

Filter Basket

User Guide and Examples

Version 1.4 | QGIS 3.x and 4.x

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1. Overview

Filter Basket is a QGIS plugin that filters a target vector layer using values picked from a source vector layer. Click a feature on the map, choose which values to collect, and the target layer is filtered immediately using a layer subset expression.

The tool is domain independent. It was originally written for telecom MR/cell workflows, but all user-facing wording is now generic: source and target layers, groups, fields, and selected values.

1.1 Features

- Pick values directly from features on the map canvas.
- Group related source features using a Group Field.
- Display selected values under headers such as Group (site_id): SITE-01.
- Remove a whole group from its list header.
- Resolve overlapping features with the Select Source Value dialog.
- Highlight picked source geometries on the canvas.
- Build type-aware filters for string, numeric, and boolean target fields.
- Re-apply the filter automatically when the target layer or field changes.
- Reload layers without restarting QGIS.
- Persist layer and field choices between sessions.
- Tooltips on every control, a built-in Help dialog, and Qt5/Qt6 support.

2. Installation

1. Copy the plugin folder into the Python plugins folder of your active QGIS profile.
2. Typical Windows location: %APPDATA%\QGIS\QGIS3\profiles\default\python\plugins
3. Restart QGIS, then open Plugins > Manage and Install Plugins > Installed.
4. Enable Filter Basket. A toolbar button and a Plugins menu entry appear.

The folder must contain metadata.txt, the Python modules, and filter_basket.svg. Do not rename the folder.

3. Interface

Control	Purpose
Source Layer	Vector layer to pick features from.
Target Layer	Vector layer that will be filtered.
Group Field	Source field whose value groups features together.
Source Field	Field on the source layer holding the values to collect.
Target Field	Field on the target layer to filter against.
Activate Pick Tool	Turn the map click into a value picker.
Reload Layers	Refresh layer lists after adding layers in QGIS.
Help	Show a short description of the workflow.

Selected Target	Values used in the filter, grouped under Group Field headers.
Clear All	Clear values, remove the filter, and delete highlights.

3.1 Terminology changes from older versions

Old label	Current label
MR Layer	Target Layer
Source Cell Field	Source Field
MR Cell Field	Target Field
Selected Cells	Selected Target
Tower Field	Group Field
Select Cell	Select Source Value

Only the displayed text changed. Saved settings still use the original internal keys, so existing configurations are preserved.

3.2 Grouped Selected Target list

Selected values are displayed under bold, non-selectable headers in the form Group (field_name): group_value, for example Group (site_id): SITE-01. The field name is captured when the group is picked, so headers stay correct even if the Group Field combo changes later.

Action	Result
Right-click a value	Remove it from every group and update the filter.
Press Delete on a value	Same as Remove.
Right-click a group header	Remove group - remove the whole group and its highlights.

If the same value belongs to more than one group it appears under each group. Removing the value removes it everywhere. Removing a group keeps a shared value in the filter as long as another group still contains it.

4. Quick start

5. Choose the Source Layer and the Target Layer.
6. Choose the Group Field, Source Field, and Target Field.
7. Click Activate Pick Tool.
8. Click a feature on the map. If several values are found, tick the ones you want and click Add Selected.
9. The values appear under a Group (field_name): value header, the target layer is filtered, and the picked features are highlighted.
10. Click Clear All when you want to see the full target layer again.

5. Worked examples

5.1 Example 1 - Basic pick and filter

Scenario: inspect measurements for selected sectors of a site.

Setting	Value
Source Layer	Sites (point layer)
Group Field	site_id
Source Field	sector_id
Target Layer	Measurements (point layer)
Target Field	sector_id

The Sites layer has three features with site_id = SITE-01 and sector_id values SITE-01-A, SITE-01-B, and SITE-01-C.

11. Click Activate Pick Tool, then click any SITE-01 feature.
12. A dialog titled Group: SITE-01 appears listing the three sector values.
13. Tick SITE-01-A and SITE-01-B, then click Add Selected.
14. The Selected Target list shows a Group (site_id): SITE-01 header with both values beneath it; the site geometries are highlighted.

The target layer receives this subset expression:

```
"sector_id" IN ('SITE-01-A','SITE-01-B')
```

Only measurements for those two sectors are drawn.

5.2 Example 2 - Add multiple values from a group

Click any SITE-01 feature, tick all three sector values in the Group dialog, and click Add Selected.

```
"sector_id" IN ('SITE-01-A','SITE-01-B','SITE-01-C')
```

5.3 Example 3 - Remove a whole group

Right-click the Group (site_id): SITE-01 header and choose Remove group. Every value in that group is removed from Selected Target, its highlights are cleared, and the filter is rebuilt from the remaining values. A shared value that also belongs to another group stays in the filter.

5.4 Example 4 - Overlapping features

When more than one source feature lies under the cursor, a dialog titled Select Source Value lists the Source Field value of each feature. The values belonging to the features under the cursor are preselected. Choose one row and click OK to use that feature's group.

