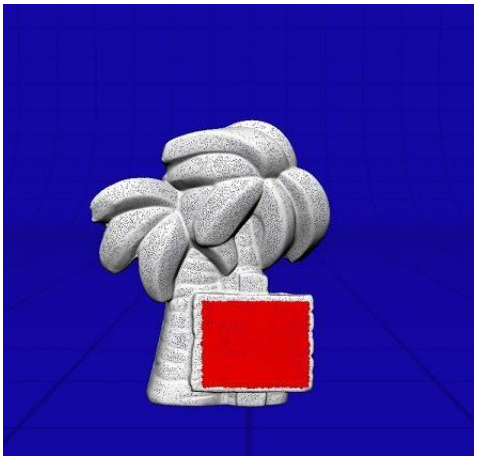
If you have any further questions, please click on the Ask? button.

>Simplify

>Note: When using the Simplify tool, please make sure that you are working on a fused or merged model. Simplifying prior to fusing/merging will create non-uniform mesh. Please regenerate scans if you need to decrease model size before fusing (more info ->). - Click on the Polish tool.

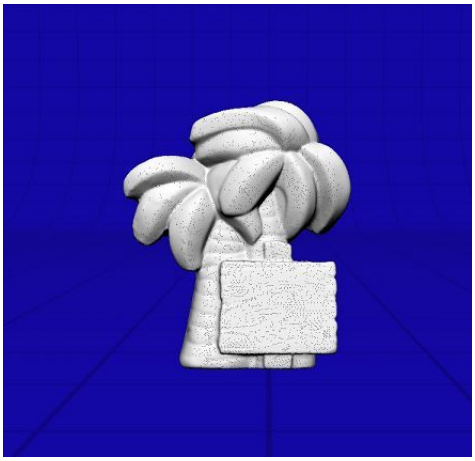
- Click on the Simplify tool.

- Select the local data to simplify or select all.

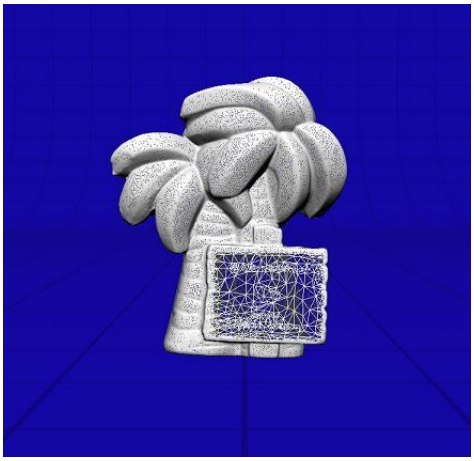


- Choose the desired simplification tolerance from the top menu bar slider.

- Click the SIMPLIFY button.



Before Simplify



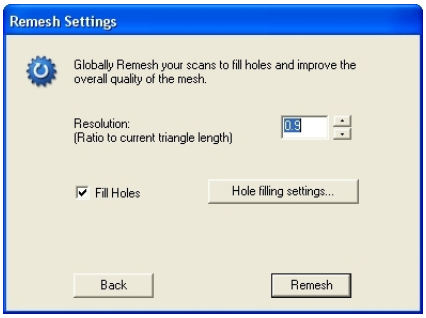
After Simplify

If you have further questions on the simplify tool, please click on the Ask? button.

>Remesh

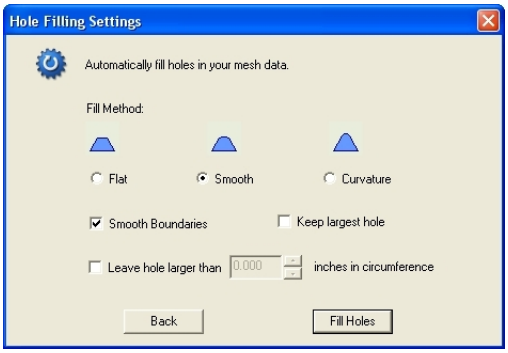
- Ensure that meregd or fused model is in the green section of the bottom view bar

>Note: It is advised to remesh scans that have been merged/fused. For more info: ->. - Select the Remesh tool from the Advanced Polish Menu.



Choose Remesh Settings

>Fill Holes: Select the Hole Filling Settings to fill some or all holes.

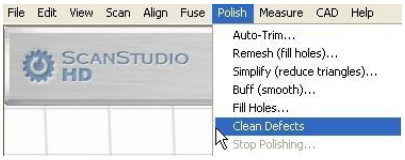


>Keep Holes Larger Than: If you don't want to fill all holes, then you can manaully set which holes of circumference size to fill. The Remesh tool can be very useful when run after Merging Scans to create a water-tight mesh. If you have any further questions, please click on the Ask? button.

>Clean Defects

>Clean Defects should be run at the end of your polishing process and can be used to automatically eliminate any self intersecting or non-manifold triangles. To Clean Defects in your mesh: 1. Ensure that your Merged and Remeshed model or fused model is in the green section of the bottom view bar.

2. Select "Clean Defects" from the Polish - Advanced menu.



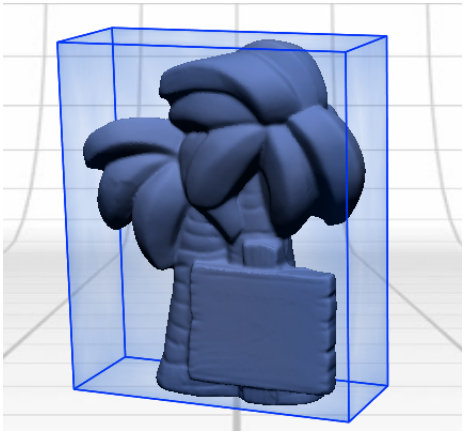
Any defects in the mesh will be automatically detected and cleaned. If you have any further questions, please click on the Ask? button.

3.8 Orient

The Orient Tool can be used to define an origin and Orient your scan data in a defined global coordinate space. - Click on the CAD button from the top toolbar to enter the CAD toolbar:

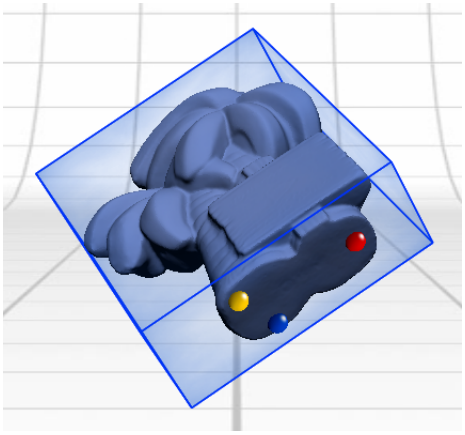
- Select Orient to enter the Orient toolbar:

- ScanStudio will show a bounding box representation of the common view planes (top, left, front, etc.):

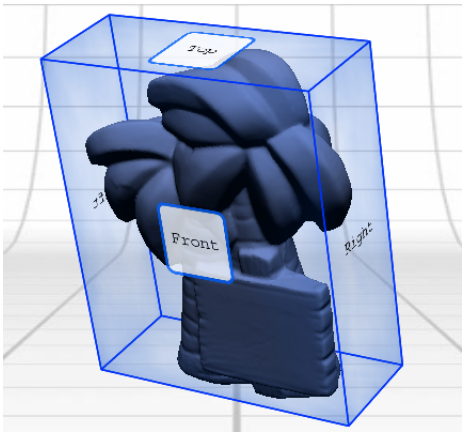


>Settings

>Base - Click the base button and place 3 pins on the object to define one of the common view planes of the bounding box:



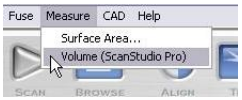
>Faces - Click on faces to view the front, back, left, right, top and bottom locations



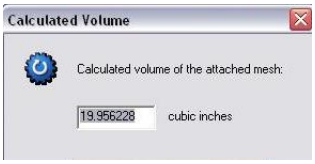
>Origin - Click on the origin button and place 1 pin on the mesh to define the origin. Notes: Mesh scan data can be globally oriented, but CAD data cannot.

