Helmut 4 - Streamdesginer

Guide

Software Documentation

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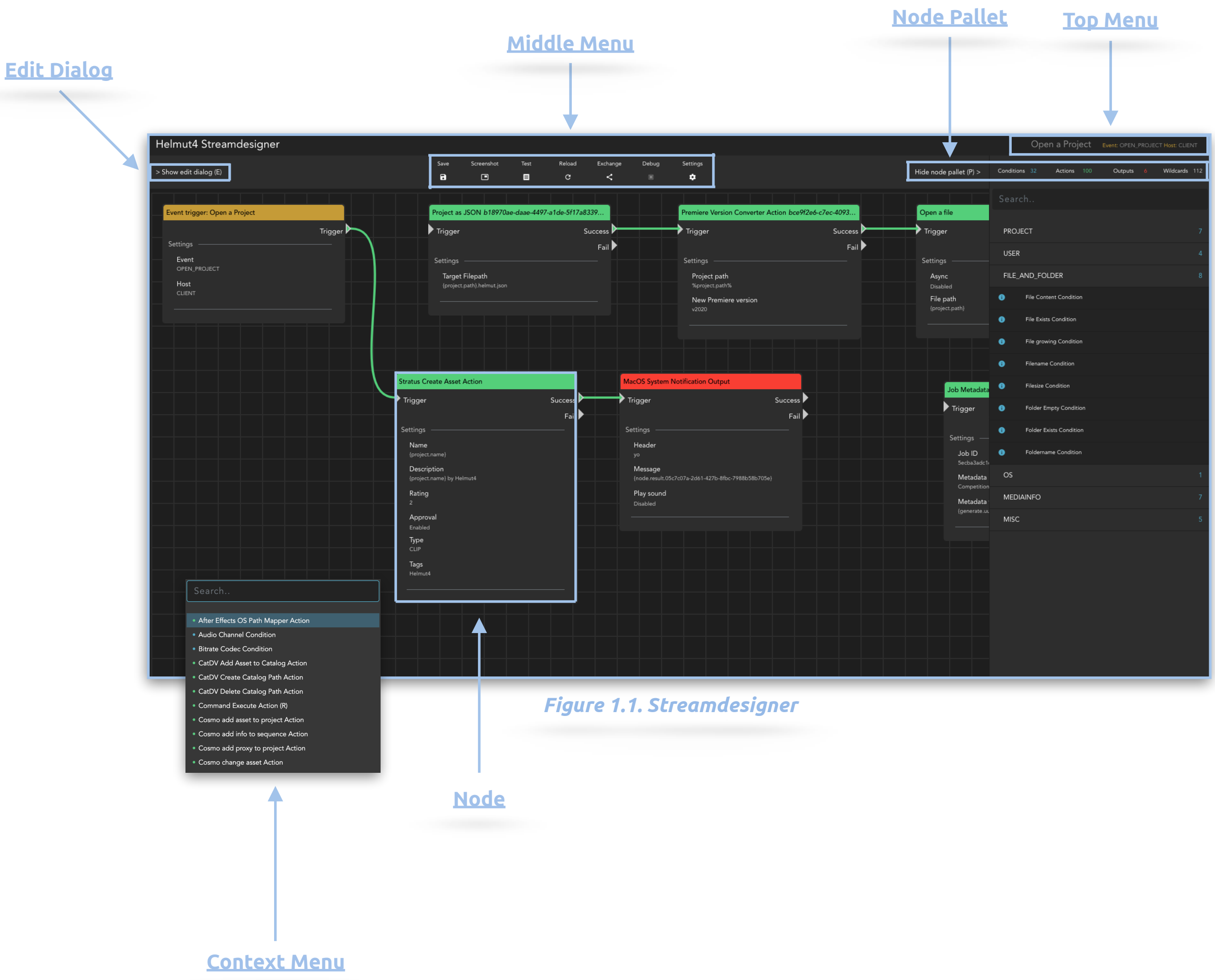
1. Introduction

The Streamdesigner is the configuration interface for Streams (workflows) in Helmut4. Streams are triggered by manual or automated events and will be execute on either the server or a client. It's not a workflow engine but a workflow configurator.

Always starting with a „Event Trigger" node, conditions, actions and outputs can be chained together to create powerful and flexible workflows that handle successful or failed results.

