

**American Sign Language
Linguistic Research Project**



What's New in SignStream® 3.4.1 ?

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Available from: <http://www.bu.edu/asllrp/rpt23/asllrp23.pdf>

1. Introduction

SignStream® version 3.4.0 was a substantial upgrade relative to the prior public release from July 2020 (version 3.3.1), with many bug fixes, new features, interface enhancements, and a change in file structure. Version 3.4.1 is a minor but important update from 3.4.0. There are several critical bug fixes, and anyone currently using version 3.4.0 is urged to upgrade. The changes are addressed in this document.

We are grateful to the developers at the Rutgers University Laboratory for Computer Science Research (LCSR), especially Gregory Dimitriadis, principal SignStream® programmer; thanks also to Douglas Motto and Charles Hedrick at LCSR. This work has been partially funded by NSF grants to Rutgers and Boston Universities (#2040638, 17634866, 1763523, 2235405, 2212302, 2212301, and 2212303).

2. System Requirements

Operating Systems: MacOS Ventura (13), Monterey (12), Big Sur (11), Catalina (10.15), or Mojave (10.14), High Sierra (10.13), Sierra (10.12), or El Capitan (10.11)

Hardware:

- Mac computer with 64-bit Intel or ARM (Apple Silicon) processor
Note that SignStream® 3.4.1 has not yet been extensively tested with the new ARM hardware. There may be some differences in how the program works with this hardware.
- 2 GB of RAM
- 250 MB of hard drive space

3. Installation Instructions

Please follow the directions carefully. If you are *not* upgrading from a previous version, you can skip ahead to Section 3.3.

3.1. Upgrading from SignStream® version 3.4.0

You have two options:

- You can upgrade using the “Upgrade SignStream” command from the Help menu in SignStream 3.4.0. This preserves local information about annotators and participants, as well as all entries in the local Sign Bank.
- Alternatively, you can follow the instructions in the Section 3.2.

3.2. Upgrading from a previous version of SignStream®

You should download version 3.4.1 from the main SignStream 3 download page (as explained in Section 3.3). You can then manually copy over local files from your previous SignStream folder, as explained in Section 3.4, if you wish to preserve previous information about local annotators or participants, and/or entries from a local Sign Bank, before you launch the new application.

Important note: SignStream files that were last saved in a version of SignStream 3 prior to 3.3.0 cannot be opened with this current version of SignStream (3.4.1). To open such files, you will need to first open them with SignStream version 3.3.0 and save them; those saved versions will then be able to be opened with the current version of SignStream. If you do not have SignStream version 3.3.0 installed and need a link to download that version of the software for this purpose, please email Carol Neidle (carol@bu.edu) for a download link. (System requirements for version 3.3.0 will be detailed in the email reply.)

3.3. Installing a fresh new current version of SignStream® (version 3.4.1)

The application is available for download from: <http://www.bu.edu/asllrp/SignStream/3/download-newSS.html>. Unzip the "SignStream3-latest.zip" file that will have been downloaded. That will create a folder called "SignStream3". You can move the whole folder to your desired location, **but do not move files within that folder**. Before launching the application, you must complete the steps outlined below.

Before launching the application, from within that folder:

- 1) You will need to allow the launch of the SignStream®3 application, despite the fact that it is not provided by Apple or certified developers (to get around security features that have been implemented in Mac Operating Systems since OS 8).
- 2) You will also be offered the opportunity to download the latest ASLLRP Global Sign Bank, which consists of a repertoire of signs, with gloss labels and annotations of other properties, as well as images and video illustration of those signs, to assist with annotation of new video files. This Global Sign Bank is not required for use of SignStream®. However, if you download the Sign Bank, you must agree to the terms of use below (which will also be downloaded to your SignStream folder).