3.9 Measure

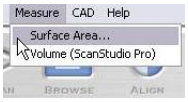
>Volume Measurement - Ensure that your fused or merged and remeshed data is in the green section of the bottom view bar. - Select Volume from the Measure menu:



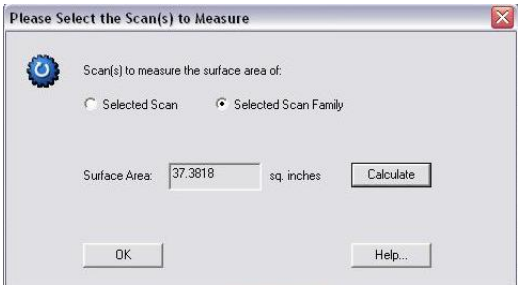
- The calculated volume will be displayed:



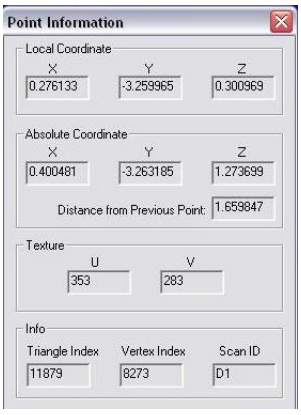
Surface Area Measurement - Ensure that your fused or merged and remeshed data is in the green section of the bottom view bar. - Select Surface Area from the Measure menu:



- The calculated surface area will be displayed:



>Point to Point Measurement - To measure a distance on a scan you can click on one point then press the letter "i" on your keyboard. - This will give you the coordinates of that point. - Then do the same at your second point and it will give you the new coordinates along with the distance to the previous point.

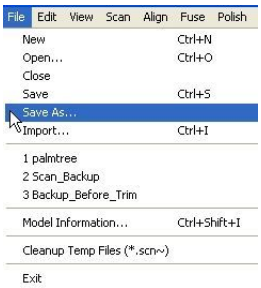


3.10 Output

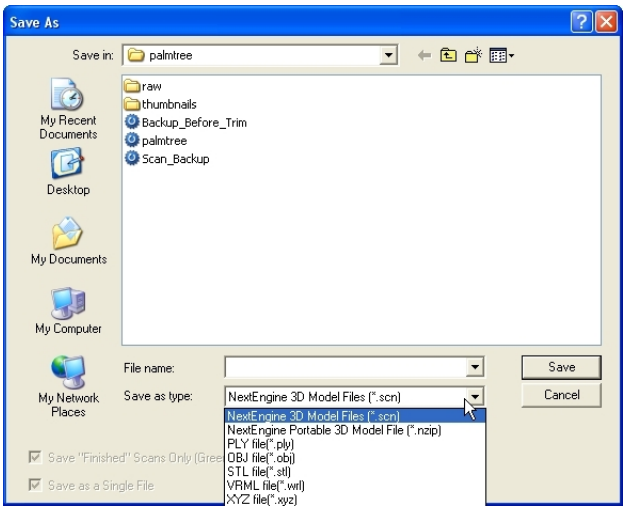
- Click the OUTPUT button to ouput the scan model.

-Choose the type of file you want to output

You can also export through the File-> Save As option.

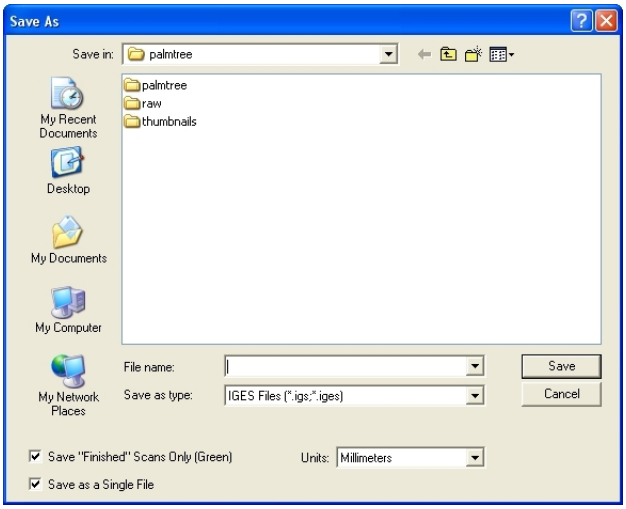


>Mesh Files



b>IGES and STEP Files - Exporting IGES and STEP files is only available with ScanStudio CadTools. - For more information about upgrading to CadTools please contact info@nextengine.com. - Mesh data cannot be exported as an IGES/STEP file. - Insure the model contains either splines or autosurfaces in the green section of the toolbar (for more info click here ->).

Select

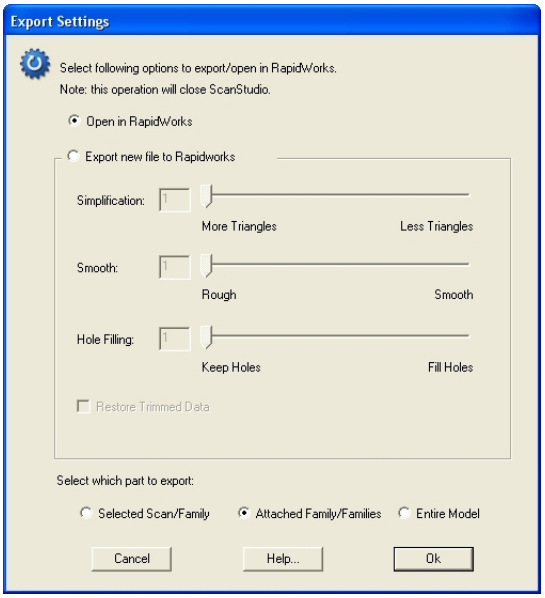


Name your scan, choose the ouput

>Rapidworks - Directly transfer a fused or unfused model from ScanStudio to Rapidworks. - Surfaces and Splines cannot be transferred.

Select Rapidworks

- Output your currently loaded model as is.



b>U3D - Due to our shift to a 64 bit platform we no longer support the U3D file format. - ScanStudio 1.1.1 is still available for download and it does have the option to export U3D files. - Download it at this link: -> - If Adobe updates the U3D file format we will reimplement it in future ScanStudio versions. For more information on using your scan data in Solidworks click here ->.

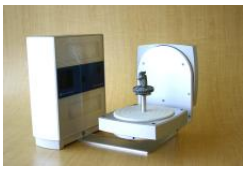
Chapter 4

ScanStudio HD Add-Ons

4.1 MultiDrive

>Intro

>New MultiDrive Platform for HD Scanner



360 360 360

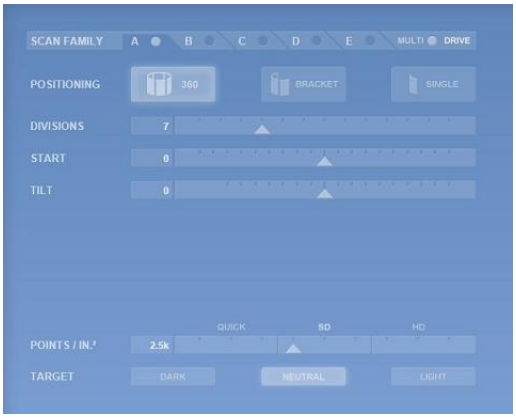
b>Overview -Automates alignment of multiple scan families

Up To 5 Scan Families Can Be

Existing 360 Rotation

Example

Click the SCAN



Define Rotation, Tilt,

-START scan and model will be ready for TRIM, FUSE and POLISH

>Setup

-Here are the items that are included with the MultiDrive:

Allen wrench L Bracket AutoPostioner

-Attach the L Bracket to the MultiDrive with two flat head screws and allen wrench

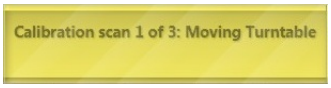
-Attach the MultiDrive to the bottom of the scanner and fasten a screw underneath the scanner for additional stability

-Plug in the MultiDrive to the scanner

-Start ScanStudioHD and proceed to Calibration

>Calibration

>MultiDrive Calibration



Manual MultiDrive Calibration

-You can also use the drop down menu of Align, Calibrate MultiDrive to run a calibration sequence. -An object should be mounted on the MultiDrive, we recommend using the palm tree included with the scanner. -This function is available for re-calibration when alignment results in an error or when the MultiDrive was detached and is reattached.

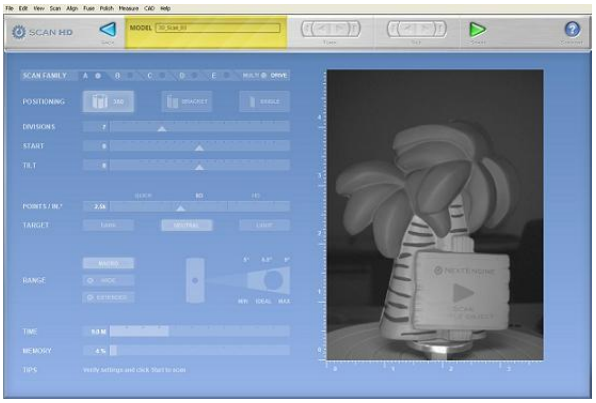
>Scan Process

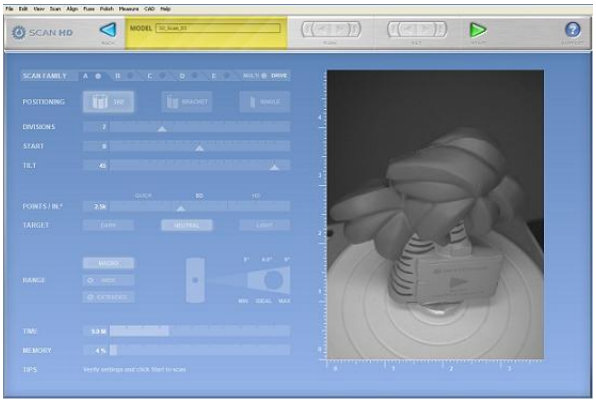
After calibration is

A new scan panel will be

-Five families are now available for predefined settings for Positioning, Divisions, Start Angle, Tilt Angle, Points/IN^2 and Target -Clicking on the family name will enable the tab to edit the settings. -To enable or disable a family, simply check or uncheck the circle next to the family name. -Starting positions can be set for both the initial and tilt axis by moving the slider bar arrow. -The start axis has the full 360 rotation and tilt axis is bounded to -35 to 45 degrees. -Use the top slider bars to visually set the starting and tilt positions. (This will update the settings for the scan family)

-Select the scan settings for each tab and check the tabs you want to have scan. If the setting for a tab have been adjusted, but the tab is not checked it will not scan.