The output of a node can be connected by clicking and dragging with the mouse to the input trigger of a node. To make this easier, and because each node has only one input, it is possible to drag the wires to the desired node and release them there. The connection with the input trigger is set automatically.



Event: OPEN_PROJECT Host: CLIENT

Event
OPEN_PROJECT
Host
CLIENT

Target Filepath
{project.path}.helmut.json

Project path
%project.path%
New Premiere version
v2020

Async
Disabled
File path
{project.path}

Name
{project.name}
Description
{project.name} by Helmut4
Rating
2
Approval
Enabled
Type
CLIP
Tags
Helmut4

Header
yo
Message
{node.result.05c7c07a-2d61-427b-8fbc-7988b58b705e}
Play sound
Disabled

Job ID
5ecba3adc1
Metadata
Competition
Metadata
{generate.u

Figure 1.1. Streamdesigner

2. Overview

2.1. Node

A node in Helmut4's Streamdesigner can be a condition node, an action node as well as an output node. Condition nodes are coloured in blue, Action Nodes are coloured in green, and Output Nodes are coloured in red. Nodes can be connected by left-clicking on an output and connecting it to the input of another node. Optionally, the resulting connection can simply be dragged to another node. It then automatically connects to the entrance.

The changes to the parameters of a node made via the edit panel are displayed by default, but can be hidden by clicking on the arrow in the upper right corner of the node. This minimizes the node. This setting is saved per node when the stream is saved and is not overwritten when the node settings of all nodes are minimized or maximized via the Settings menu.

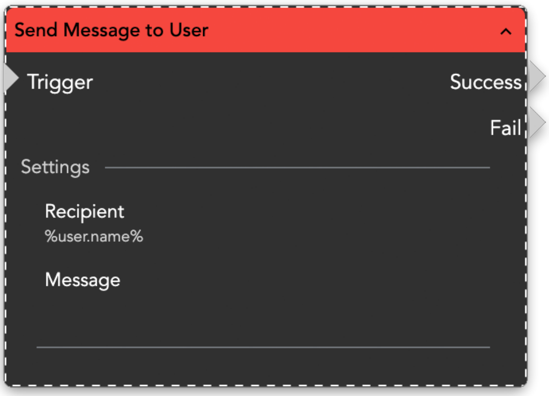
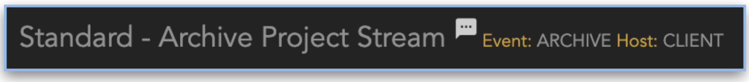


Figure 2.1. Action Node

2.2. Top Menu

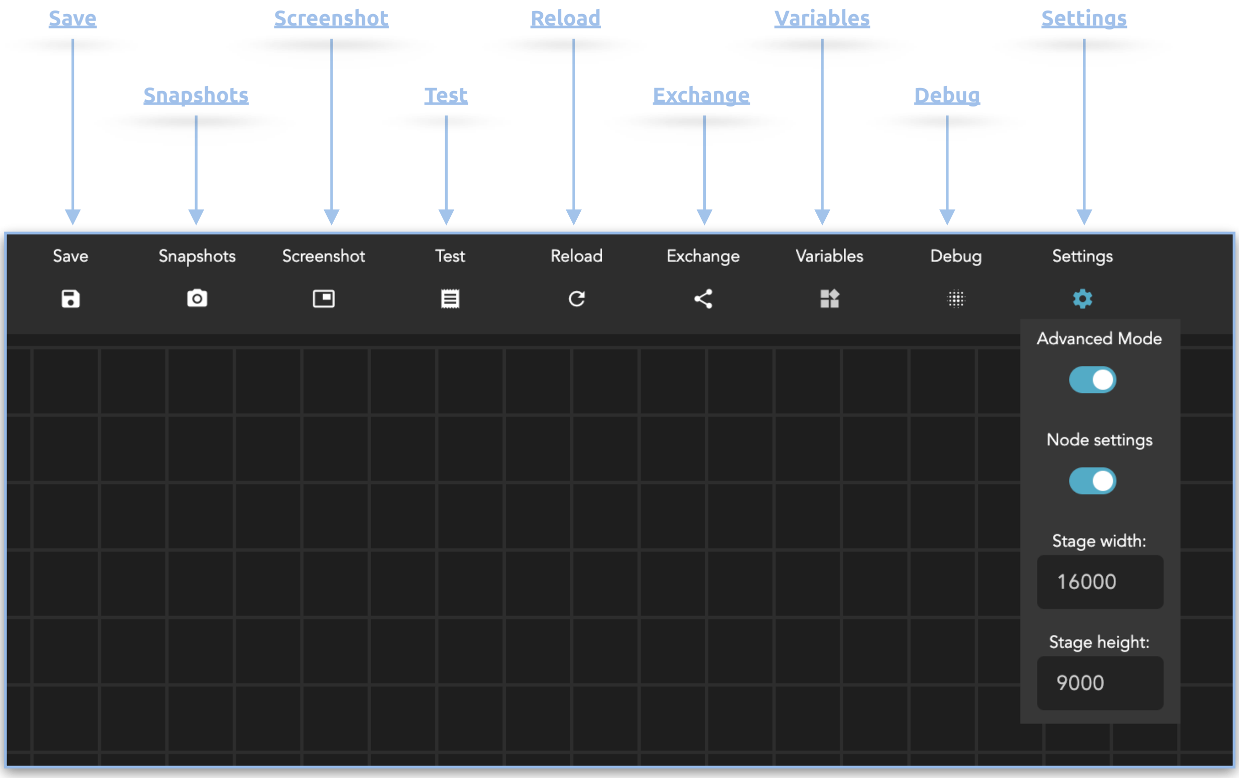
In the very top, you can find the name of the currently opened Stream, an icon to copy the Stream ID, and next to it you will find the event that will trigger this stream. Additionally it shows whether the Stream will run on the server or a client aka the host.



