SureSmile®
3Shape TRIOS® Scanners

TRIOS® 3  
TRIOS® Color  
TRIOS® Standard
SureSmile® has its headquarters in Richardson, Texas, with offices in Berlin, Germany and Chatswood, Australia. For general information about SureSmile®, visit the SureSmile® website at www.SureSmile.com.

Contact us for support

To contact us, please call one of the phone numbers listed below, or email us at customercare@SureSmile.com

<table>
<thead>
<tr>
<th>Region</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States &amp; Canada</td>
<td>1 888 672 6387 or 1 972 728 5902</td>
</tr>
<tr>
<td>Europe, Australia, New Zealand, Japan &amp; South Korea</td>
<td>+800 6655 1234</td>
</tr>
<tr>
<td></td>
<td>Note: We are currently rolling out this number on a country-by-country basis. If not yet available in your country, you can still call us by using our All other countries toll number below.</td>
</tr>
<tr>
<td>All other countries</td>
<td>+1 972 728 5902</td>
</tr>
</tbody>
</table>

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About this Guide

This guide includes the protocol and procedures for using the 3shape TRIOS® for SureSmile treatment. Although informative for the doctor, the primary audience is the clinical assistant who will be performing TRIOS scans and entering SureSmile orders.

Any practice implementing the TRIOS system with SureSmile can use this document as a reference, including:

- New SureSmile practices planning to use the TRIOS scanner for all model types.
- Existing SureSmile practices using the orascanner who have decided to obtain a TRIOS scanner.
- Any SureSmile practice planning to use the TRIOS scanner to capture supplemental and update scans for their SureSmile-certified CBCT system.

Practices using CBCT must also refer to the applicable guide for the SureSmile protocol for CBCT scans. These documents are available in the SureSmile online help. To access this area,

- go to SureSmile via your web browser
- Click the ? icon and select Help Center
- Next, find the “Other Resources” section in the lower-right corner of the window and select “Useful Documents.”
- When this page opens, find the appropriate CBCT guide under the heading, “Scanning Protocols.”

Prerequisite Training

Prior to conducting the SureSmile training and launch:

- The practice should be trained in the proper use of the TRIOS scanner by a 3shape-certified clinical trainer.
- Scan technicians should have successfully performed at least 10 scans prior to scanning patients for SureSmile.
- If using CBCT, the practice should be trained in the safe and effective operation of CBCT equipment by a representative of the manufacturer.

SureSmile supports the following systems:

- TRIOS® Color
- TRIOS® standard
- TRIOS® 3

When purchasing the system, order the Ortho option to obtain the correct software (Ortho Analyzer). As a quick check to see if you have the right software, look at the tooth chart; the Ortho software uses the label “Normal” instead of “Restorations.”
Getting Started

Install Appropriate Software on the TRIOS Computer

Install software on the computer supplied with your TRIOS system so you can place orders with SureSmile using a patient data folder accessible to both programs. Install the appropriate SureSmile component for your configuration:

- If you are placing therapeutic model orders based primarily on CBCT data using the TRIOS for supplemental scans, install SureScan software.
- If you are placing therapeutic model orders based on intraoral data captured with your TRIOS, install a browser for SureSmile web-based software.

For more information on installing SureSmile software, refer to the Technical Requirements Guide.

Cybersecurity Guidelines

1. Keep your computer’s operating system up to date with patches and fixes.
2. Install and maintain an anti-virus program.
3. Install and maintain a firewall between your LAN and the internet.
4. Avoid installing browser add-ins or plug-ins.
5. Avoid downloading or installing software from unknown sites.
6. Create a hard to guess password by using at least 8 characters of mixed case letters, numbers, and symbols.
7. Avoid using common words or phrases.
8. Do not reuse the same password for any accounts.
9. Consider using a password program to manage passwords, such as KeePass or LastPass.
10. Do not display your password where others can see it.
11. Change your password periodically, every 60 to 90 days.
12. Logout or lock your workstation when leaving your desk.
13. Avoid clicking on links in email. Instead, go directly to the site and login using your user-id and password.

Set Hole Color

The TRIOS software allows you to choose the color-coding for holes in your scan data.

Since SureSmile requires 100% tooth coverage, it is helpful to choose a bright color (such as red) to catch your attention.

This setting is available in the options for Configure > Settings > Scan.

Contacts for service or software issues:

For issues with SureSmile orders, software, or TRIOS scanning with brackets for SureSmile, contact SureSmile Customer Care per the listing in the SureSmile online help.
To access SureSmile online help, go to SureSmile via your web browser, click the ? icon and select “Help Center.”
For issues with the TRIOS or exporting your STL files, please contact 3Shape customer support.
What is SureSmile?

SureSmile®

The SureSmile system is the first end-to-end solution that allows the orthodontist to apply 3D diagnostic imaging and computer-aided treatment planning to produce custom appliances. This results in greater control and efficiency for orthodontic care.

The SureSmile system is comprised of several technology components:

- Scanning technologies to produce a 3D model of the patient’s dentition that may be captured in an optical scan by our orascanner or a certified third party scanner; scans may also be captured by a certified CBCT system.
- SureSmile 3D software, which provides powerful visualization tools for precision diagnosis, treatment simulation and customized appliance design. The doctor can review the digital setup with this software and use it to communicate with patients and with the SureSmile Digital Lab.
- SureScan software primarily used for scan acquisition with the orascanner or CBCT data submission
- The SureSmile Digital Lab provides scan and setup processing to produce precise robotically bent custom archwires; or you may send the models to your lab to fabricate other appliances such as aligners.

IMPORTANT: SureSmile does not determine patient care. SureSmile provides therapeutics as directed by the doctor. The best possible results from the SureSmile process depend on the application of the doctor’s diagnostic and clinical judgment.
## Treatment Models

The table below lists the 3D models produced from scans to support SureSmile treatment. An optical scan may be captured by scanning a patient in-vivo (intraorally) or by scanning a plaster model; however, an in-vivo scan is required for wire therapy and strongly recommended when capturing any model used for appliance design.