Open a Finder **window**, and double-click on the SignStream folder (the folder you downloaded, which includes the application and related files). Do the following, in the order listed:

- 1) **[Required]** You will see a file called “**DisableQuarantine.command**”. Double-click on that. You may get a message asking if you want to open the file even though it is from an unidentified developer. If so, say YES. If you get a message that the file cannot be opened because it is from an unidentified developer:
 - a. Go into System Preferences > Security & Privacy > General
 - b. Under the section "Allow apps downloaded from" click "Open Anyway" for this file.
This will open in the Terminal application and run immediately, then close itself when finished.
- 2) **[Optional]** If you wish to download the ASLLRP Global Sign Bank, double-click on "GetSignBank.command". You will be asked whether you wish to download the Sign Bank and agree to abide by the terms of use. If you click ‘yes’, the download of the ASLLRP Sign Bank materials (and Sign Bank terms of use) will commence. Close the Terminal window.

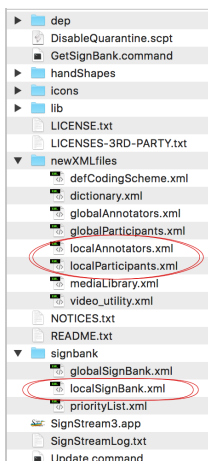
Note: It is extremely important to be using the most current version of the Sign Bank.

New versions of the Sign Bank will be released in the future, and SignStream® will download new versions as they become available (alerting the user that this is to happen; see next section).

Do not move files out of the main SignStream 3 folder.

You will then be ready to launch SignStream® by double-clicking on the "SignStream3" file. **You can skip ahead to Section 3.5** unless you have previously used an older version of the software and wish to preserve information from that version, in which case you should follow the instructions in Section 3.4 before launching SignStream®.

- 3.4. If you do a fresh install of SignStream® 3.4.1, as explained in Section 3.3, **and wish to manually copy local files from a prior SignStream® folder:**



You should follow the instructions in Section 3.3, but be careful to deploy the new package to a new directory distinct from any previous SignStream directory. Then copy the following files over from your old directory to the new SignStream directory (see Figure 1) to overwrite the previous files:

signbank/localSignBank.xml
newXMLfiles/localAnnotators.xml
newXMLfiles/localParticipants.xml

Figure 1. Local files to be preserved from older versions of SignStream®

3.5. Note about installing SignStream® on ARM hardware

The first time you click on the SignStream® application on ARM hardware, you will be asked to install Rosetta (which emulates the Intel instruction set) if it is not already installed. Click "Install" if asked. Once that is done, double-click again on the SignStream® application to launch it.

4. Change in File Format

Starting with version 3.4.0, SignStream® files are saved with .ssc (rather than .ss3) as the file extension. One consequence of the change in file structure relative to earlier versions is that when you initially open a SignStream collection created with an earlier version of thFerre application, a conversion to the new file format will occur, and the file will then subsequently be saved with the new file extension: .ssc. It will no longer be possible to open .ssc files with earlier versions of SignStream. The conversion process will also entail a file validation process, so please be patient while this occurs. In the event that some intervention is required by the user to ensure that the data are properly converted, such validation errors will appear in a separate window, and instructions will be provided for verifying/correcting the relevant item. You can access any such messages (if you are alerted that there were any issues) from the Help menu, as shown in Figure 2.

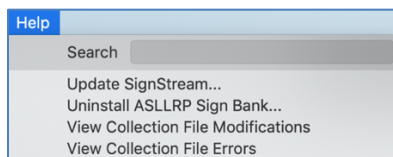


Figure 2. Any issues with the file can be viewed from the Help menu

5. Improvements in version 3.4.1 relative to 3.4.0

1. SignStream® is now compatible with newer Mac hardware and OS 13 (Ventura).
2. *Critical bug fix:* Upon re-opening the Morph-Phon window for a sign after the SignStream file had been saved and reopened in version 3.4.0, settings for "Different" handshapes on the dom/ndom hands would get incorrectly set to "Same" handshapes. Likewise, settings for different start and end handshapes on either or both hands were incorrectly set to same start and end. This has been solved in this release. (Please note that unfortunately, settings for Alternating handshapes saved in 3.4.0 will be lost, and this is not recoverable in the new release.)
3. Calls to the online Sign Bank from within SignStream now use https.
4. Gloss text is validated to allow spaces only between quotation marks.
5. Text input is validated in many places, to avoid having blank/null values for textual information, to exclude invalid characters.
6. It is no longer possible to rename an utterance with the same name as another utterance.
7. The same segment tier can no longer be displayed twice in Utterance view, as the duplication would cause corruption of data.
8. A better message is shown to users when an irrecoverable error occurs.