Standard - Archive Project Stream Event: ARCHIVE Host: CLIENT

2.3. Middle Menu

In the middle you can find various actions:



Advanced Mode ●

Node settings ●

Stage width: 16000

Stage height: 9000

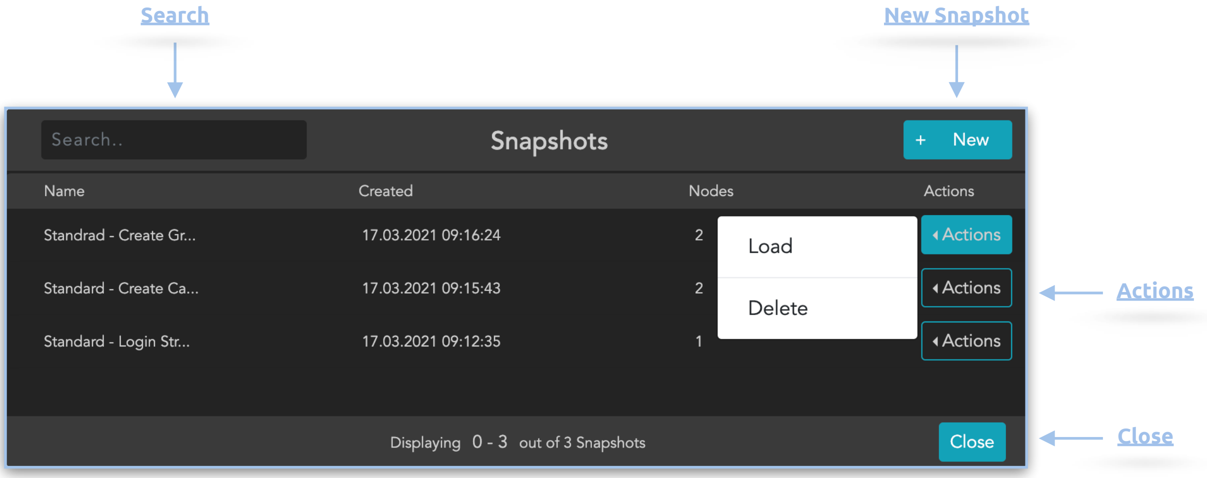
Figure 2.3.1. Middle Menu

2.3.1. Save

Save the current stream and makes it active.