The Digital Lab also produces a setup, which is a model of the doctor’s treatment plan based on the therapeutic model to fabricate custom appliances.

<table>
<thead>
<tr>
<th>Model</th>
<th>Purpose</th>
<th>Source Data</th>
</tr>
</thead>
</table>
| Diagnostic Model | Models the malocclusion, including individual teeth, to support: full dental examination using 3D diagnostic tools, a simulation of treatment options, and/or a model for appliance design. | - Optical scan In-vivo or plaster  
- CBCT In-vivo or plaster |
| Therapeutic Model | This scan is captured intraorally (or by in-vivo CBCT).

For bonded patients, models the patient’s current tooth anatomy and bracket positions. Captured any time after bonding in preparation for designing custom archwires or aligners

For unbonded patients, models the patient’s current tooth anatomy to support: full dental examination using 3D diagnostic tools, a simulation of treatment options, and/or a model for appliance design.

CBCT users have an additional scan option that accompanies a therapeutic scan:
- Supplemental scan – an intraoral scan primarily used to capture areas with restorations that cannot be accurately modeled from a CBCT scan. The two scans of the patient are combined to produce a complete model. | - Optical scan In-vivo*  
- CBCT In-vivo scan |
| Update Model (for bonded patients only) | This scan is taken intraorally by an optical scanner to capture areas that have changed since the last model was produced. Schedule an update scan when you need to order archwires, but bracket positions have changed or new teeth have erupted.

Note: If new teeth are captured, you must order a new setup prescription before ordering wires. | - Optical scan In-vivo* |
| Final Model | Models the patient’s final tooth positions with individual teeth to support a full Dental Examination using 3D diagnostic and quality grading tools, and/or a model for appliance design. | - Optical scan In-vivo or plaster  
- CBCT In-vivo or plaster |
Workflow for 3Shape TRIOS® Scanner

While you may use your TRIOS® scanner to scan either intraorally or scan a plaster model, the following scan types must be captured intraorally:

- Therapeutic scans – upper and lower arches (both arches are required even if the patient is receiving single arch treatment since both are needed to plan the occlusion)
- Update scans – arches or partial scans of arches to capture changes to tooth anatomy and/or brackets
- Supplemental scans – arches or partial scans of arches to capture supplemental data for CBCT scans

In addition, we strongly recommend capturing diagnostic and final scans intraorally when you plan to use them to design an appliance (aligners, for example).

After capturing the data, export .STL files and submit them to the SureSmile Digital Lab via an order.

The process for the therapeutic scan appointment, which contains the most steps since it must be captured intraorally and requires records, is depicted below.

Overview of the Therapeutic Scan Appointment

**SureSmile Advanced**

1. Prepare the patient
2. Scan
3. Take photos/x-rays
4. Reinsert wires
5. Export*
6. Submit SureSmile Order*

**SureSmile Ortho and SureSmile Aligner**

1. Prepare the patient
2. Scan
3. Take photos/x-rays
4. Export*
5. Submit SureSmile Order*

*The steps to attach the data to an order may be completed after the patient appointment. To avoid delays to treatment, make sure you submit orders by the end of the day.*
Taking Required 2D Records

The SureSmile system requires current photos and x-rays any time a scan is taken to optimize 3D modeling accuracy. Each photo is used for a specific purpose in Digital Lab modeling or setup processing. A standard photo set consists of:

- 3 extraoral photos: Extraoral photos indicate the natural jaw position and natural smile line. The Digital Lab uses this information when orienting the 3D model to the head position.
- 5 intraoral photos: The Digital Lab references intraoral photos to confirm tooth anatomy, check bite registration, and confirm bracket placement.

The following table illustrates the records required (or recommended) for each model type.

<table>
<thead>
<tr>
<th>Model Type</th>
<th>Required Photos</th>
<th>Required x-rays</th>
<th>Strongly Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnostic Model</td>
<td>-</td>
<td>-</td>
<td>Five standard intraoral + three facial + full mouth Panorex, ceph</td>
</tr>
<tr>
<td>Therapeutic Model</td>
<td>Five standard intraoral + three facial</td>
<td>Panorex + initial or current ceph* (optional for SureSmile Ortho and SureSmile Aligner)</td>
<td>Full Mouth + Overjet</td>
</tr>
<tr>
<td>Final Model</td>
<td>-</td>
<td>-</td>
<td>Five standard intraoral + three facial + full mouth Panorex, ceph</td>
</tr>
</tbody>
</table>

For best results, photos should be taken the same day as the scan. To meet minimum modeling requirements, they must be taken within 4 weeks before or 2 weeks after the scan.

* For the most accurate orientation of the model to the head position, the Digital Lab recommends importing a cephalometric radiograph that includes the Frankfort Plane. If the patient’s CBCT scan does not capture this anatomy, you can import the cephalometric radiograph from the initial records.

Import Records On Time

Import required photos/x-rays into the patient’s SureSmile record before the data is sent to SureSmile.

If the 3D data arrives at the Digital Lab without the required records, the order will be placed on “customer hold” and you will have to release the hold before work can begin in the Digital Lab.
Create a new image set

Create the image set using an integrated imaging system to automatically create the patient record and upload the set, or create the set manually in SureSmile via the web:

1. On the patient overview, click Image Sets and then select Add Image Set...
2. Enter the name for the image set.
3. If you need to change the date, type the date or click the calendar icon and select the date that the records were taken.
4. Click Save.

Upload multiple images

Next, upload photos and x-rays.

1. Click the Upload Files button for the image set.
2. Select multiple image files from the Open dialog, and click Open.
3. Drag and drop images into their correct position in the montage.
Standards for SureSmile Patients

NOTE: The following standards may not pertain to all SureSmile platforms. Brackets and wires will apply to SureSmile Advanced.

If the patient is not bonded, you will follow your usual scanning procedure for capturing a model of the patient’s teeth. SureSmile requires 100% tooth coverage in scans with 2mm of gingiva.

With your 3Shape TRIOS scanner, you will need to understand how to capture data for SureSmile patients who are bonded. The requirements are:

- 100% tooth coverage and interproximal areas
- 100% of bracket face/wings
- 70% of bracket mesial and distal profiles
- 2mm of gingiva

Because the SureSmile system will fill in holes with artificial data, these standards must be met to produce an accurate representation of the patient.