-All MultiDrive scans are to be in MACRO mode. -Select a ROI for your model to prevent the MultiDrive from being scanned in for certain tilt angles. -If additional scans are needed, enter scan panel and position the model by using different starting and tilt angles to capture additional scans. -If you physically adjust the part, then a 3 pin alignment will be needed to align. -When finished, trim unnecessary data and "Fuse" or "Volume Merge" the model for export: ->

>Troubleshooting

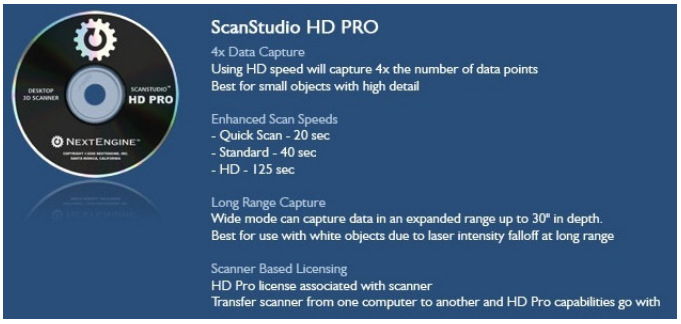
b>Switching between AutoDrive and MultiDrive - Simply plug in an AutoDrive to display the proper UI. - When reattaching the MultiDrive, make sure to recalibrate as needed. - When more than 5 Scan families are required, then just click on scan to enter the scan panel, and you can add 5 more new sessions. These scans should auto align to the previous scans assuming all the movement and rotations were done by the turntable. If they don't auto-align , just drag the scans into the green and refine (no pins required) - Force Calibration. If your scans are not coming in aligned, you may need to run a force calibration. You can do this from the drop down menu , Align, then go down to Calibrate MultiDrive

>Dental

Dental Cast Workflow with MultiDrive Download: Click Here -This file and other workflows are available under Help > What's New > Workflow Documents on the left-hand side INDEX

4.2 QA-Scan

4.3 HD PRO



>To purchase the HD PRO license visit the buy page here. This software requires an HD capable scanner. For more information click the ASK button below.

4.4 CAD Tools

>Intro

To purchase the CAD TOOLS license visit the buy page here. For more information click the ASK button below.

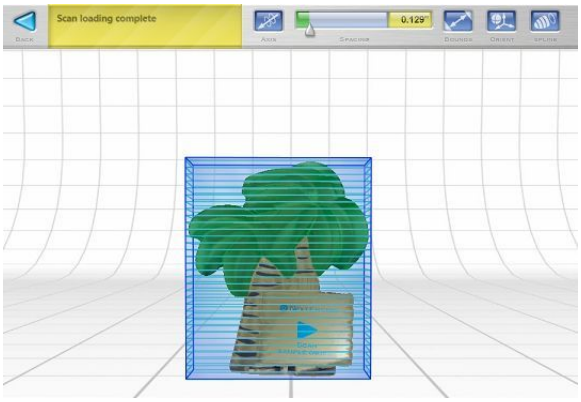
>Spline

The Spline Tool can be used to extract boundary curves from your mesh data. - Ensure that the Fused mesh data that you wish to convert to splines is in the green section of the bottom view bar.

Select CAD

Select SPLINE

- ScanStudio will automatically calculate and display a bounding box which can be used to define the plane cuts to use to extract the boundary splines:

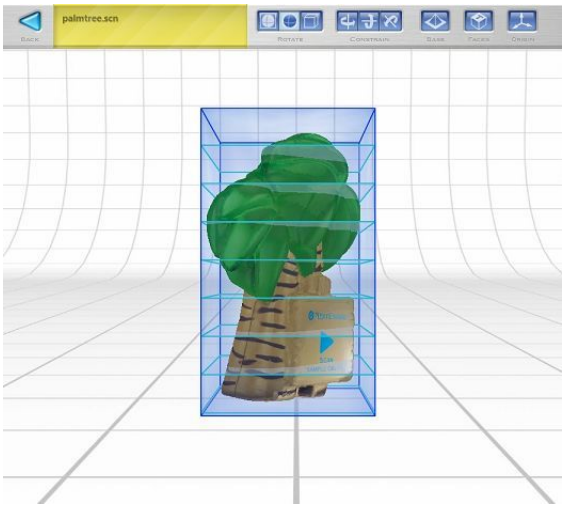


AXIS button to change which

SPACING slider to control how

The BOUNDS tool to control

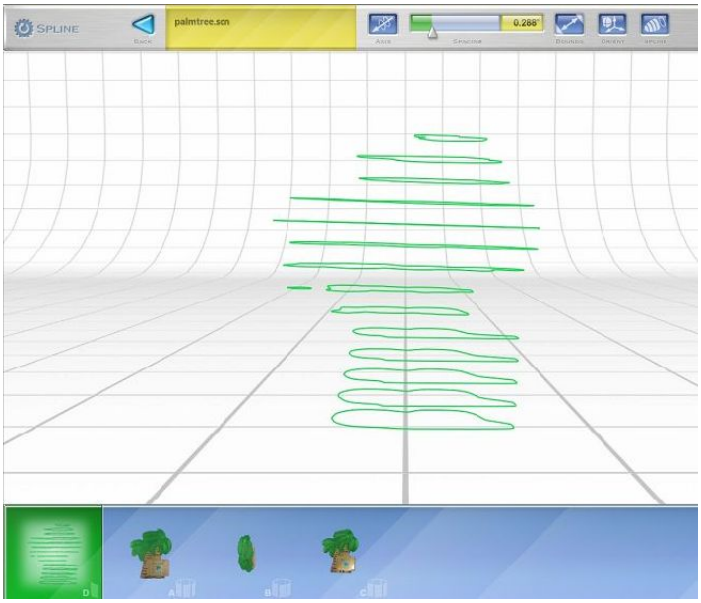
ORIENT tool to position the



Use the Rotate tools to move either the mesh data, the bounding box, or both. The Constrain tools can be used to limit rotation along a particular axis. The Base tool can be used to define one of the planes in the bounding box by placing pins on the mesh

Click SPLINE to complete

The set of splines created will be added to a common "Spline" family off of the root of the model.



>AutoSurface

The AutoSurface Tool will automatically create a patch network of surfaes from the mesh model. This can be easily exported as an IGES or STEP file. - Ensure that you have merged results in the green section of the bottom view bar:

Select CAD

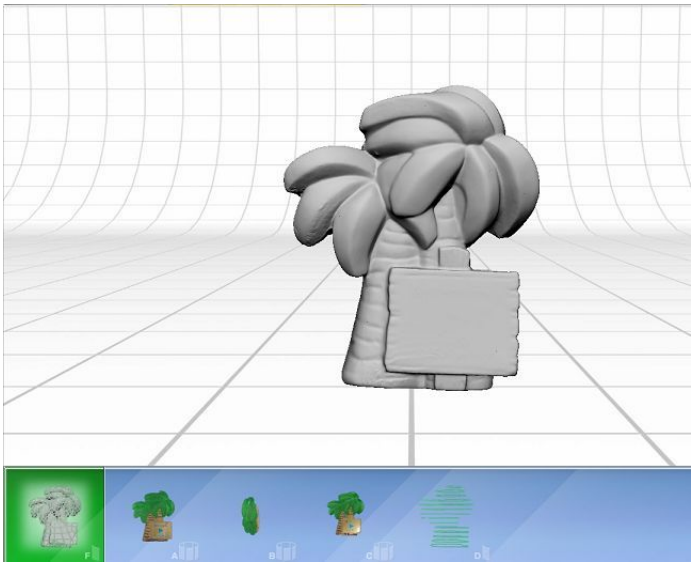
Select

Choose the Number of

More surfaces may result in more accuracy. If the resulting surfaces have missing data then try increasing the number of surfaces.