2.3.2. Snapshots

Opens a dialog for managing snapshots. As the name suggests, snapshots are saved versions of a stream. A snapshot can be created and called up at any time. If a snapshot is called, it is loaded into the stream and the current settings of the stream are overwritten. The function is therefore not to be understood in terms of versioning, since a stream can only ever exist once in the system. It is a way of saving the state of a stream and calling it up again later. The following functions are available:



Name	Created	Nodes	Actions
Standrad - Create Gr...	17.03.2021 09:16:24	2	Actions
Standard - Create Ca...	17.03.2021 09:15:43	2	Actions
Standard - Login Str...	17.03.2021 09:12:35	1	Actions

Displaying 0 - 3 out of 3 Snapshots

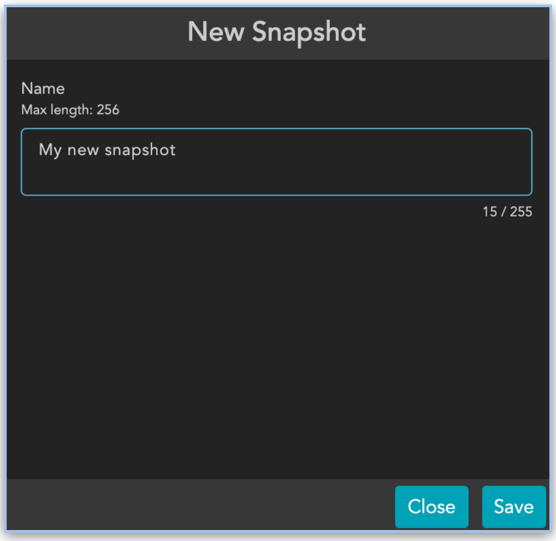
Figure 2.3.2. Snapshots

2.3.2.1. Search

Free text search to search for variables. It is possible to search for keys or values.

2.3.2.2. New Snapshot

Opens a dialog with which it is possible to add new snapshots. Opens a dialog with which it is possible to add new snapshots. The character length of the name is limited to 255 characters.



New Snapshot

Name
Max length: 256

My new snapshot

15 / 255

Figure 2.3.2. Add new snapshot

2.3.2.3. Actions

With the action button it is possible to load or delete an existing snapshot.

2.3.2.4. Close

Closes the Snapshot dialog.

2.3.3. Screenshot

Creates a screenshot of the stage that is holding all your nodes (available in Chrome only). The Size of the screenshot is related to the stage width and height which can be defined under “Settings”.

2.3.4. Test

Will test the stream with dummy data on the server (without saving it).

2.3.5. Reload

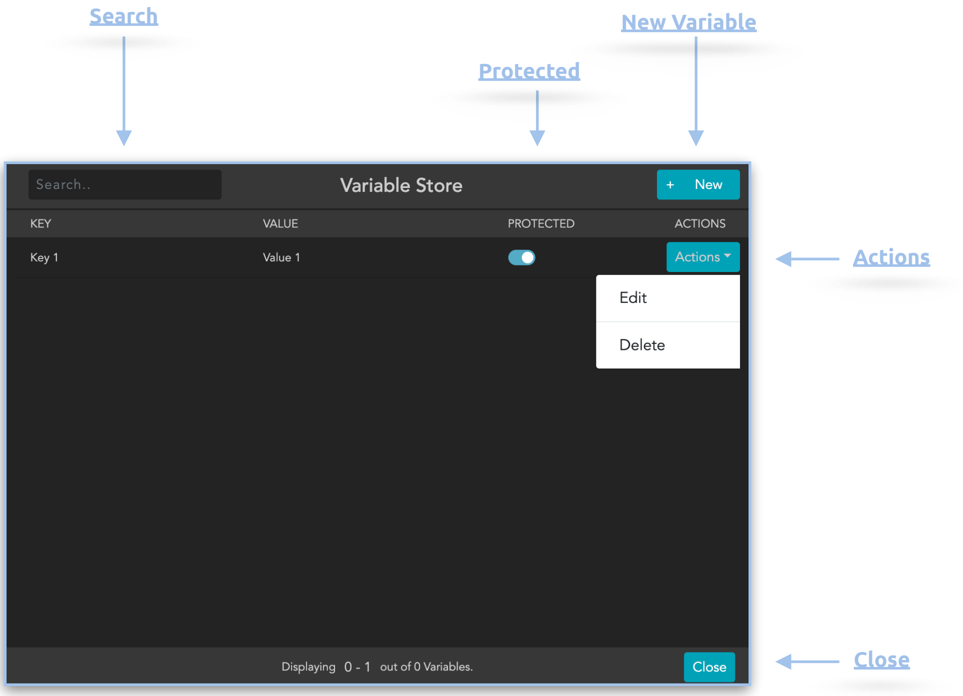
Resets the stream to the last point of save.

2.3.6. Exchange

Opens a dialog with the stream as Base64 representative. Use it to exchange it with others, for example in a support request. You can also paste streams in here to load them.