Prepare the Patient

1. If the patient is bonded, remove the patient’s wires in the arches to be scanned. If they are SureSmile archwires, keep track of their orientation to help you reinsert them correctly at the end of the appointment.

2. Remove calculus and any other material that will misrepresent the true shape of the teeth.
   
   *If the patient has turbos:*
   
   If the turbos are scheduled to be removed at this appointment, remove them before the scan. Otherwise, enter a note in the SureSmile order to describe the location of the turbos.

3. If you are using self-ligating brackets, close bracket doors.

NOTE: The manufacturer recommends using retractors to avoid capturing excessive tissue in scans—especially for anterior teeth (see the Scanner User Guide).
Scan Procedure - TRIOS®

Scanning Bonded Patients

When you receive your 3Shape TRIOS training, you will learn how to scan both arches and the bite. You will also learn how to use tools for erasing extra data that may have been captured (i.e., cheek, tongue). You must erase and rescan the area if anything is touching the teeth or bracket surfaces.

In general:

- Keep the scanner in motion. You will need more pictures to capture bonded patients so do not hover over an area or you may exceed recommended image counts.
- Try standing to capture difficult angles, such as when you are scanning the bite.
- Avoid capturing soft tissue (tongue, lips, cheeks) since soft tissue can move between pictures and confuse the system. This rule also applies to your fingers. If you accidentally capture any extraneous anatomy, use the trim function to remove this data.
- It is critical to follow the TRIOS scan strategy—especially the wiggling across the incisors as part of the first pass where you capture the occlusal surface. This view provides global accuracy to avoid warping of the 3D model.

Keep Areas Dry

Part of capturing a high quality scan, it is important to keep areas being scanned completely dry. Saliva and bubbles can distort the surface captured by the scanner. Be sure to have extra cotton rolls or gauze in addition to having a constant suction at hand.

Opaque Brackets

Before you begin scanning, you must apply an opaque material to brackets since they are difficult to capture with this scanning technology.

Use a material to provide a thin coating for the bracket without obscuring its detail. It is not necessary to coat the teeth.

The TRIOS training will not instruct you to use retractors; however, you may find retractors helpful when scanning bonded patients since the brackets must be coated with an opaque material.
To Capture Incisal Edges

- When capturing the buccal view, switch to a 45° angle as you approach the anterior teeth to capture some of the occlusal view as well. As needed, fill in buccal data to capture the area shadowed by the brackets.

To Capture Interproximal Areas

- When capturing the lingual view, angle the scanner down over the lingual of the anterior rather than turning parallel with the arch.
- In tight spaces, angle the scanner tip to take advantage of the reach of its corner.
- Angle the scanner tip to focus on the mesial cusp of the far tooth, and then change the angle to focus on the distal cusp of the near tooth (as pictured below).
Review Scan Quality

Examples of Insufficient Overlap in Anterior

If you see ridges or grooves at the incisal edge that do not reflect actual tooth anatomy, the scan has not accurately registered; and it will ultimately be rejected by the SureSmile Digital Lab. Do not order this scan. Instead, delete the segment and re-scan to capture accurate data.

NOTE: Once the scan is sent, it cannot be modified. If the scan is rejected by SureSmile, the patient must be recalled and the data re-captured.

These images are from SureSmile after the data has been imported.
Looking at the left buccal view, you can see the missing coverage causes the brackets’ shape to be distorted. The distortion will cause bracket registration to be compromised.

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<table>
<thead>
<tr>
<th>Scans with Good Coverage</th>
<th>Scans with Bad Coverage</th>
</tr>
</thead>
</table>

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Magnification of the UL5 bracket shows the distortion of the upper mesial wing and pad.
Using the TRIOS® Scanner to Capture Data for SureSmile

Take the Scan/Send Order

1. If you are capturing data for a therapeutic model, capture the upper, lower and bite. OR
   If you are capturing data for an update scan or supplemental scan, capture only the arches or areas needed.

2. Fill in any voids to capture:
   - Therapeutic Scan: 100% of tooth surfaces for all teeth in a therapeutic scan
   - Update Scan: 100% of tooth surfaces for changed teeth plus adjacent teeth for a minimum of 3 teeth (to provide good coverage for integrating new data with the therapeutic model)
   - Supplemental Scan: 100% of tooth surfaces for teeth that cannot be modeled from the CBCT scan plus adjacent teeth for a minimum of 3 teeth (to provide good coverage for integrating new data with the therapeutic model)
   - 100% of bracket face/wings
   - 70% of bracket mesial and distal edges of base
   - Gingival margins

3. Complete the order to send the data to your TRIOS computer.
   You can take patient photos and x-rays at the time that works best for you during the appointment. Since the file transfer process may take several minutes, you may find this is a good time to take records.
   NOTE: The SureSmile Digital Lab recommends marking the bite with articulating paper when preparing to take photos. Also, wires must be removed for SureSmile records.

4. For SureSmile Advanced, reinsert the archwires and complete the patient appointment
Export Scan Data

To retrieve STL files, follow the instructions in the *Open STL Quick Start Guide*:

1. Go to the computer with a wireless connection to your TRIOS.
2. Open the Ortho Analyzer software.
3. In the Open Patient dialog, select the TRIOS tab.
4. Find your patient record and click the checkmark to accept it.
5. Go back to the Patients tab and find the scan under the patient name.
6. Right-click the data and choose Open Model Set… A window opens to show the models.
7. Click the Export icon in the upper-right corner. The Save As dialog opens.
8. For each arch, change the Save As type to STL and browse to a location.
9. In the Save As dialog, click the Save button.