Click SURFACE

-The resulting surfaces are stored in the SCN file and displayed

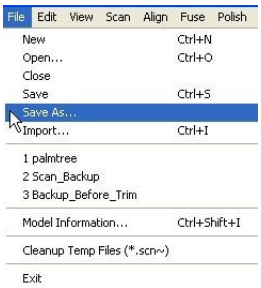


>Output

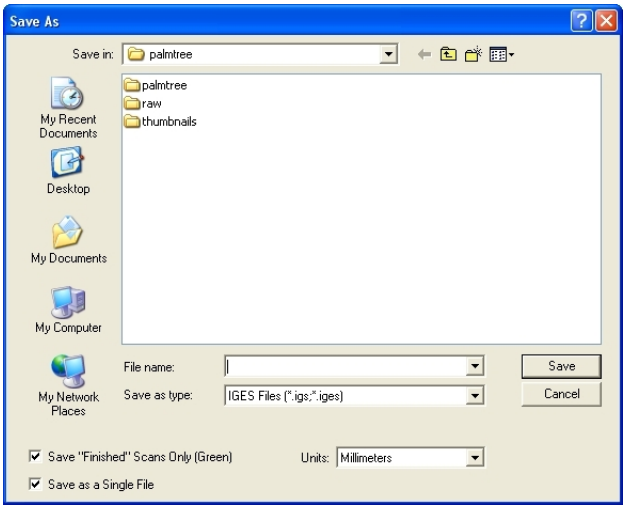
- Exporting IGES and STEP files is only available with ScanStudio CAD TOOLS. - For more information about upgrading to CadTools please contact info@nextengine.com. - Mesh data cannot be exported as an IGES/STEP file. - Insure the model contains either splines or autosurfaces in the green section of the toolbar

Select Output

Select



Alternate



Name your scan, choose the ouput

4.5 ProCare

To purchase the ScanStudio HD ProCare visit the buy page here. For more information click the ASK button below.

Chapter 5

RapidWorks

5.1 Getting Started

5.2 Mesh Cleanup and Autosurfacing

5.3 Solid Modeling

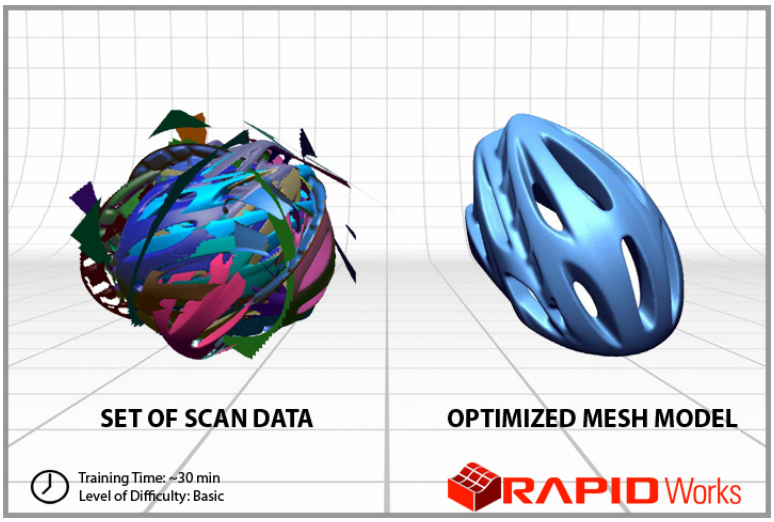
5.4 Surface Modeling

5.5 Hybrid Modeling

5.6 RapidWorks 3.5.0 Tutorials

>Mesh Optimization

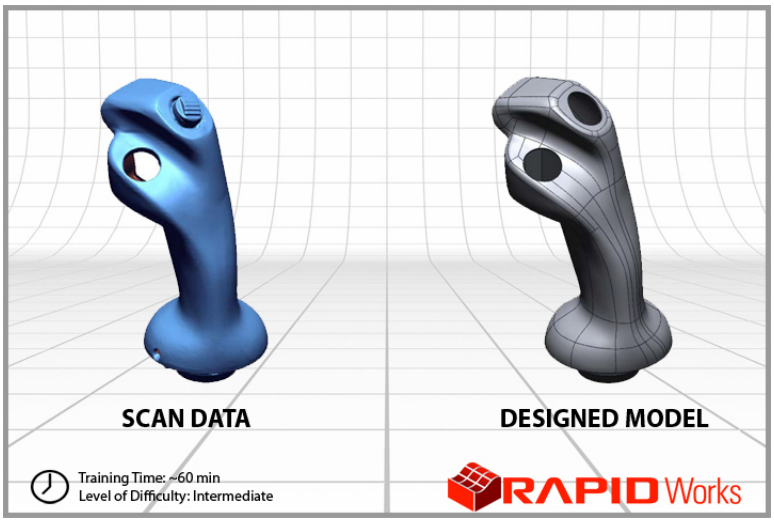
>Mesh Optimization Tutorial This tutorial covers the workflow in creating a watertight mesh model using powerful mesh modeling tools. You will learn about the mesh modeling methods that can create a watertight mesh model from a set of 3D scan data.



>Important Note: This tutorial is designed to be done using the Expert Mode UI. To learn how to change RapidWorks to the Expert Mode UI, download the instruction guide here: Download

>Auto Surfacing

>Auto Surfacing Tutorial This tutorial covers the workflow on how to completely design a freeform part using powerful surface modeling methods. You will learn surface modeling methods that can be used to create a freeform body from 3D scan data.

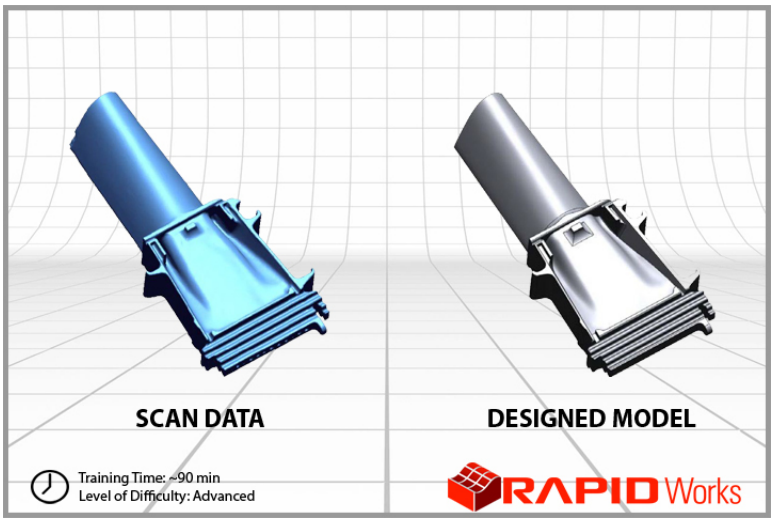


b>Important Note: This tutorial is designed to be done using the Expert Mode UI. To learn how to change RapidWorks to the Expert Mode UI, download the instruction guide here: Download

>Hybrid Design

>Hybrid Modeling Tutorial This tutorial covers the workflow on how to

completely design an industrial part by using powerful solid modeling methods. You will learn modeling methods that can be used to create a solid body from 3D scan data. You will also learn how to transfer the fully designed model to a dedicated CAD program.



b>Important Note: This tutorial is designed to be done using the Expert Mode UI. To learn how to change RapidWorks to the Expert Mode UI, download the instruction guide here: Download

5.7 ProCare

b>RapidWorks ProCare Pricing - Within 90 days of RapidWorks purchase =
$995 - 90 days - 1 year = $1490 - 1 year - 2 years =
$1985 - 2 years - 3 years = $2480 - After 3 years =
$2975 Rapidworks ProCare can be purchased at
https://www.nextengine.com/store

Chapter 6

QA Scan

Chapter 7

QA-Scan

Chapter 8

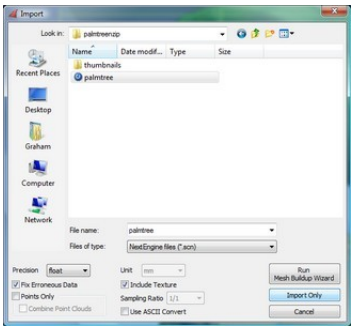
Other 3D Programs

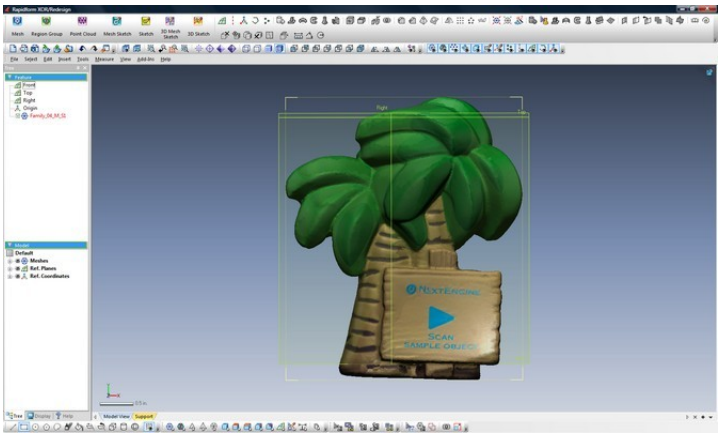
8.1 SolidWorks

b>-Other Solidworks Versions (Standard/Professional) If you do not have the Premium version and the Scanto3D Add-In you can use ScanStudio CAD TOOLS -> to create surfaces or spines from your scan data, and then export the surfaces or splines as IGES or STEP. You can also use RapidWorks -> , which allows the user to recreate a Solid Model from the Scan data, then export a fully featured part into SolidWorks native SLDPRT file format.

