GreenHopper Synchronizer

GreenHopper Synchronizer lets you synchronize the position of issues in the structure and on the Rapid Board (or Planning Board) using Rank synchronization, and synchronize Epic/Theme field with the position of stories under epics in the structure.

GreenHopper 5.8 introduced *Global Rank* field, which can be used to manage a multi-project backlog. GreenHopper synchronizer in Structure lets you select multiple projects to sync with when you are using Global Rank.

GreenHopper Synchronizer Parameters

Project	A project that GreenHopper is used in. The structure may contain issues from other projects, they will not be affected. **GreenHopper 5.8 or later:** Multiple projects may be selected. The issues from all selected projects will be synchronized using the same Global Rank field.
Auto-add Subtasks	When turned on, sub-tasks will be automatically added to the structure and forced to stay under their respective parent issues, like they do on GreenHopper's Planning Board. This works similarly to Sub-Tasks Synchronizer.
Rank Field	The field of type "GreenHopper Rank" that holds the rank (backlog order) for the selected Project. If you do not wish to synchronize rank, select *Don't synchronize*.
Epic Field	The field of type "Labels" that is used to hold the key of the Epic that the story belongs to. Typically named "Epic/Theme". If you do not wish to synchronize Epics content, select *Don't synchronize*. The synchronizer allows to select an Epic/Theme field even if it is applicable only to some of the available issue types. When the synchronizer should set a value to an Epic/Theme field, it will not make a change if the field is not applicable to the issue type of the changed issue.
Epic Type	Relevant only if an Epic Field is selected. Defines an issue type that is treated as Epic - typically named "Epic". All issues placed under an issue of this type in the structure will be updated to have Epic Field point to that issue.

This synchronizer supports both Import and Export / Resync into/from Structure (*more about resync*). Incremental synchronization watches both structure changes and GreenHopper changes and applies the change to the other side.

CAREFUL! Please be careful when using this synchronizer, especially when you add multiple issues to the Structure, as this may lead to massive updates in the GreenHopper ranks without undo.

On Fix Versions

Earlier GreenHopper versions relied on values in the **Fix in Version/s** field - if a version has been released, the issues assigned to that version won't appear on the Classical GreenHopper boards. GreenHopper synchronizer in Structure reflected that behavior and ignored such issues.

With the introduction of Rapid Board, this dependency on Fix Version field has become optional. In some cases, Fix Version field is completely disabled and the teams use GreenHopper Sprints. To address that, the GreenHopper synchronizer no longer filters issues by Fix Version, unless you're using an old GreenHopper version.

GreenHopper Synchronizer Rules

Common Rules:

- Issues that do not belong to the synchronized project(s) are not affected. If you've got GreenHopper earlier than 5.8 and not using Global Rank field, then issues that are assigned to Fix Versions that have been released are also not affected.
- This synchronizer does not add issues to the structure (with two exceptions, explained below). You can use Saved Filter synchronizer together with GreenHopper synchronizer to automatically add and position issues.

Sub-Tasks Synchronization:

- With **Auto-Add Subtasks** mode on, sub-tasks are added to the structure if their parent is there in the structure.
- The sub-tasks are forced to stay under their parent, so if you move a subtask somewhere else, it will jump back under the parent again. You can rearrange the order of the sub-tasks, which will be sync'ed to the GreenHopper Rank if the Rank Field is configured.

Rank Synchronization:

- Repositioning issues in the structure causes Rank change and the repositioning issues on the Planning Board.
- Rearranging issues on the GreenHopper's Planning Board causes the issues to be rearranged in the structure.
- When issues are repositioned in the structure according to Rank, they are never moved under a different parent issue.

  This restricts the possible rank changes in GreenHopper - you can only move an issue to the position of another issue that is under the same parent issue in the structure, otherwise the issue will "jump back" later.

Epic Synchronization:

- Placing an issue under an Epic in the structure will cause its Epic/Theme field to change to that Epic.

    - It does not matter at what level of depth is the sub-issue. A sub-sub-sub-issue of an Epic issue will also have its Epic/Theme field updated.
- If you manually change Epic field to point to a different Epic, the issue will be repositioned under that Epic in the structure.
    - An issue that has the Epic/Theme field pointed to an Epic in the structure will be automatically added to the structure.

How to Add Issues to Structure Sync'ed with GreenHopper

When GreenHopper synchronizer is enabled, it automatically updates GreenHopper order in background when any Structure change happens. So if you carelessly add issues from the sync'ed project to the structure in some random order, their ranks will be updated according to that order.

To add issues to the structure without breaking the existing backlog order:

- If adding manually on the Structure Widget, use JQL search and add *order by Rank* clause at the end of the query. Use the rank field that is used by the synchronizer.
- Select the position of the added issues carefully (best with drag-and-drop or copy/paste) - the order is likely to change unless you place issues under another issue without any other sub-issues (see *Syncing Partial Orders* below).
- If using Saved Filter synchronizer to add issues, add *order by Rank* clause to the Saved Filter's query. However, the new issues that are added with the Saved Filter synchronizer will appear at the end of the structure and so will have the latemost ranking.

Syncing Partial Orders

GreenHopper's Planning Board is flat (except for sub-tasks), and the Structure is hierarchical - so it is not possible to precisely rearrange Structure to have all issues come in the same order as they do on the Planning Board, without changing issue parents or making the Structure also flat.

Henceforth, the Structure syncs subsets of the issues in the hierarchy with GreenHopper rank. For example, consider the following Structure:

A	
	B
	C
D	
	E
	F

It is not possible to rearrange the sub-issues so that they come in the following order: B, E, C, F - although this is possible on the Planning Board. Instead, the structure will synchronize sub-sets of the issues in the Structure with GreenHopper. The following sub-sets will be synchronized separately:

- A, D - top-level issues: A must come before D on the Planning Board
- B, C - sub-issues of A are sync'ed separately, so B must come before C on the Planning Board
- E, F - ditto for the sub-issues of D