Keep your scans organized so you can easily find them for import into an order for a SureSmile model. The files are given default names such as “mandibular” and “maxillary.” You can use Windows Explorer to rename them to the patient’s name or ID. Or you can save them to a folder that identifies the patient.
Ordering a Therapeutic Model from STL/PLY Files for SureSmile Advanced

Create/Open a Patient Record

1. Login to SureSmile: https://login.SureSmile.com/
2. Add a new patient record or open a patient record.

Select a Case Type

1. On the Patient Overview, click the New button and look at the menu.
2. If the “Select Case Type” option is available, choose it from the menu to go to the Patient Profile page. (If it is not available, continue to the steps below “Start a Therapeutic Model Order.”)
3. In the drop-down menu, select the appropriate case type and click Save Changes. The software returns to the Patient Overview.
   
   WARNING: If your patient will be treated with custom wires now or as a later therapy, do NOT select the Aligner case type.
4. Continue to the steps below “Start a Therapeutic Model Order.”

Start a Therapeutic Model Order

1. On the Patient Overview, click the New button and choose Therapeutic Model. A new model order opens.
2. Update the Dental Exam for the Teeth tab.
3. If the patient is bonded, select the Brackets tab and update the Dental Exam for the bracket assignments.
Upload 3D Scan Data Files

1. For Upper Jaw, click the Choose File button, select the patient’s upper scan file and click Open.

2. For the Lower Jaw, click the Choose File button, select the patient’s lower scan file and click Open.

At this point, the files are simply assigned but not yet uploaded. The “Submit Product” button will not become available until you upload files.

NOTE: The bite data is not required since the upper/lower relationship was set at the time the data was captured.

3. Click Upload Files and wait a minute for the files to be copied to the cloud. A confirmation appears in the “Already uploaded” area.

Submit the SureSmile Advanced Order for a Therapeutic Scan

The Submit Product button becomes available for a therapeutic model order when you have uploaded files for both the upper and lower arches.

TIP: If you see a red notice instead of the Submit button, you have skipped the steps to select a case type. Follow the link in the notice to make your choice.

1. Click in the Product Notes area, and type any relevant notes regarding your order.

2. Click the “Deliver with Brackets” checkbox as needed:
   - In a therapeutic model order, the “Deliver with Brackets” checkbox is checked by default. If this is correct (the patient is bonded and will receive custom wires), continue to the next step.
   - OR, if you are scanning a patient that is NOT bonded (or will be debonded at the next appointment) to transition from braces to aligners, uncheck the “Deliver with Brackets” checkbox.

3. Click Submit Product.

Once an order is submitted, the therapeutic model order status is updated to Ordered. The order is now restricted to “Read Only” in the practice. This means you can review it, but you cannot change it. If you have submitted an order that you would like to cancel or change, please contact SureSmile Customer Care.
Ordering a Therapeutic Model from STL/PLY Files for SureSmile Ortho or SureSmile Aligner

Create/Open a Patient Record

1. Login to SureSmile: https://login.SureSmile.com/
2. Add a new patient record or open a patient record.

Enter Patient Information

- Enter the patient’s first name, last name and DOB. The orthodontist will populate automatically but you have the option to choose a different doctor if needed. Staff is optional.

Click on Case Selection Criteria to review the recommendations.

Select a Package Type (this step does not pertain to SureSmile Aligner)

- Full-service Aligner Staging - Aligner Case (includes Therapeutic model + setup and staging)
  - Lab-created setup & staging
  - Evaluate and accept plan
  - Print or export 3D models
- Advanced Diagnostics - Therapeutic Model + Advanced Toolset
  - Simulate treatment options
  - Surgery, restorative & extractions
  - Optional: 3D models, IDB trays
Upload Surface Scan Data

1. Select Choose files to upload or drag and drop scan data files on the icon.

   If you plan to include a CBCT scan to order a premium model, check the check box for CBCT premium option ($). If you select the check box, the system will prompt you to upload the CBCT scan files after the order has been placed.

2. Click Next.

Upload Images

1. Select Choose files to upload or drag and drop image files on the icon.

2. Click Next.

Dental Examination

1. If any teeth are missing from the scan they need to be marked as missing in the Dental Examination.

   Select individual tooth boxes to mark them as missing or use the shortcut buttons below the tooth chart to mark multiple teeth at once. You may also leave notes for the Digital Lab in the Modeling Notes box if needed.

2. Click Next.

Prescription

Complete each section of the prescription form (MACROS). Click each section to expand it.

All sections except Special Instructions are required
Payment and Order

Select your payment method then click Place Order. If you are submitting only STL files, you are finished with your order. The Digital Lab will process your order and return it for your review within 6-10 US business days.

If you are submitting a CBCT scan along with your STL files, you will be able to upload the CBCT scan after you click Place Order.
Ordering an Update Model

This section is not applicable for SureSmile Ortho and SureSmile Aligner. For SureSmile Advanced only.

An update scan is used to update the therapeutic model of bonded patients in the event of:

- A newly erupted tooth has been added to treatment.
- One or more brackets were rebonded or repositioned.
- The tooth anatomy has changed to the extent that the setup is affected.

NOTE: The update scan is applicable to bonded patients only, and is not available in an aligner case type.

Capture Scan Pieces

Although the TRIOS software is designed for full arch scanning, you can capture just a section for a SureSmile update scan. Here are some tips:

- You do not have to start at a terminal tooth. The scanner will allow you to start and end at any tooth. When you stop and view the scan, the software will simply close up the hole at either end.
- To capture multiple areas in one arch, we recommend performing a full arch scan. The sections to be modeled by the Digital Lab should be captured at the highest possible quality; however ancillary areas can be captured to lower standards.

To help the Digital Lab accurately merge and process the update scan data to update the therapeutic model, follow these requirements:

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capture the affected teeth AND the adjacent teeth.</td>
<td>If you rebonded the LL4 and LL5, capture the LL3-LL6</td>
</tr>
<tr>
<td>Capture a minimum of three teeth.</td>
<td>If you added the UL7 to treatment, capture the UL5-UL7</td>
</tr>
<tr>
<td>For the required area, follow quality criteria described for Therapeutic Scans</td>
<td>If you changed the brackets on the molars, completely capture anatomy and brackets for the molars. The anterior may be captured at a lower quality as long as the arch is connected into one piece.</td>
</tr>
</tbody>
</table>
Start an Update Scan

1. On the Patient Overview, click the New button and choose Update Model. A new model order opens.
   
   NOTE: If the update model option is not available:
   
   - If you selected the Standard or Extended case type, make sure that you have submitted a therapeutic model order.
   - If you selected the Aligner case type, you cannot use the update model feature. To capture changes to tooth anatomy for this case type, order another therapeutic model (additional fees may apply).