8.2 RapidForm XO

b>Rapidform XOR2 -Go to Insert - Import and under the dropdown for file type select NextEngine files (*.scn):





8.3 Geomagic

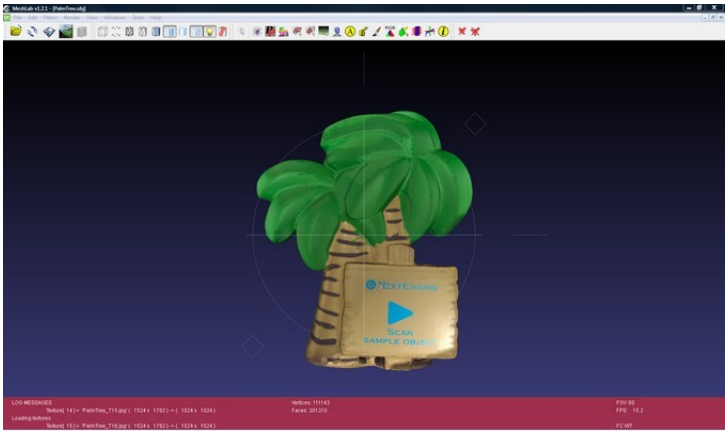
>Geomagic Studio "Transform 3D Scan Data into Accurate Digital Models. Designed to handle the most demanding reverse engineering, product design and rapid prototyping challenges, Geomagic Studio transforms 3D scan data and polygon meshes into accurate 3D digital models. A perfect complement to the CAD, CAE and CAM tools you already own, Studio outputs industry standard formats including STL, IGES, STEP and native CAD files."

8.4 ArtCAM

http://www.artcam.com/ Here is a great new Forum from users combining the NextEngine 3D Scanner and ArtCAM: http://forum.artcam.com/viewtopic.php?f=5&t=8143

8.5 Mesh Lab

http://meshlab.sourceforge.net/ "MeshLab is an open source, portable, and extensible system for the processing and editing of unstructured 3D triangular meshes. The system is aimed to help the processing of the typical not-so-small unstructured models arising in 3D scanning, providing a set of tools for editing, cleaning, healing, inspecting, rendering and converting this kind of meshes." Imports all mesh files; STL, OBJ, PLY, XYZ, VRML -
>



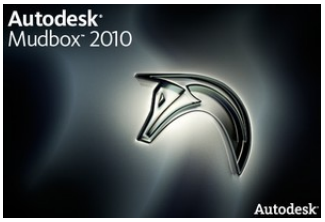
8.6 Magics

http://www.materialise.com/materialise/view/en/2408555-Magics.html - Software for the Rapid Prototyping and Manufacturing Professional. - Import VRML, STEP and IGES files from ScanStudio HD and ScanStudio CAD Tools into Magics.

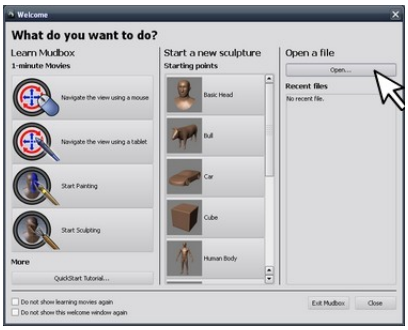
8.7 Maya

http://usa.autodesk.com/adsk/servlet/pc/index?siteID=123112&id=13577897

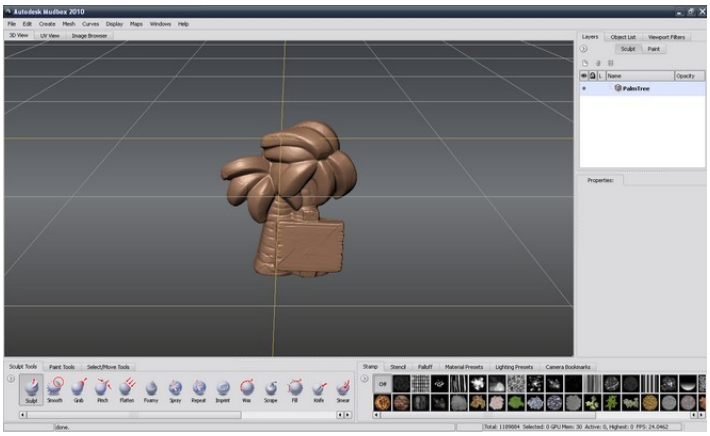
8.8 MudBox



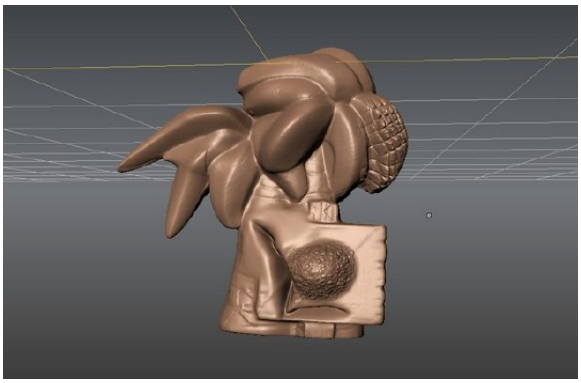
b>-Select 'Open a File...'



>-OBJ File Loaded into Mudbox

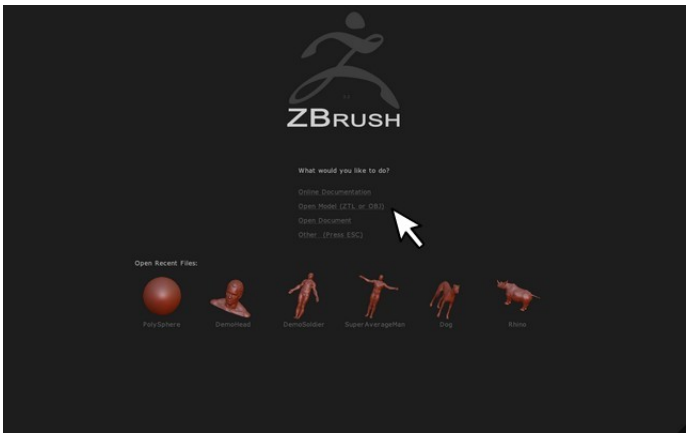


>-Using the sculpting tools you can quickly redesign your model

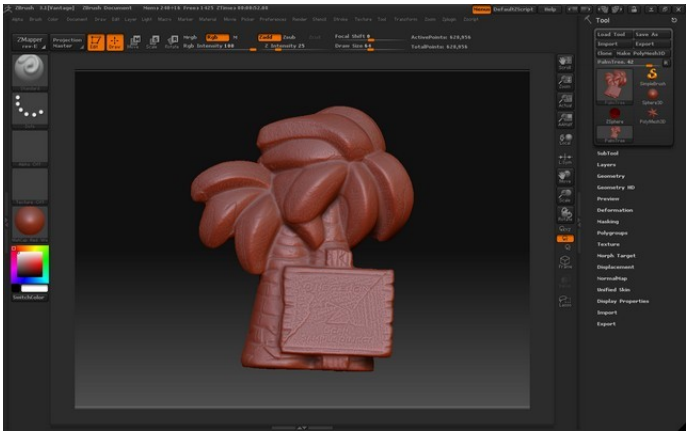


8.9 ZBrush

>To Load your scan model in ZBrush you will need to export your model as a STL or OBJ file -> After opening Software Select Open Model (STL or OBJ)



Select the STL/OBJ file from the directory and the model will load in the app:

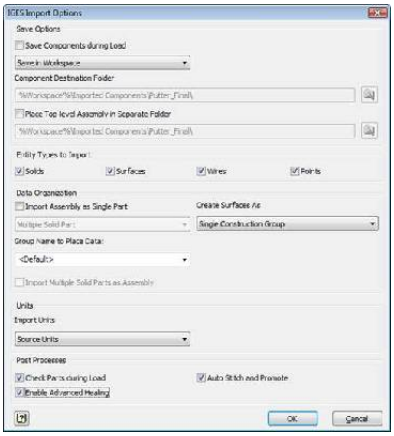


8.10 Blender

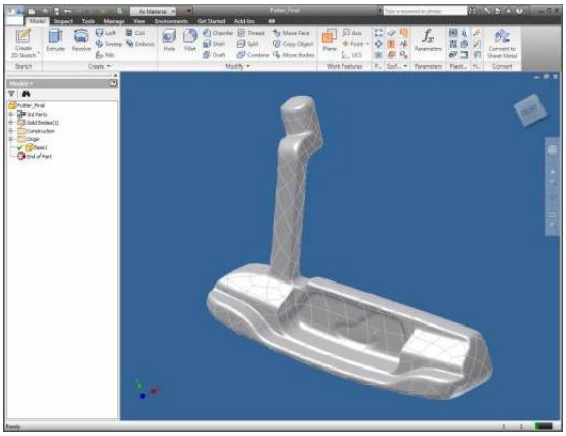
>http://www.blender.org/download/get-blender/

8.11 AutoDesk

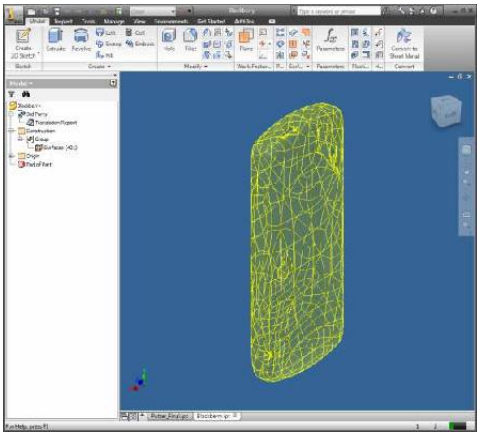
You can now import IGS files by installing Parasolid Plug-In on the Autodesk Labs site. Here is the link : http://labs.autodesk.com/utilities/translator_add-ins_for_autodesk_/ You can access the translator using the standard Open command in Inventor. You can choose various file types to open and in this case I chose IGES as the file type. Once a file is selected you can choose the Options button on the Open dialog. For IGES files youll get the dialog below.



If it is water tight it will result in a solid as seen below.



If the objects have holes they will import in as surfaces. The result ended up in Inventors Construction environment with the idea that you can use the tools there to clean up the model and import it into Inventors parameter environment as either a solid or as a surface. The picture below shows the Blackberry in the construction environment.



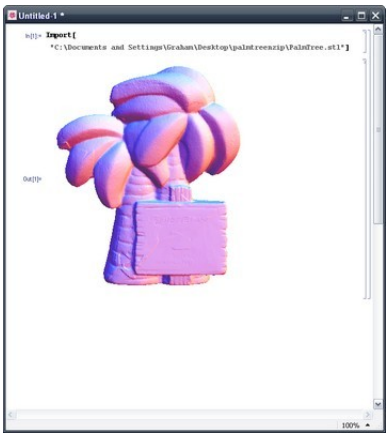
8.12 Rhino

>http://download.mcneel.com/download.asp?id=STLRepair

8.13 Mathematica

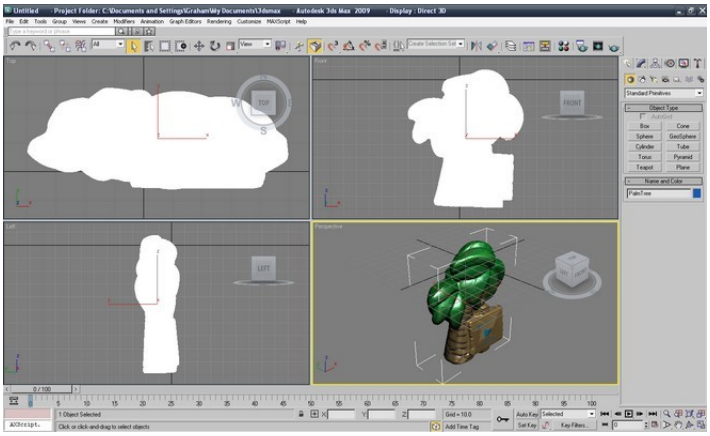
Wolfram Mathematica 7
COMPUTE DEVELOP DEPLOY

b>STL model loaded as 3D Graphic in Mathematica



8.14 3D Studio Max

>OBJ Scan Model Loaded in 3D Studio Max



Chapter 9

Reference

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9.2 Customer Support

9.2.1 RapidWorks Site License

The terms of RapidWorks EDU site licenses are as follows:
Cost: $10K 20 licenses Site license
applies to individual school Departments (i.e. ME, Architecture, Archeology, etc). Must purchase RapidWorks ProCare ($995), no more than 2 support contacts. Pre-Pay required Currently, this is not available at nextengine.com/store, but quotes can be generated with the site license included.

9.2.2 Duplicate Scanner Purchase No Refund Policy

When a customer purchases a product and then returns within the 30 to 45 day period, if they choose to repurchase the same product that was returned, they are not eligible for the 30 day trial period. When such orders occur, the customer will be contated to determine the reason for the repurchase, and informed that they are not eligible for the 30 day money back guarantee period.

9.2.3 Scanner Repairs

>In Warranty

PartGripper Repair in Warranty: If found to be broken by AE, send replacement.

>Out Of Warranty

b>SD Scanners Repairs: No longer supported for repair, we do not have parts with which to repair them.

>Warranty Support Questions

>8. Was the scanner opened and were any self repairs attempted (this is mostly for out of warranty repairs)? The last three questions in bold are questions that are specific to out of warranty repairs and will help us make sure that we are able to repair the damage within the $395 flat fee. The first five questions are already part of what we are doing today, so please continue to handle repairs as normal, but ask those three additional questions in the end for questionable cases. A 'Warranty Void' user has been created in the NextWiki, please mark any user that has voided their warranty as a review item to flag their account.

9.2.4 Scanner Returns

>Stopping Returns Documentation 1. Understand the customers needs and use any utility possible to help them: A. If speed is the issue, you can offer trials of HD PRO and suggestions on how to improve their work-flow. B. If data quality is the problem, get their data and make all possible improvements. C. If the end goal seems impossible from the software we offer, research other software that may help them. 2. Show we are committed to the customer getting a positive result: A. Engaging the customer and going above and beyond resonates well with them. B. Extension of the 30 days is another sign of good faith and at times can be the difference in a return (ask me before offering this). C. Offer to have them send in a part, we'll scan it for them and provide the work-flow on how it was done. 3. This is a team effort: A. Passing a potential return to another AE provides the customer another voice that may help him/her understand better. B. Feel free to consult any or all of the AE's with return questions or suggestions on possible solutions. 4. Use the phone or GoTo: A. If the customer is struggling with chat or email, call them or set up a GoTo. 5. Let me know if a return is imminent: A. Once you have exasperated all other options, make sure Michael is aware prior to sending out the email to "returns@nextengine.com". 6. Remember our updated return processing policies: A. The returns email should contain ALL pertinent info: User's Name, Email, Order #, Serial #, Address, Reason for return, and any other notable information. B. Once return email has been sent, let the customer know that they need to package their scanner immediately and they are to ship the scanner as soon as they receive their labels. C. After the returns email is sent, Scott will be disabling the users software so they cannot use the scanner any longer. Make sure to: 1. Find out what their application is and what software they are using. What is their end goal? 2. What are their complaints / problems with the scanner? 3. Get a copy of their scan data to work with. 4. Get them on the phone / Go To, show commitment to getting them quality results.

9.2.5 HD Exchange

Additional Information: http://www.nextengine.com/products/hd-technology#1 http://www.nextengine.com/products/hd-technology#2 http://www.nextengine.com/products/hd-technology#3

9.2.6 Second Hand Scanners

>Policy

>Second Hand Scanner Policy * New owner does not have to pay $295 to use the product and have software. * User can pay $295 (ScanStudio HD ProCare) if they would like support, warranty and software updates. * To purchase ScanStudio HD ProCare, the customer must call front desk to complete the order. 1-310-883-1888. * When the purchase of ScanStudio HD Pro Care is made, place as review item under Wiki User "Resold Scanners". Make sure to indicate both the original owner, and the new owner's names for future reference and transfer the licenses accordingly. * If it is an SD Scanner, note that it cannot be repaired, we no longer have parts. * Promo Code for Resold Scanners would allow the customer to complete the order without our assistance. (Currently being considered, but not yet implemented.)

>Sample Response

>Sample Second Hand Scanner Response For all second hand scanner purchases a new account will be required for setup. This is done through the purchase of ScanStudio HD ProCare ($295). This will then provide your very own account for the NextEngine 3D scanner and also includes: * Access to Desktop 3D scanner support, tutorials and video * Live chat support from 7am - 6pm PST through our NextWiki * Software updates for ScanStudioHD For SD scanner users, it will include the same features above, except it will provide access to the ScanStudio CORE software. To get started, please provide us with the following information * Name * Email * Phone * Scanner serial number Thank you, I look forward to hearing back from you.

