

Updates to the Plugin Time Signatures for Irregular Bars

Bob Zawalich November 5, 2022 updated January 8, 2026

This plugin looks for irregular bars, which are bars whose length does not match the current (“nominal”) time signature. A pickup bar is a common example of an irregular bar. Typically, irregular bars do not have an explicit time signature, but sometimes you will have an irregular bar with a time signature that does not match its size. Again, a pickup bar is a common example of such a bar.



Time Signatures for Irregular Bars adds, to selected irregular bars, explicit time signatures that match the size of the bar. This is useful for at least 2 scenarios.

- Doing a system copy of irregular bars, and then pasting them will often change the irregular bars into bars whose size matches their time signature, like changing the 2/4 bar above into a 4/4 bar with added rests. Making the bars regular avoids this problem.
- Another use is when importing a score into an existing score or Manuscript Paper. Such an import requires that the time signatures of the bars of the source file match those of the destination, and irregular bars are not allowed.

The original plugin was written in 2008, and I updated it in 2022. The major changes I made were:

1. “Spelling” of time signatures. When adding a time signature, the plugin only has the length of a bar to determine which time signature to add. Previously, I computed the spelling of the time signature to use the simplest fraction, and so I would use 3/4 instead of 6/8. In this update, I try to match the bottom number (denominator) of the new time signature to that of the previous bar.

An irregular bar containing 3 quarter notes bar following a 4/4 bar will show 3/4, but the same bar following a 9/8 bar will show 6/8. That cannot always work, though. A bar with 3-8th notes following a 4/4 bar cannot be 1.5/4, so the denominator will change to the next available value that makes the numerator a whole number, in this case 3/8.

2. When the plugin is run on a selection of bars that does not include the end of the score, the time signature of the bar **following** the selection is set so that the bar retains the time signature it had before the plugin was run. This ensures that the bars that follow that bar will not have their time signatures changed.
3. I added a new mechanism to allow a user to add time signatures to irregular bars, and later remove the added time signatures. The removal feature will take a bit of explanation.

Restoring Irregular Bars

There is now a checkbox in the plugin dialog that is labeled “Add comment for restoration of irregular bars”. If this is checked when the plugin runs, it will create a Comment attached to the bar following the first selected bar, on the first selected staff. You can move the Comment to a different location in the score, and the plugin will still find it, but if you delete the comment the plugin will not be able to restore the irregular bars.

The Comment contains data that the plugin can later use to remove the added time signatures. Here is an example of such a comment:

Time Signatures For Irregular Bars

26/7/8,28/3/4,30/5/8,32/2/4,34/3/8,36/1/4,38/1/8

The text in the Comment is a group of fields, separated by commas, each containing a bar number and the top and bottom numbers of the added time signature. In the example above, the first entry, 26/7/8 indicates that a 7/8 time signature was written to bar 26.

You would only check “Add comment for restoration of irregular bars” if you were planning to restore the irregular bars later.

After you have run the plugin and then done what you need (copying and pasting irregular bars or importing into a template, for example), and you want the bars to be irregular again, you can run Time Signatures for Irregular Bars again. It will check to see if it can find a Comment whose bar numbers have these Time Signature changes in them. If so, it will enable the “Restore Irregular Bars” button. This is explained in more detail in Help...

Time Signatures For Irregular Bars - Version 01.82.00 - by Bob Zawalich

This plug-in adds a time signature (TS) to any selected irregular bars (bars whose length differs from that of the previous bar's TS). It will restore the TS of regular bars as needed.

See Help... for details of how the added time signatures are "spelled", and for an explanation of how to remove the time signatures of the original irregular bars at a later time.

Add time signatures and trace changed bars

Add time signatures; do not trace

Trace irregular bars; do not add time signature

Add comment for restoration of irregular bars

Allow cautionary time signature

Restore Irregular Bars

Help... Cancel OK

“Restore Irregular Bars” will delete the time signatures shown in the Comment, then delete the Comment as well.