2. Update the dental exam and bracket assignments, if changed.

Upload 3D Scan Data Files

1. For Segment 1, click the Choose File button, and browse to the patient folder you created for this purpose.
2. Select the STL file you saved for the patient’s arch (or partial arch) and click Open.
3. Click the Coverage drop-down adjacent to Segment 1. A dialog appears with a tooth chart.
4. In the tooth chart, indicate your modeling request:
   
   If you are capturing a bracket rebond, click the corresponding tooth symbol ONCE. The bracket symbol is shaded in dark blue.
   
   OR

   If you are capturing a new tooth, click the corresponding tooth symbol TWICE. Both the tooth and bracket symbols are shaded in dark blue.

5. Click Close to close the tooth chart.
6. Repeat these steps for each segment you captured for this patient. You may attach up to four segments.
   
   OR

   To remove a data segment, click the Remove button adjacent to the segment information.

   NOTE: There is room for four segments, which should be more than sufficient. If there are extensive changes to the patient’s teeth and brackets, we recommend ordering a new therapeutic model (full scan of both arches).
7. Click Upload Files button and wait a minute for the files to be copied to the cloud. A confirmation appears in the “Already uploaded” area.
Submit the SureSmile Order for an Update Model

The *Submit Product* button becomes available for an update model order when you have attached data.

1. Click in the Product Notes, and type any relevant notes regarding your order.
2. Click Submit Product.
3. Click OK to confirm you have updated bracket assignments, if changed.

Once an order is submitted, the update model order status is updated to *Ordered*. The order is now restricted to “Read Only” in the practice. This means you can review it, but you cannot change it. If you have submitted an order that you would like to cancel or change, please contact SureSmile Customer Care.
Ordering a Therapeutic Model from a CBCT Scan and a Supplemental Scan

A supplemental scan is used to add data from an optical scan (TRIOS) to the data from a CBCT scan to form a complete representation of the patient.

This scan is required if the patient has a certain number of teeth with restorations that cannot be accurately modeled from a CBCT Scan. Optionally, it can be used to add a bite segment as well as order a premium modeling service where all or most crowns are modeled from the optical data (additional fee applies).

NOTE: SureSmile Ortho and SureSmile Aligner will need to capture full upper and full lower arches. Refer to the appropriate CBCT protocol to determine if a supplemental scan (or premium) is needed.

Capture Scan Pieces

Although the TRIOS software is designed for full arch scanning, you can capture just a section for patients with minimal restorations requiring a supplemental scan. Here are some tips:

- You do not have to start at a terminal tooth. The scanner will allow you to start and end at any tooth. When you stop and view the scan, the software will simply close up the hole at either end.
- To capture multiple areas in one arch, we recommend performing a full arch scan. The sections to be modeled by the Digital Lab should be captured at the highest possible quality; however ancillary areas can be captured to lower standards.

To help the Digital Lab accurately merge and process the supplemental scan data into the therapeutic model, follow these requirements:

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capture the affected teeth AND the adjacent teeth.</td>
<td>If the upper laterals have been built up, capture the UL3-UR3</td>
</tr>
<tr>
<td>Capture a minimum of three teeth.</td>
<td>If the UL7 contains a large filling, capture the UL5-UL7</td>
</tr>
<tr>
<td>For the required area, follow quality criteria described for Therapeutic Scans</td>
<td>If both sides of an arch have been restored in the posterior, completely capture anatomy and brackets for the restored teeth and adjacent teeth. The anterior may be captured at a lower quality as long as the arch is connected into one piece.</td>
</tr>
</tbody>
</table>
Start a Therapeutic Model Order (for CBCT Scans)

1. In the browser, create an order for a Therapeutic CBCT scan following the instructions in the SureSmile protocol for your CBCT Scanner.
2. Complete the dental exam.
3. Refer to SureScan to import the CBCT data.
   NOTE: You must attach CBCT data using the “Select CBCT scan data folder” button before the Finish Scan button becomes available in SureScan and the Submit button available in SureSmile browser.

Import STL Files for Supplemental Scans

1. Select the Files (PLY/STL) tab.
2. Under the tab, click the Create/Preview/Edit icon adjacent to the segment name (such as Segment 1).
3. In the tooth chart, select each tooth in one arch to be modeled from the supplemental scan due to limitations of CBCT processing.
   For example, if the UR5 and UR6 both have metal fillings larger than 3 mm, select each tooth symbol.
   OR
   Click the arch checkbox (upper or lower) to select all teeth and gingiva in the arch for premium modeling (additional fee applies).

WARNING: This option requires full arch data for the supplemental scan to be processed successfully by the Digital Lab. If you captured partial segments, do not use this feature!
4. Click the folder icon in the New Supplemental Scan Segment window, and browse to the patient folder you created for this purpose.

5. Select the STL file you saved for the patient’s arch (or piece), and then click Open.

6. If needed, use the on-screen camera navigation controls to view the model. Click OK when you are finished to close the New Supplemental Scan Segment window.

   Notice that the name of the segment is updated according to the teeth you selected.

7. If you have another segment, click to add another row of segment icons and repeat steps 2-7 to add another data segment.

   OR

   To remove a data segment, click the button adjacent to the segment information or to view the segment.

   NOTE: The bite option is not applicable with 3Shape TRIOS scans since bite information is stored within the upper and lower arch files.
Submit the SureSmile Advanced Order for a CBCT Scan with a Supplemental Scan

1. Once all necessary scan data have been uploaded for the CBCT scan with supplemental order, it is time to complete the task.
   Click in the white area, and type any additional notes regarding your order.

2. Click on Finish Scan to complete task for this patient and submit the scan.

3. Click OK and return to SureSmile in the browser to submit the product.
Return to SureSmile

1. After you’ve completed uploading the scan data for that patient in SureScan and have clicked Finish Scan to submit the scan data, return to SureSmile in the browser.