6. Some remaining issues

6.1. Use of the up and down arrow keys

It was previously possible to use the up and down arrow keys to navigate to the previous or next utterance in the utterance index list on the left of the *Utterance Window*. However, for some reason in the versions 3.4.0 and 3.4.1, you may need to click once in the right area of the window (within the rectangle shown below) prior to using the arrow keys.

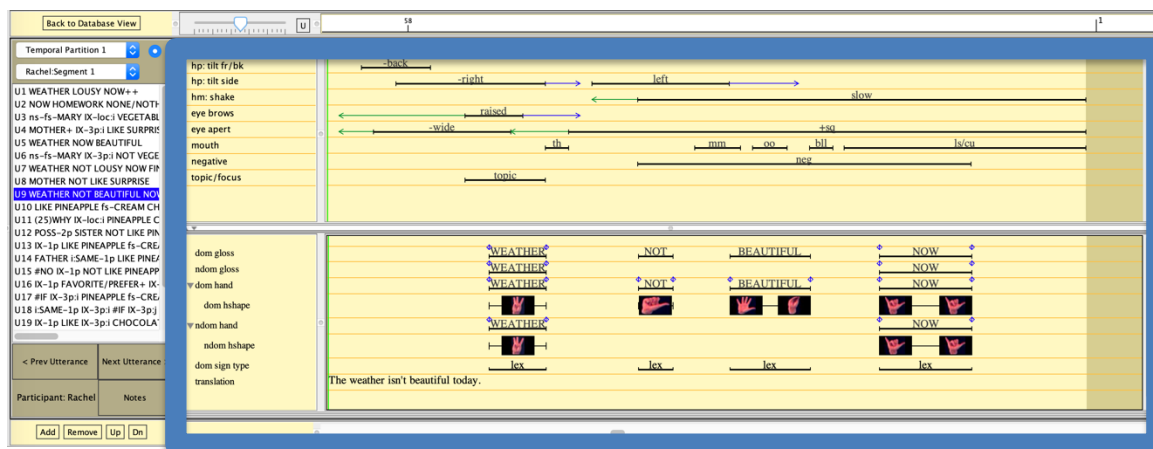


Figure 3. To use arrow keys for navigation in Utterance Index on the left of the *Utterance Window* : click first within the rectangle shown.

In addition, in Utterance view, double-clicking on a nonmanual field label temporarily triggers the up/down arrow keys to move the highlighted nonmanual field label instead of moving to the previous/next utterance.

6.2. Other known issues – to be resolved in future versions

• Installation

- Issues can arise when any directory on the path to your SignStream installation contains a quote character (') or a double quote character ("), so remove these characters from your directory names to avoid any problems. <https://github.com/DCS-LCSR/SignStream3/issues/485>

• Macro-Unit Settings

- There is an inconsistency in how edits or additions to the local participant list are treated.

• Database and Utterance Windows

- Display glitch with the translation field: Currently, if there is not enough display space within a given utterance to display the full translation from that utterance, the display will continue into – and overlap with – the translation field of the following utterance. Workarounds:
 1. Click on the translation field so that the text becomes editable. You can then scroll through the text of the translation to view, and potentially edit, that text. You must hit a Carriage Return after any editing, so that your changes will be recorded.
 2. You can adjust the Zoom to create more display space within that utterance.
- Display glitch when going from Utterance to Database view. The current active frame remains active, as indicated by the position of the green vertical alignment indicator, but may be out of the visible range in the Database view. Workaround: Scroll to the desired position.
- Display glitch in the Utterance Window when entering gloss labels for more than one sign prior to setting the start and end points. Setting the start and end points of one of those items may cause the other to be displayed in such a way that the text for both is overlapping. Workaround: Align the text of the first gloss label before entering the next one.
- If you hide the Utterance window (how you do this depends on your Mac OS, e.g., by clicking on the title bar, in older OSs, or by clicking on the red button at the upper left of the window), the hidden window is not recoverable. You will need to Quit SignStream and reopen the utterance. Although you will not have access to Save File through the menus (because the Utterance window is hidden), when you quit the program, you will be given the option to save the file. Be sure to save if you want to. Workaround: Don't hide the Utterance window.
- Note that closing the Utterance window will quit the program.
- In the Utterance view, editing a nonmanual field value by double-clicking it to open the field value selection list and selecting a value will result in the Utterance preview list incorrectly highlighting only the selected utterance (in blue) while not highlighting the visible utterances (in gray).