5.5 Example 5 - Remove a single value

Right-click a value in the Selected Target list and choose Remove, or select it and press Delete. The value is removed from every group it appears in, its highlights are cleared, and the filter is updated. Empty group headers disappear automatically.

5.6 Example 6 - Numeric target field

If the Target Field is an integer or double, values are written unquoted so the filter matches correctly.

```
"sector_no" IN (101,102)
```

Boolean fields produce TRUE / FALSE, and string values are quoted with apostrophes escaped, for example O'Brien becomes 'O''Brien'.

5.7 Example 7 - Non-telecom use

The same workflow applies to any two layers. For example: Source Layer = Districts (polygon), Group Field = region, Source Field = district_code; Target Layer = Incidents (point), Target Field = district_code. Picking a district filters incidents to that district.

5.8 Example 8 - Reload layers

After adding a new layer in QGIS, click Reload Layers. The layer lists are rebuilt from the current project while your existing layer and field selections are restored where possible. Only vector layers are listed.

5.9 General example - Zones and Events

This example uses completely generic layers and shows that Filter Basket is not tied to telecom or site/cell data. The goal is to show only events located in selected zones.

Setting	Value
Source Layer	Zones (polygon layer)
Group Field	district
Source Field	zone_code
Target Layer	Events (point layer)
Target Field	zone_code

The Zones layer contains district North with zone codes N-01 and N-02, and district South with S-01 and S-02.

15. Click Activate Pick Tool, then click a zone in district North.
16. The dialog titled Group: North lists N-01 and N-02.
17. Tick both values and click Add Selected.
18. Only events whose zone_code is N-01 or N-02 are drawn.

Resulting subset expression:

```
"zone_code" IN ('N-01','N-02')
```

The Selected Target list shows a Group (district): North header above N-01 and N-02. Right-clicking the header removes that group. The same pattern works for any grouped data: regions and customers, departments and staff, parcels and permits, or batches and orders.

5.10 General example - Numeric keys

Numeric target fields need no quotes. Here a Batches layer supplies batch numbers used to filter an Orders layer.

Setting	Value
Source Layer	Batches (polygon or point layer)
Group Field	supplier
Source Field	batch_no
Target Layer	Orders (point layer)
Target Field	batch_no (integer)

19. Click a batch belonging to supplier A and tick batches 101 and 102.
20. Click Add Selected.

Resulting subset expression:

```
"batch_no" IN (101,102)
```

6. How filtering works

- Values are stored per group and the filter uses the union of all groups, so duplicates are ignored.
- The Selected Target list shows a bold header per group, labelled with the Group Field name captured at pick time.
- Removing a value removes it from all groups; removing a group keeps shared values that other groups still contain.
- A subset expression is built using the selected Target Field on the Target Layer.
- Field names are double-quoted and escaped; string values are single-quoted and escaped.
- Numeric values are unquoted and booleans use TRUE/FALSE.
- The expression is applied with setSubsetString() followed by triggerRepaint().
- Changing the Target Layer or Target Field re-applies the current filter.
- Clear All sets an empty subset string, which shows every feature again.

7. Saved settings

Layer and field choices are stored in QgsSettings under the MRFilter group and restored the next time the plugin loads.

```
MRFilter/source_layer
MRFilter/mr_layer
```

```
MRFilter/tower_field
MRFilter/source_cell_field
MRFilter/mr_cell_field
```

Settings are saved when the dock closes or the plugin is unloaded. Selected values and highlights are not saved between sessions.

8. Compatibility

- QGIS 3.x and QGIS 4.x; metadata declares qgisMaximumVersion=4.99.
- Uses qgis.PyQt compatibility imports and scoped Qt enums for Qt5 and Qt6.
- QAction is imported from qgis.PyQt.QtGui, as required by Qt6.
- Only vector layers can be selected as source or target.

9. Troubleshooting

Symptom	What to check
A layer is missing from the combos	Only vector layers are listed. Click Reload Layers.
No values appear after a click	Confirm the Group Field and Source Field names.
The filter hides everything	Check the Target Field type and that values match exactly.
The toolbar icon does not appear	Reload the plugin or restart QGIS.
Old highlights remain	Click Clear All.
A value disappeared from other groups too	Value removal is global by design; remove the whole group instead if needed.
Apostrophes in values fail	Quotes are escaped automatically; check the provider supports subset strings.

10. Limitations

- One target layer is filtered at a time.
- Selected values and highlights are not persisted between sessions.
- Reload restores settings by layer name, so renamed layers may not be restored.
- The group field name in a header is captured when that group is picked.
- The provider for the target layer must support subset strings.

11. Version history

Version	Changes
1.4	Highlight cleanup errors are logged instead of silently ignored; resolves plugin security scan

	findings.
1.3	Grouped Selected Target list with Group Field headers, group-level removal, and shared-value handling.
1.2	Generic layer and field naming, tooltips, Reload Layers and Help buttons, escaped filter expressions, type-aware filtering, highlight cleanup, and settings persistence.