2. Open the order page for the patient and scroll down to Submit Order section. Enter any additional information about the order for the Digital Lab if needed (optional).

If you have not fulfilled all of the prerequisites

- when you return to the SureSmile browser, SureSmile opens to the Missing Prerequisites section of the Order page and shows which prerequisites are still missing.
- The system displays a reminder to refresh the screen. A message, Scan data missing, remains displayed until you manually refresh the web page. (Press the F5 key.)
- You must submit all missing prerequisites before you can submit the product order.
- Once you fulfill all missing prerequisites, click Submit Product to order the model.
Start a Therapeutic Model Order (for CBCT Scans)

1. In the browser, create an order for a Therapeutic CBCT scan following the instructions in the SureSmile protocol for your CBCT Scanner.

2. Select Package type. *(This step does not pertain to SureSmile Aligner)*
   - Full-service Aligner Staging - Aligner Case (includes Therapeutic model + setup and staging)
     - Lab-created setup & staging
     - Evaluate and accept plan
     - Print or export 3D models
   - Advanced Diagnostics - Therapeutic Model + Advanced Toolset
     - Simulate treatment options
     - Surgery, restorative & extractions
     - Optional: 3D models, IDB trays

3. Upload Surface Scan Data
   a. Select Choose files to upload or drag and drop scan data files on the icon.
   b. Check the check box for CBCT premium option ($) to include a CBCT scan to order a premium model. The system will prompt you to upload the CBCT scan files after the order has been placed.
   c. Click Next.

4. Upload images
   - Click ‘Choose files to upload’ to locate the photos & x-rays on your computer or drag them to this box.
   - Note: X-rays are optional for SureSmile Aligner

5. Complete Dental Examination - Mark any teeth that are not present in the scan as ‘missing’

6. Complete Aligner Prescription
   - Choose which arch(es) to treat and decide if you want to treat to ‘Ideal’ or choose ‘Custom’ to give the Digital Lab specific instructions.
   - If you choose ‘Custom’ you will need to complete the aligner prescription we call MACROS. There is more information on MACROS in the next section.

7. Select payment method and place order
   You will then see a confirmation that your order was submitted for processing. The Digital Lab will process your case and return it for your review. Cases are typically returned within 6 business days but no longer than 10 business days.
8. If you selected the CBCT premium option ($) you will be prompted to upload your CBCT scan via SureScan. You will need to install SureScan on the computer where the CBCT scan files are located.

- If you already have the SureScan software installed on the computer you are using, jump to step 10.
- If you have SureScan installed on a different computer, jump to step 16. If you need to download SureScan to the computer you are working on, please continue to step 9.

Note: SureScan can only be used on Windows; you cannot use SureScan on a Mac.

9. A few options to download SureScan:

- Click the (Download SureScan) link; the SureSmile Ortho/SureSmile Aligner Help Center will open.
- Click Install SureScan/Image Composer under Software Downloads and follow the prompts.
- You can also click Installation Instructions under the install link for instructions on how to download SureScan.

If you have SureScan on the computer, you are working on:

10. Click the SureScan button to open SureScan. If you get a pop-up asking if you want to open SureScan, click the affirmative option to open the program.
11. Login with your SureSmile credentials.
12. The patient should open. If the patient does not automatically open, find the patient in the task list and double click their name to open it.
13. Click the Select CBCT scan data folder … button and locate the CBCT scan files. Once the files have been uploaded, click Finish Scan.

OR

If you will be using SureScan on a different computer:

10. Open SureScan and login with your SureSmile credentials.
11. Find the patient in the task list and double click their name to open it.
12. Click the Select CBCT scan data folder … button and locate the CBCT scan files. Once the files have been uploaded, click Finish Scan.
Once the CBCT data has been submitted, SureSmile begins transferring the data over to the Digital Lab. Due to the large size of the files, this process may take a while depending on your bandwidth. Please do not close your computer or allow it to go into “sleep” mode for at least 3 hours after submitting so that all of the data can come across. If this is done at the end of the day, you may want to leave your computer on overnight.

If you want to check the transfer status you can right-click the green SureScan icon in the taskbar at the bottom right corner of your screen and select Show.

A window will display where you will see the number of files waiting to be uploaded. When the window is empty, all of the CBCT data has been transferred and it is safe to turn off your computer.
Ordering Diagnostic or Final Models for SureSmile Advanced

The SureSmile software supports the same STL/PLY format option for importing data to build diagnostic and final models.

You can capture the patient’s dentition using your Trios scanner or any other device that can export a PLY or STL file. For example, some offices use a tabletop scanner to capture plaster models for initial and final records.

The requirements for SureSmile scan quality are:

- 100% of every tooth surface
- 2 mm of gingiva
- No interproximal, gingival or lingual holes
- No missing cusp tips

Just like the therapeutic scan, a standard record set including photos and x-rays helps the Digital Lab with tooth modeling. For diagnostic and final models, these records are recommended rather than required.

Start a Diagnostic/Final Scan

1. Open SureSmile via your browser.
   On the Patient Overview, click the New button and choose Diagnostic (or Final) Model. A new scan order opens.
   **NOTE:** If you see a $ sign in the menu option, a fee applies for this service.

2. Update the Dental Exam for the Teeth tab.
Import STL Files for Diagnostic/Final Scans

1. For Upper Jaw, click the Choose File button, select the patient’s upper scan file and click Open.

2. For the Lower Jaw, click the Choose File button, select the patient’s lower scan file and click Open.

At this point, the files are simply assigned but not yet uploaded. The “Submit” button will not become available until you upload files.

NOTE: The bite data is not required since the upper/lower relationship was set at the time the data was captured.

3. Click Upload Files and wait a minute for the files to be copied to the cloud. A confirmation appears in the “Already uploaded” area.

Submit the Order for a Diagnostic/Final Model

The Submit Product button becomes available when you have attached data.