9.2.7 Product Pricing & Shipping Rates

>Pricing

RapidWorks ProCare Pricing (Renewal after first 3 years of ProCare expires): Expiration date - 90 days = $995 90 days - 1 year = $1,490 1 year - 2 years = $1,985 2 years - 3 years = $2,480 After 3 years: $2975

>Domestic Shipping Rates

>United States Scanner: Ground: $23 Second-Day: $43 Next-Day: $63 AutoDrive: Ground: $12 Second-Day: $22 Next-Day: $32 MultiDrive: Ground: $8 Second-Day: $18 Next-Day: $28 Curriculum: Ground: $7 Second-Day: $12 Next-Day: $26

>International Shipping Rates

NOTE: 1. AutoDrive Shipping done by Scott on case-by-case basis. 2. We do not split shipments. *Albania, Belarus, Boznia-Herzegovima, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Macedonia, Moldova, Montenegro, Poland, Romania, Serbia, Slovakia, Slovenia, Ukraine.

>Countries Not Serviced

>Countries not serviced by FedEx: Andorra Burma Central African Republic Comoros Cuba Equatorial Guinea - GQ Falklands Guinea Bissau Iran Johnston Island Kiribati Myanmar Nauru Niue North Korea Sao Tome& Principe St Helena (S. Atlantic) Sierra Leone Solomon Islands Somalia Sudan Tajikistan Tokelau Island Turkmenistan, Republic of Tuvalu Wake Islands Russia Libya

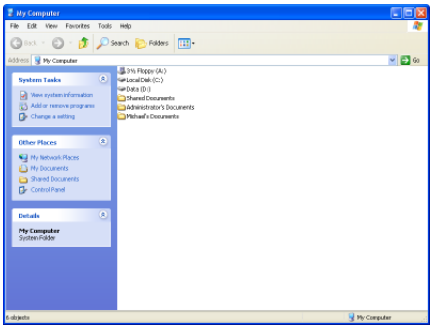
9.2.8 FTP Protocol

>FTP Login

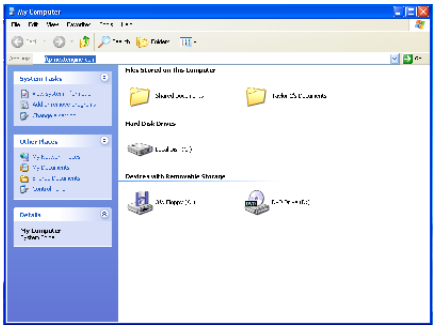
>All Other FTPs Username: sbsamples Password: statue818 Username: sarahb Password: user Username: sarah Password: snickers Username: brad Password: wolverines Username: andres Password: porsche Username: andrest Password: porsche Username: nick Password: baseball Username: dang Password: casper Username: rapidworks Password: nextengine Username: inus Password: re4ne Username: taylor Password: corvette Username: builds Password: scanstudio2

>Ways to Access

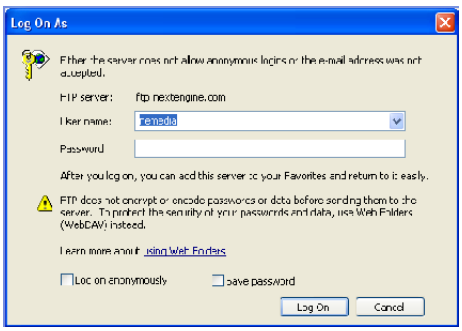
1. Download Filezilla (http://filezilla-project.org/) to upload / download files. 2. Use Web Browser to go to ftp.nextengine.com. 3. Use Folder Viewing Window on computer: Open My Computer or any folder viewing window:



In the Address bar, type in: ftp.nextengine.com:



Press enter and a window should come up asking for the username and password:



Log on to access the FTP site

9.2.9 Wiki Account Policies

Internal (Brad, Dan, Sales): Create Prospect account and create action item or notification to delete after trial is over. External (Resellers, Customers): Refer them back to the owner, reseller or supplier for login information. Multiple Scanners: Create new account for scanner only if multiple scanners purchased.

9.2.10 Common Support Instructions

>SS HD

Full Reinstall: 1. Go to support.nextengine.com to Downloads-> ScanStudio HD. Download 32 or 64 bit scanstudio HD 1.3.2 depending on whether you have a 32 or 64 bit OS. Save to your desktop. 2. Shut down ScanStudio. 3. Run the uninstaller in the Start -> Programs -> NextEngine folder. 4. Delete the following folders: C:\Program Data\NextEngine (for Vista/Win 7) C:\Documents and Settings\All Users\Application Data\NextEngine (for XP) C:\Program Files\NextEngine C:\Program Files (x86)\NextEngine note: make sure "show hidden folders" is on for the Program Data folder to show up. 5. (For Vista or Win 7) Go to Control Panel-> User Accounts. In the User Accounts, there should be a window with a small blue link to change/turn off the User Account Controls (UAC). Make sure the slider is set down to the lowest level. 6. Restart your computer. Make sure antivirus/firewall are down temporarily. 7. Run the installer from your desktop for the ScanStudio HD 1.3.2 you downloaded with scanner unplugged. Make sure you install on the computer C: hard drive.

>SS Core

Full Reinstall (XP / Vista) 1. Uninstall any versions of ScanStudio. 2. Delete the following folders: C:\Documents and Settings\All Users\Application Data\NextEngine (for XP) C:\ProgramData\NextEngine (for vista) C:\Program Files\NextEngine If those folders are not visible, make sure your folder tools is set to "Show hidden folders". 3. Go to www.nextengine.com/start and login. 4. There should be a link that says "To download software for your SD scanner, click here". Click this link, download ScanStudio 1.7.3 and install it without the scanner connected. 5. After installation, plug scanner and verify that software and scanner work effectively. Full Reinstall (Windows 7 64 bit ONLY) 1. Make sure you have the installer for ScanStudio 1.7.3 on your desktop. 2. Shut down ScanStudio. 3. Run the uninstaller in the Start -> Programs -> NextEngine folder for all versions that are installed. 4. Delete the following folders: C:\Program Data\NextEngine (for Vista/Win 7) C:\Documents and Settings\All Users\Application Data\NextEngine (for XP) C:\Program Files\NextEngine C:\Program Files (x86)\NextEngine note: make sure "show hidden folders" is on for the Program Data folder to show up. 5. (For Vista or Win 7) Go to Control Panel-> User Accounts. In the User Accounts, there should be a window with a small blue link to Change/turn off the User Account Controls (UAC). Make sure the slider is set down to the lowest level. 6. Restart

your computer. Make sure antivirus/firewall are off temporarily.
7. Run the installer from your desktop for the ScanStudio 1.7.3 with scanner unplugged. Make sure you install in the computer's C: hard drive as an administrator. You can right click on the installer and select "Run as administrator". 8. Afterwards, use the driver installer on the support.nextengine.com website to install the new win drivers. It is in the downloads section. Then, place the previous driver I posted/attached here and place it in the locations: C:\Program Files (x86)\NextEngine\ScanStudio\Driver C:\Program Files (x86)\NextEngine\ScanStudio\dll (attach driver wdapi901.dll)

>Login Info

Need to Match two out of three of the following in order to disclose login information: Name, Email, Company Order Number Scanner Serial Number Be sure to check in both the Order System and the Wiki.

>MultiDrive Calibration

How to reset the MultiDrive calibration: 1. Close ScanStudioHD 2. Go to C:\ProgramData\NextEngine\ScanStudioHD\user.ini 3. Open User.ini file. 3. Delete everything under "Secret" (line 4 or 6) 4. Save user.ini file and close 5. Re-do calibration in ScanStudio.

>Text Cut Off

Win 7/Vista: 1. Go to Control Panel > Appearance and Personalization > Display 2. Make sure that display / magnification is set to 100% 3. Save changes and re-boot ScanStudio XP: 1. Go to Control Panel > Display. This will bring up the Display Properties 2. In Settings Tab, click on 'Advanced' 3. Make sure DPI is set to Normal Size (96dpii) and apply changes. 4. Restart ScanStudio.

>3GB Switch

*For users who are running a x32 OS and more then 2GB of Memory http://www.microsoft.com/whdc/system/platform/server/PAE/PAEmem.mspx (Microsoft Documentation)
http://dwf.blogs.com/beyond_the_paper/2009/04/enabling-3gb-switch-on-windows-vista.html (Blog posting w/ more detail)

9.2.11 QA Scan Licensing Statement

>Multiple Install Inquiry Response Per our QA-Scan User License Agreement, the activation key should only be used by the account holder and is not to be distributed outside the initial purchasing company. QA-Scan can be activated on your office computers if more than one install is necessary. Installs must be kept to a minimum as we will be monitoring each install and account activity.