2.3.7. Variables

Opens a dialog for managing variables. In contrast to the variables that are managed via the Preferences menu, the variables managed here can also be controlled via streams, i.e. they can be created, changed or deleted via stream. They can also be used globally within each stream. There are three different action nodes available for this. For further information see document *WIP - H4 - Nodes and Wildcards Guide - en.pdf*



KEY	VALUE	PROTECTED	ACTIONS
Key 1	Value 1	●	Actions

Displaying 0 - 1 out of 0 Variables.

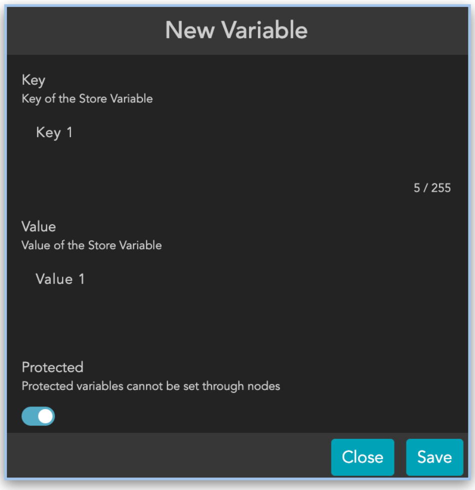
Figure 2.3.3 Variable Store

2.3.7.1. Search

Free text search to search for variables. It is possible to search for keys or values.

2.3.7.2. New Variable

Opens a dialog with which it is possible to add new variables. Opens a dialog with which it is possible to add new variables. The character length of each key and value is limited to 255 characters.



Key
Key of the Store Variable
Key 1
5 / 255

Value
Value of the Store Variable
Value 1

Protected
Protected variables cannot be set through nodes
●

Figure 2.3.4 New Variable Dialog

2.3.7.3. Actions

With the action button it is possible to edit or delete an existing variable.

2.3.7.4. Protected

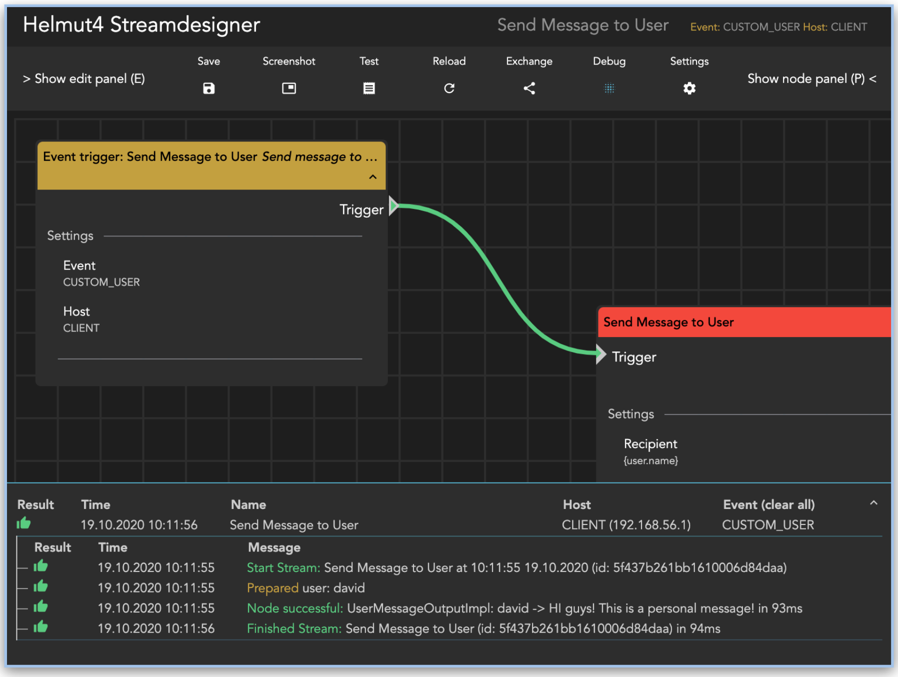
This toggle switch enables a variable to be protected globally. A protected variable cannot be changed via a stream, i.e. neither edited nor deleted.

2.3.7.5. Close

Closes the Variable Store dialog.

2.3.8. Debug

Will open a debug overlay that show the realtime output of streams, limited to the currently open one. The size of the debug overly can be extended to full screen by clicking on the arrow on the right side.