- In the utterance view, when the green slider is near to the end of the video, some visual glitches may occur while the zoom level slider is being actively dragged. After the slider is released, the zoom level will be set correctly.
- On Macs with ARM processors: When the user clicks into an utterance for the first time from the database view, the zoom level will pan out to display the entire length of the video. After that, the zoom level will pan out to display just the length of the selected utterance.
- The icons for zoom locking/unlocking may be duplicated upon opening a new collection.
- The utterance index on the left side of the Utterance View is inconsistent in its text highlighting, sometimes black text on blue background and sometimes white text on blue background.
- **Having more than 1 Temporal Partition and/or Segment Tier visible in the Utterance Window**
 - When two segment tiers are displayed, changing the order of fields in one is not reflected in real time in the field ordering of the display of the other.
 - Utterance highlighting is not consistent when multiple segment tiers are showing in Utterance View.
 - Adding multiple segment tiers to the utterance view at once, or switching between temporal partitions from the dropdowns, could both cause minor display issues in the dropdowns.
- **Morph-Phon and Sign Bank Windows**
 - Morph-Phon settings for a gloss can visually linger on the dialog window when opening up the Morph-Phon dialog again for a different gloss.
 - Morph-Phon window "Enter" button behavior is not consistent in when it is enabled or disabled (requiring use of the Bypass Sign Bank button to enter data).
 - The Local Sign Bank does not ignore the + sign that can occur at the end of a gloss label to indicate reduplication. In the Global Sign Bank, GLOSS and GLOSS+ and GLOSS++ are grouped under a single entry: GLOSS. In the Local Sign Bank, if you have GLOSS+ at the time you save to local Sign Bank, it will be entered as GLOSS+. So you may have both GLOSS and GLOSS+ in the local Sign Bank, although that will never occur in the Global Sign Bank. Workaround: Since it is currently impossible to delete an entry from the Local Sign Bank, you should be careful not to include the + in the Morph-Phon window at the time you choose to enter a new sign into the Local Sign Bank. In any case, after you enter the information from the Sign Bank, you will want to adjust the gloss label to include +'s as needed, to reflect the repetitions that happen at the end of that occurrence of the sign.
 - Currently, when you "insert all data" from the Sign Bank:
 1. Only the start and end handshapes of the sign will be inserted into the Morph-Phon window. In case there are additional handshapes, e.g., for a loan sign, you will need to add them manually.
 2. There may be errors in the insertion of information about sign properties when entered automatically from the Sign Bank (especially in regard to sign type for name signs that have a prefix before the ns- marking, e.g., "(M)ns-text" or "(2h)ns-text"). Please be sure to verify that all information about sign properties displayed in the Morph-Phon window is correct before entering that information into the Utterance Window.
- **Searching**
 - In versions 3.4.0 and 3.4.1, it is no longer possible to change the search domain, and thus no longer possible to carry out the same search on more than one SignStream collection.
- **Other**
 - For some reason, launching SignStream® causes the Terminal window to be activated. You should be aware of this, although it should not cause any issues.
 - The green bar location is remembered when opening or creating a collection. When switching collections, the video will start at time zero, but the green line will remain in the middle where it was for a previously opened collection. The position of the green bar is also remembered when a video file is replaced within a SignStream collection and re-displayed.
 - The Paste function does not work when doing a "Save-as" for a SignStream file. Workaround: you will need to type in the filename you wish to assign.