9.2.12 Top Bar Crash Support Procedure

Steps to Handle Top Bar Crash Cases: 1. Get LOG file for system specs 2. Add to Top Bar Crash review action item 3. Suggest updating graphics card drivers 4. Screenshot of crash 5. Provide workaround for running in compatibility mode -Close ScanStudioHD - Right click ScanStudioHD shortcut and go to Properties -Click on the Compatibility tab -Check box "Run this program in compatibility mode for" -Set to Vista SP2 -Apply and run ScanStudioHD 6. Notify them of current bug: -Not a common bug -Specific to Windows 7 64-bit computers with Xeon or Core i7 processors with CAD graphics card (also have seen it occur on higher end graphics cards) -Running in compatibility mode is only workaround available, but results in slower trim times - Developers are working on this issue (do not specify timeline) 7. Recommend alternative graphics cards -ATI Radeon HD 4000 series -GeForce GTS 200, 300 400 series 8. Cards we have seen hit this error -NVDIA Quadro series -NVIDIA GTX series -NVIDIA GT 200M and 300M series -ATI FirePro series -ATI RadeonHD 5000 and 6000 series -SLI/Crossfire setup

9.2.13 Shipping Templates

>Repair or Return

Scanner Return after Repair In / Out Warranty Your scanner was repaired, retested, and sent back to you today via FedEx, tracking #. We once again apologize for the inconvenience and please feel free to contact us if you have any questions. Best regards,

>Domestic

b>Domestic Scanner Repair Shipping Instructions You should receive an email shortly from EmailLabel@fedex.com which includes return labels and instructions to send your non-working scanner back to NextEngine. (If you do not receive an email please check your junk\spam folder). Once you receive the return labels, please pack only the scanner in the original packaging and affix the label to the outside of the box. You may then either call FedEx to schedule a pickup at 1 800 463-3339 or find the nearest drop off location at http://fedex.com/Dropoff/start. When we receive your scanner we will attempt to rectify the problems you incurred or issue a working replacement to you. We apologize for the inconvenience and please don't hesitate to contact us if you have any questions. Thanks and best regards,

>International

>IntÃƒÆ’Ã‚Æ’Ã‚Æ’Ã‚â€šÃ‚Æ’Ã‚Æ’Ã‚â€šÃ‚Æ’Ã‚Æ’Ã‚Æ’Ã‚â€šÃ‚â€šÃ‚Æ’Ã‚â€šÃ‚Æ’Ã‚Æ’Ã‚â€šÃ‚Æ’Ã‚Æ’Ã‚â€šÃ‚â€šÃ‚Æ’Ã‚â€šÃ‚Æ’Ã‚Æ’Ã‚â€šÃ‚Æ’Ã‚Æ’Ã‚â€šÃ

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Ãƒâ€šÃ‚â€šÃƒÆ’Ã‚â€šÃƒâ€šÃ‚â„¢l Scanner Return Shipping Instructions A package with return labels and instructions to send your scanner back to NextEngine was sent to you today via FedEx, tracking #. Once you receive the return labels, please pack the scanner in the original packaging and affix the label to the outside of the box. You may then either call FedEx to schedule a pickup or find the nearest drop off location. When we receive the scanner your refund will be processed and please don't hesitate to contact us if you have any questions. Thanks and best regards,

>SD to HD Scanner Exchange

>SD / HD Scanner Exchange Thank you for your interest in the SD\HD exchange program. To initiate the process, please send your SD scanner to Returns Manager 401 Wilshire Blvd. 9th Floor RMA# Santa Monica, CA 90401 USA Upon return of the SD scanner, your new HD scanner will be shipped. You'll receive an email with the tracking number and if you have any questions please feel free to contact us at any time. Thanks and best regards,

9.2.14 Accounting Policies

b>Tax ID Information Forward all Tax ID inquiries to Jessica to review with Kathy and determine if it is appropriate to disclose the ID.

9.2.15 Stolen Scanners

>Case Order #
Scanner Serial # Email Canada
128236 01 09
10 62022 karoparisyan101@gmail.com
Canada
128614 01 09 10 62319
drogba11aa@gmail.com
Canada 132250
01 09 10 67698
KINMAILKIN@YAHOO.COM
Canada 132652
01 09 10 67555
MARCBREWER23@YAHOO.COM Canada
132718 01
09 10 68369
CANADA007CANADA@GMAIL.COM Canada
132970 01 09 10
68204 CANADA007CANADA@GMAIL.COM
Canada 133066
01 09 10 66796
GREIGJULES@YAHOO.COM
Canada 133096
01 09 10 68600 kartel@live.ca

Canada 133084
01 09 10 64541
COPERATIONXXL@GMAIL.COM Canada
133420 01
09 10 67280
KALIDORSASA@YAHOO.COM
Canada 133456
01 09 10 65190
GAME5GAME@GMAIL.COM
Canada 133468
01 09 10 65801
stone66cold@yahoo.com
Canada 133486
01 09 10 64618 jackds@live.ca
US 4626535
01 12 10 18120
mike.shipley2012@gmail.com US
4619165 01 12 10 18219
andy.henderson@consultant.com US
4626975 01 12 10 16723
phyllis.eckersley@mail.com US
4627503 03 13 01
15562 phyllis.eckersley@mail.com US

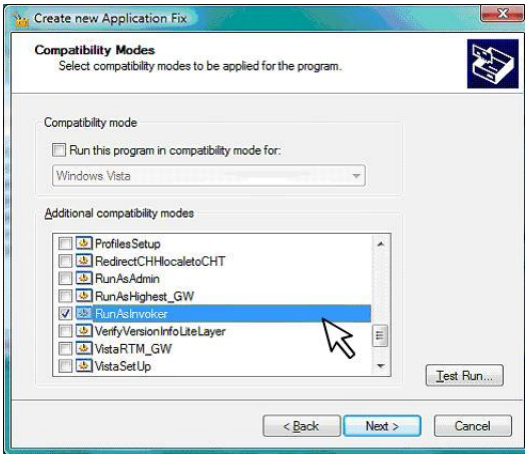
4635170 01
12 10 19979 chris.clouet@aol.com

9.2.15.1

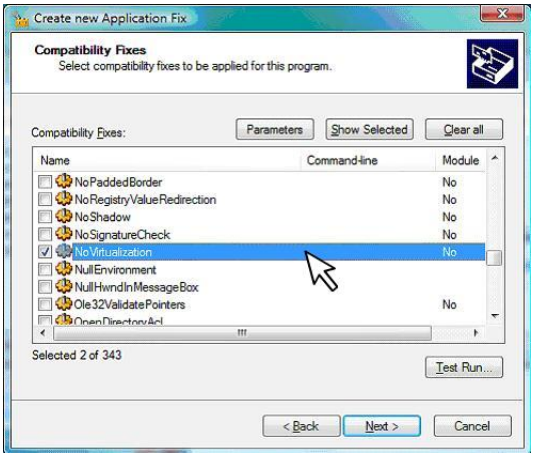
9.2.16 RapidWorks Workarounds

>Non Admin Account Workaround

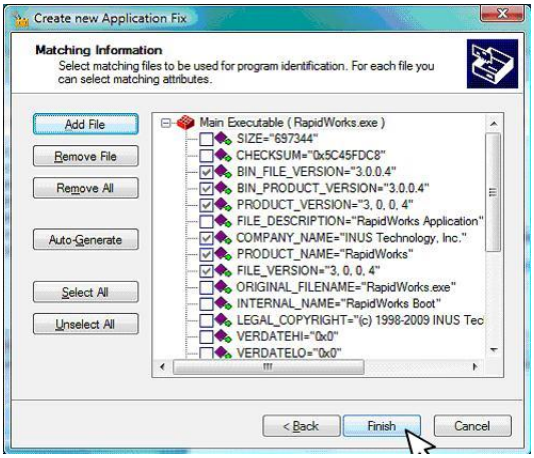
Instructions: Install Microsoft Application Compatibility Toolkit. RunÃƒÆ'Ã‚Æ'Ã‚ÃƒÆ'Ã‚Æ'Ã‚ÃƒÆ'Ã‚Æ'Ã‚



Select 'No Virtualization' and click 'Next':



Leave defaults checked and click 'Finish':



Click 'Save', give database a name and then specify filename (such as RapidWorksAdminFix.sbd) Open command prompt as administrator, change directory to location of file saved above and enter the command 'sdbinst.exe RapidWorksAdminFix.sbd'. RapidWorks should not launch without administrative credentials.

>Left Docking Workaround

To clear out all the settings and return everything to default use the following process: 1. Close RapidWorks 2. Go to C:\Program Files\INUS Technology\RapidWorks 3. Run RegistryClean.bat

9.3 Glossary

>Glossary of NextEngine Terms Coming Soon

9.4 Links

Other Links Coming Soon