1. Click in the Product Notes area, and type any relevant notes regarding your order.

2. Click the “Deliver as Finished” checkbox as needed:
   - For diagnostic models, leave the box checked if you prefer the model to be delivered with a workflow task that includes options for starting an IDB tray or treatment simulation. Uncheck the box if you prefer the model to be delivered in a Review Order state.
   - For final models, leave the box checked if you prefer the model to be delivered without a task. Uncheck the box if you prefer the model to be delivered in a Review Order state.

3. Click Submit Product.

Once an order is submitted, the order status is updated to Ordered. The order is now restricted to “Read Only” in the practice. This means you can review it, but you cannot change it. If you have submitted an order that you would like to cancel or change, please contact SureSmile Customer Care.
Ordering Diagnostic Models for SureSmile Ortho or SureSmile Aligner

The SureSmile software supports the same STL/PLY format option for importing data to build diagnostic and final models.

You can capture the patient’s dentition using your 3Shape TRIOS scanner or any other device that can export a PLY or STL file. For example, some offices use a tabletop scanner to capture plaster models for initial and final records.

The requirements for SureSmile scan quality are:

- 100% of every tooth surface
- 2 mm of gingiva
- No interproximal, gingival or lingual holes
- No missing cusp tips

Just like the therapeutic scan, a standard record set including photos and x-rays helps the Digital Lab with tooth modeling. For diagnostic and final models, these records are recommended rather than required.

Start a Diagnostic Scan

1. Log onto SureSmile on the web.
   - Open your web browser and type https://login.suresmile.com into the address bar.
   - Type your Email address and Password and click Login
   Note: You should use Google Chrome, Mozilla Firefox or Safari
2. Add a new patient or open the Patient Overview for an existing patient.
3. Enter patient information
   - Enter the patient’s first name, last name and DOB. The orthodontist will populate automatically but you have the option to choose a different doctor if needed. Staff is optional.
4. Select Package type (This step only pertains to SureSmile Ortho.)
5. Upload surface scan data. Check the check box for CBCT premium option ($). If you select the check box, the system will prompt you to upload the CBCT scan files after the order has been placed.
6. Upload images
   - Click ‘Choose files to upload’ to locate the photos & x-rays on your computer or drag them to this box.
   - Note: X-rays are optional for SureSmile Aligner
7. Complete Dental Examination
8. Select payment method and place order.
9. If you chose to use CBCT data in Step 5, will you now refer to SureScan to upload the CBCT scan.
FAQs

NOTE: Please be aware that some of these questions may only pertain to SureSmile Advanced especially if it mentions brackets or wires.

How will I learn to integrate the 3Shape TRIOS scanner with SureSmile treatment?

If you are new to SureSmile, your Account Manager (AM) will visit your office to support you as you launch SureSmile treatment. During this visit, the AM will educate selected staff on all of the functionality for completing and managing SureSmile orders.

Which brackets can we use with patients scanned using the 3Shape TRIOS scanner?

All brackets in the SureSmile bracket library are available for use with the TRIOS scanner. However, if you are using CBCT for therapeutic scans with the TRIOS scanner capturing any needed supplemental scans, you are limited to brackets labeled “CBCT-Approved.”

Can I use an opaque solution on the teeth or brackets to help with TRIOS scanning?

If you are having difficulty capturing clear brackets, such as 3M Unitek Clarity™, you can apply a thin coating of an opaque solution on these brackets prior to scanning. In addition to helping you capture clear brackets, use of an opaque solution can also help you scan restorations such as veneers that inhibit data capture.

What if I am interrupted while working on completing the order in SureSmile and cannot finish importing required records until later?

Do not click Submit. When you are ready to complete the order, select the Tasks tab and filter for Submit Order to easily find your incomplete patient records.

Why would I submit an update model order?

An update scan is used to update the therapeutic model in the event of:

- A newly erupted tooth has been added to treatment.
- One or more brackets were rebonded or repositioned.
- The tooth anatomy has changed to the extent that the Setup is affected.
When is a supplemental scan required?

There are three situations when a supplemental scan is required:

1. During the initial examination, you determine that the patient has restorations* that do not meet our requirements for CBCT-only scans. (Remember to set time in your appointment schedule for a CBCT scan AND an intraoral scan.)
2. Your CBCT scan was rejected due to distortion (usually from metal fillings). In this case, recall the patient within two weeks of the date of the CBCT scan. At the appointment, reopen the SureSmile order and add a supplemental scan* according to DL instructions.
3. For SureSmile Ortho and SureSmile Aligner, full upper and lower supplemental scans are required for cases being submitted with CBCT data.

If the patient has 7 teeth per arch (or 11 total) with problematic restorations, the CBCT scan will most likely be distorted. To compensate for this issue, you may scan full arches in the supplemental scan area to request our premium service (available for an additional fee). Or, to avoid the fee, do not submit a CBCT scan. Instead, submit a full intraoral scan of the patient using your TRIOS.

Do we need to take the CBCT scan and the supplemental scan the same day?

Yes. When you examine the patient at the beginning of treatment, you will see which teeth cannot be captured in a CBCT scan and will require a supplemental scan. At that time, schedule the patient for the CBCT scan AND for chair time with the TRIOS scanner during the same appointment. Since the data will be combined in the SureSmile Digital Lab, the scans should be taken the same day.

What if my scan is rejected because a supplemental scan is needed or has a problem?

Recall the patient to capture the area that was missed or is a problem. This appointment must be scheduled within 2 weeks of the CBCT scan or the new scan may not register with the CBCT scan since the teeth are moving. Refer to the SureSmile Digital Lab product notes for instructions.

When you open the patient record, double-click the name of the rejected product (shaded in red under the Items heading). You will need to click Yes to restart work on the scan. Next, attach the new data and submit the order.

Users of the orascanner can take a bite scan to supplement a CBCT scan. Can we do this with the TRIOS scanner?

No. The TRIOS scanner does not store a bite scan as a file that can be downloaded for import into SureSmile.

What if I don’t have a supplemental scan to upload when I’m importing my CBCT scan?

1. If supplemental cannot be provided at the same time as importing of CBCT Data, do not Finish Scan
2. Click Save
3. Click Back. This will create a task for this patient and return you back to the Tasks page in SureScan
Do I need to capture a full arch on the 3Shape TRIOS to submit update or supplemental scans?
Yes, for SureSmile Ortho or SureSmile Aligner.