6.3. Other functionalities remaining to be incorporated in future versions

- **General**

- Making it possible to see handshapes that are not fully visible by hovering over the handshape
- Making SignStream menus fully available when a window other than the Utterance Window is active
- Implementation of Cut/Paste/Undo functionality
- Enabling paste to work in window for file saving
- Improving the way local information (e.g., about participants, annotators, sign bank) is dealt with
- Ability to open multiple files/windows simultaneously
- Ability to have multiple macro units in a single SignStream collection
- Reconsideration of annotator function, and button for selecting that start and end handshapes are the same or different
- Improving help functions and tooltips
- Import and export options
- Ability to deal with sound (for spoken language)
- Information about the XML format will be provided
- Additional tools for entry of data about gestures, in both signed and spoken language

- **Database and Utterance Windows**

- Implementation of “Display Time Period” in both *Database* and *Utterance Windows*
- Addition of buttons to play previous event/entity
- Restoration of arrow key functionality

- **Morph-Phon and Sign Bank Windows**

- Resolving font display issues – in glosses and in tabs of the *Morph-Phon Window*
- Improving the sort order of display of Sign Bank results
- Enabling search by related English words in the Sign Bank (as is now possible online, at <https://dai.cs.rutgers.edu/dai/s/dai>)
- Enabling more complete information about handshapes to be entered from the Sign Bank into the Morph-Phon Window when the sign is associated with more than a start and end handshape (i.e., for loan signs)
- Enabling deletion of an entry in local Sign Bank

- **Search Window**

- Ability to repeat a search on a different collection and to save and re-open searches
- Adding some keyboard shortcuts to the Search Window

7. Additional Documentation

Please see the following reports from the American Sign Language Linguistic Research Project (ASLLRP) at Boston University:

[A User's Guide to SignStream® 3](#) **Report No. 15** Neidle, C. (August 2017) [[pdf](#) - 24 MB],
http://www.bu.edu/asllrp/SignStream/3/SS_User-guide.pdf

[What's New in SignStream® 3.1.0?](#) **Report No. 16** Neidle, C. (May 2018) [[pdf](#) - 14 MB]
http://www.bu.edu/asllrp/SignStream/3/SS_update.pdf

[What's New in SignStream® 3.3.0?](#) **Report No. 17** Neidle, C. (2020) [[pdf](#) - 14 MB]
http://www.bu.edu/asllrp/SignStream/3/SS_update-3_3.pdf

[What's New in SignStream® 3.4.0?](#) **Report No. 22** Neidle, C. (2022) [[pdf](#) - 1.6 MB]
<http://www.bu.edu/asllrp/rpt22/asllrp22.pdf>

For information about our online, SignStream-annotated, video corpora shared through our Data Access Interface and about the ASLLRP Sign Bank, see:

- Neidle, C. and A. Opoku (2020) [A User's Guide to the American Sign Language Linguistic Research Project \(ASLLRP\) Data Access Interface \(DAI\) 2 – Version 2](#). Boston University, ASLLRP Project **Report No. 18** [pdf - 11 MB] <http://www.bu.edu/asllrp/rpt18/asllrp18.pdf>
- Neidle, C. & Opoku, A. (2021). Update on Linguistically Annotated ASL Video Data Available through the American Sign Language Linguistic Research Project (ASLLRP). Boston University, ASLLRP Project **Report No. 19** [pdf - 16 MB] <https://www.bu.edu/asllrp/rpt19/asllrp19.pdf>
- Neidle, C., Opoku, A., and Metaxas, D. (2022) ASL Video Corpora & Sign Bank: Resources Available through the American Sign Language Linguistic Research Project (ASLLRP). *arXiv:2201.07899*. <https://arxiv.org/abs/2201.07899>
- Neidle, C., Opoku, A., Ballard, C., Dafnis, K. M., Chroni, E. & Metaxas, D. (2022). Resources for Computer-Based Sign Recognition from Video, and the Criticality of Consistency of Gloss Labeling across Multiple Large ASL Video Corpora. *10th Workshop on the Representation and Processing of Sign Languages: Multilingual Sign Language Resources*. LREC, Marseille, France. European Language Resources Association (ELRA). [BU Open Access: https://hdl.handle.net/2144/45152](#)

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