Here are some examples

Step 1: Before running the plugin

Full Score

Note that sys copying irregular bars will restore them to nominal size!
The nominal ts for the irregular bars on the first 2 pages is 4/4. The plugin will try to retain the denominator (4) for the generated ts when possible. So a bar with 6-8th notes following a 4/4 bar will get 3/4, not 6/8, but a bar with 5-8th notes would have 2.5/4 which is not allowed, so the numerator and denominator are doubled until the top number is an integer (5/8 in this example).

Watch this space

2 Test TS for Irregular Bars Here Full Score
Note that in all these cases the nominal ts is 4/4, so what looked like 6/8 will use 4 for the preferred denominator

Irregular bars

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Add time signatures and trace changed bars
 Add time signatures; do not trace
 Trace irregular bars; do not add time signature
 Add comment for restoration of irregular bars
 Allow cautionary time signature

Restore Irregular Bars

Help... Cancel OK

If you are adding TSes to make bars regular, you can check this box to make it possible to remove the added TSes later

This will only be enabled if there is a special Comment in the score

Step 2

After running Time Signatures for Irregular Bars with the Add comment... option

Step 2

Full Score

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Add time signatures and trace changed bars
 Add time signatures; do not trace
 Trace irregular bars; do not add time signature
 Add comment for restoration of irregular bars
 Allow cautionary time signature

Restore Irregular Bars

Help... Cancel OK

Comment added to allow future removal of added TSes. This should survive importing into a template. It gives the bar location and num/denom of the added TSes. Do not delete if you want to restore irregular bars later.

This is intentionally a Comment and intentionally in bar 2. A comment will not normally print, but it is obvious if Comments are visible. If visible you should notice it. It is OK to move or hide the comment.

TSes added to make bars regular

Will be ignored if restoring irregular bars

Enabled. Pressing will delete added TSes and Comment in bar 2

Output from adding and tracing TSes

Plug-in Trace

Time signature 7/8 added to bar 25 (26)
Time signature 3/4 added to bar 27 (28)
Time signature 5/8 added to bar 29 (30)
Time signature 2/4 added to bar 31 (32)
Time signature 3/8 added to bar 33 (34)
Time signature 1/4 added to bar 35 (36)
Time signature 1/8 added to bar 37 (38)

A Comment to allow future removal of added time signatures was added to bar 2 of staff 1. You can delete the comment if you will not be restoring the original irregular bars. Restoring the irregular bars will delete the comment.

Step 3

After running Restore Irregular Bars

Note that sys copying irregular bars will restore them to nominal size!
 The nominal ts for the irregular bars on the first 2 pages is 4/4. The plugin will try to retain the denominator (4) for the generated ts when possible. So a bar with 6-8th notes following a 4/4 bar will get 3/4, not 6/8, but a bar with 5-8th notes would have 2.5/4 which is not allowed, so the numerator and denominator are doubled until the top number is an integer (5/8 in this example).

Comment is gone.

Traced if Trace option enabled. Results of restoring irregular bars.

Bars are irregular again. Reset Notes Spacing was done to remove gap left by the removal of the TS

One tricky problem

My original expectation was that an irregular bar would have no explicit time signature. Sometimes, typically in pickup bars, you can have an irregular bar with a time signature that does not match the size of the bar, as in this example:

Irregular bar with an explicitly non matching time signature. Underlying ts is 4/4

The plugin previously replaced the 4/4 from bar 93 with a 2/4 time signature, and then put in a 4/4 in the following bar. This is fine until you want to remove the added Time Signatures.

If the plugin simply deleted the added time signatures, bar 93 would have no time signature, so we would lose the original 4/4. The plugin now adds some additional data to the Comment field for such a bar so that it knows which time signature to add back to that bar.

While normally a data field might be:

93/2/4,... to represent that I added a 2/4 time signature in bar 93,

I might now have 93/2/4/4/4/0. The 3 extra digits would represent the original time signature that the irregular bar had. The last zero is a flag for AllowCautionary that is needed to recreate the overwritten time signature.