No for SureSmile Advanced. You may capture an area of an arch following these requirements:
- In addition to capturing the teeth to be remodeled, capture the adjacent teeth which serve as “anchor teeth” to help the Digital Lab merge this data with the therapeutic model.
- A minimum of three teeth must be included in the scan to accurately merge the data.
- Follow quality and coverage requirements to accurately represent the patient.

We scanned a patient before the brackets were available in the library. Now that they have been added, how do we update the patient’s therapeutic model?
This situation is more common for new practices that are in the process of getting brackets added to the SureSmile Bracket Library. If none of the patient’s brackets are available in the library, the order will be placed on “Hold.” In this state, the brackets can be easily identified once they are available by following the steps to release a hold.
Alternatively, if the case was processed into a finished therapeutic model because some brackets were available and registered, you will order an update model.
1. Open the patient record and start an order for an update model.
2. Select the Brackets tab and make the new bracket assignments.
3. Upload the patient’s therapeutic data. (This is the same data you previously uploaded for the therapeutic model order.)
4. Indicate in the coverage area which brackets you are updating.
5. Type notes explaining that these brackets have become available, and submit your order.

I ordered a therapeutic model in a Standard case for the purpose of starting the patient in aligners but I forgot to deselect the “Deliver with Brackets” checkbox. What will happen?
If you forget to deselect this checkbox and there are no brackets on the teeth in the attached data, the order will be rejected.
If you had brackets entered in the Dental Exam; first, you will need to click the Make All Not Bonded button. Since the “Deliver with Brackets” checkbox will no longer be available after a rejection, the next step is to resubmit the order and the problem will be corrected.

I ordered a therapeutic model in a Standard case for wire therapy but I accidentally deselected the “Deliver with Brackets” checkbox. What will happen?
If you are placing an order for a patient who needs custom wires (as indicated by brackets in the Dental Exam and on the teeth in the attached data) and you inadvertently deselect the checkbox, the order will be rejected. Click the Make All Bonded button to fix the problem and resubmit.
Scan Criteria for Segments

Follow scan criteria to capture a complete representation of the patient’s anatomy, brackets.

- 100% tooth coverage and interproximal areas
- 100% of bracket face/wings
- 70% of bracket mesial and distal profiles
- 2mm of gingiva

Opaque & Capture Brackets

- These scanners are not designed to capture brackets. For all bracket types (including clear), you must apply an opaque solution to assist the scanner in capturing bracket geometry. Consider using retractors to keep the opaque solution from being wiped off of the brackets before they can be scanned.
- Attempt to include a view of the brackets as you make your occlusal pass.

Scan Pattern for Segments

Scanning Bonded Patients

When you receive your TRIOS training, you will learn

- how to scan both arches and the bite
- how to use tools for erasing extra data that may have been captured (i.e., cheek, tongue).

In general:

- Keep the scanner in motion. You will need more pictures to capture bonded patients so do not hover over an area or you may exceed recommended image counts.
- Try standing to capture difficult angles, such as when you are scanning the bite.
- Avoid capturing soft tissue (tongue, lips, cheeks) since soft tissue can move between pictures and confuse the system. This rule also applies to your fingers. If you accidentally capture any extraneous anatomy, use the trim function to remove this data.
- It is critical to follow the TRIOS scan strategy—especially the wiggling across the incisors as part of the first pass where you capture the occlusal surface. This view provides global accuracy to avoid warping of the 3D model.

To Capture Incisal Edges

When capturing the buccal view, switch to a 45° angle as you approach the anterior teeth to capture some of the occlusal view as well. As needed, fill in buccal data to capture the area shadowed by the brackets.

To Capture Interproximal Areas

- When capturing the lingual view, angle the scanner down over the lingual of the anterior rather than turning parallel with the arch.
- In tight spaces, angle the scanner tip to take advantage of the reach of its corner.
- Angle the scanner tip to focus on the mesial cusp of the far tooth, and then change the angle to focus on the distal cusp of the near tooth (as pictured below).
## SCAN CHECKLIST

<table>
<thead>
<tr>
<th>Therapeutic Scan</th>
<th>Supplemental Scan (CBCT Users only)</th>
<th>Update Scan</th>
</tr>
</thead>
</table>
| A full intraoral scan used to model the patient’s current tooth anatomy and bracket positions. | A partial intraoral scan to capture optional bite and/or:  
- Teeth with restorations which were not captured adequately during a CBCT scan (6 or less teeth in an arch or 10 total)  
- $ Premium service to model more/all teeth | A partial intraoral scan to capture changes after the therapeutic scan has been taken:  
- Newly erupted tooth  
- Rebond  
- Change in anatomy that will affect setup |

1. **Prepare patient**
   - Remove wires
   - Close bracket doors
   - Remove turbos/equilibrate

2. **Take photos & x-rays**
   - Photos and panorex must be taken within 4 weeks before or 2 weeks after the scan.  
   - Standard set required
   - Also recommended:
   - Current panorex required:
   - Ceph required (current preferred, but initial is acceptable):

3. **Take scan**
   - Capture upper, lower, bite
   - Use approved scanning technique (serpentine, and sweep-rock)
   - For bite scan, use natural bite
   - Open existing order or start a new CBCT order
   - Take scan intraorally
   - Capture teeth with restorations: crowns, bridges, PVC, PFM, metal fillings 3mm or larger
   - Capture incisal restorations
   - Capture a minimum of 3 teeth
   - Capture 2 or more anchor teeth per segment
   - Touch to start next segment

4. **Replace wire/instruct**
   - Brush
   - Replace wires
   - Give instructions/wire appointment handout

5. **Upload photos & x-rays**

6. **Submit order**
   - Update dental exam for missing teeth
   - Update dental exam for brackets
   - Submit order/set wire appointment date

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*The steps to submit the order and upload records may be completed later in the day as time allows:*

- Update dental exam
- Submit order/set wire appointment date
- For bracket updates, order new wire(s) and note the update scan
- For tooth updates, order new setup

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