When the extra data is found, instead of just deleting the current time signature from that bar, I can write out a time signature from the last 3 digits, without changing the lengths of the bars.

An annotated example of a complex set of bars

Time signatures, when added or deleted, do not rewrite the bars.
The 2 blocks in red below are bars before and after running the plugin.

4 Full Score

FL. 1 2

103 104 105 106

107 108 109 110 111

Copy of bars above. Test here
irreg bars test with irreg following bar

irreg bar with unmatching TS, like pickup bar

Time Signatures For Irregular Bars
112/2/4/4/4/0, 113/4/4, 114/3/4, 115/4/4, 118/3/4, 119/4/4

FL. 1 2

112 113 114 115

116 117 118 119 120

Bars 112 – 120 are a copy of bars 103-111, and the plugin was run on bars 112 – 118, as shown by the selection in the first block. The double barline marks the selection end. In this discussion “q” means “quarter note”, and “TS” means “time signature”.

Original Time Signatures:

- 103: like a pickup bar, the bar length is 2q, but the TS is 4/4.
- 104: a 4/4 bar with no TS
- 105: an irregular bar of length 3q. Filled with 6-8th notes. Nominal TS is 4/4.
- 106-108: 4/4 bars with no TS
- 109: irregular bar of length 3q. Nominal TS is 4/4. Last selected bar.

110: bar following the selection. Irregular bar of length 3q. Nominal TS is 4/4. Must be set to 4/4 not 3/4, and cannot be left with no TS, or its nominal TS, and that of the bars following, would be 3/4.

111: unaffected when plugin is run and bar 109 is the last selected bar. Bar 111 is a 4/4 bar with no TS. Nominal TS is 4/4 despite being preceded by the irregular bar.

Changed Time Signatures:

112: Irregular bar gets $2/4$ TS

113: Gets $4/4$ TS so it will not be treated as $2/4$ from bar 112

114: Irregular bar gets $3/4$ TS. Not $6/8$ because it tries to maintain denominator of previous bar ($4/4$).

115: $4/4$ bar gets $4/4$ TS to terminate $3/4$ TS from bar 114.

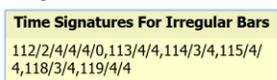
116-117: $4/4$ bars with no TS. Maintain nominal $4/4$ TS from the TS added in bar 115.

118: Irregular bar gets $3/4$ TS. This was the last selected bar.

119: This is tricky. The bar following the selection is an irregular bar of length $3q$. Its nominal TS had been $4/4$, and bar 120 depended on that setting. Bar 119 gets its original nominal TS restored by adding a $4/4$ TS, not $3/4$. If it had been changed to $3/4$, the nominal TS of the following bars would be $3/4$, which is wrong.

120: This was not affected by the plugin. It had a $4/4$ nominal TS before running the plugin and by giving bar 119 a $4/4$ TS, the nominal TS for bar 120 remains $4/4$.

Generated Comment



Time Signatures For Irregular Bars
112/2/4/4/4/0,113/4/4,114/3/4,115/4/4,118/3/4,119/4/4

This Comment will be used by the plugin if the Restore Irregular Bars button is pressed. Restore Irregular Bars deletes the time signatures added by the plugin, using the data in the Comment to tell it what to delete.

When the text is split into one field per line, we see the results of running the plugin:

112/2/4/4/4/0,
113/4/4,
114/3/4,
115/4/4,
118/3/4,
119/4/4

113 – 119 just show the internal, sequential, bar number followed by /added numerator/added denominator

Bar 112 is interesting. It had been an irregular $2/4$ -sized bar, but it also had an explicit $4/4$ time signature. When the plugin set the TS to $2/4$, the original $4/4$ would be lost if the $2/4$ TS were later deleted.

To prevent that, the Comment field for bar 112 is extended with enough information to rewrite the original overwritten $4/4$ TS. The final $4/4/0$ in the entry tells the plugin that after deleting the $2/4$ TS, it needs to restore the original $4/4$. The final zero (0) tells the plugin not to allow cautionaries when restoring the TS.