Event
CUSTOM_USER

Host
CLIENT

Recipient
{user.name}

Result	Time	Name	Host	Event (clear all)
👍	19.10.2020 10:11:56	Send Message to User	CLIENT (192.168.56.1)	CUSTOM_USER

Result	Time	Message
👍	19.10.2020 10:11:55	Start Stream: Send Message to User at 10:11:55 19.10.2020 (id: 5f437b261bb1610006d84daa)
👍	19.10.2020 10:11:55	Prepared user: david
👍	19.10.2020 10:11:55	Node successful: UserMessageOutputImpl: david -> HI guys! This is a personal message! in 93ms
👍	19.10.2020 10:11:56	Finished Stream: Send Message to User (id: 5f437b261bb1610006d84daa) in 94ms

Arrow

Figure 2.3.5 Debugger - Streamdesigner

2.3.9. Settings

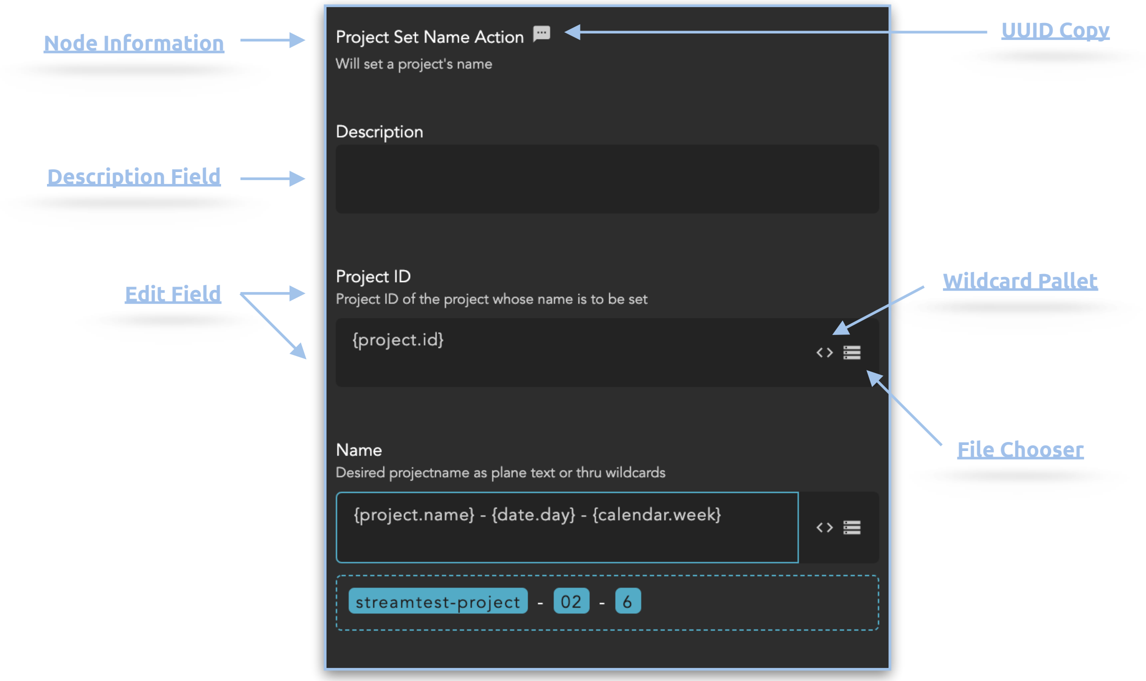
- **Advanced Mode:** When disabled, it will filter out the available nodes and wildcards to match the stream event. When enabled, it shows all available nodes and wildcards.
- **Node Settings:** Will hide all node details in the stage to reduce the height to a minimum and hides the option to minimise single nodes.
- **Width & Height:** Adjust the stage’s width and height. Very handy if you want to take a screenshot or do not have enough space.

2.4. Edit Dialog

On the left side you find the Edit Panel (if toggled on). You can use P to show/hide the dialog. Once you have selected a node by clicking on it, you can edit its content.

2.4.1. Node Information

On the top, you find the name of the node together with a small description. This description can be changed by using the Description Field.



Project Set Name Action

Will set a project's name

Description

Project ID

Project ID of the project whose name is to be set

{project.id}

Name

Desired projectname as plane text or thru wildcards

{project.name} - {date.day} - {calendar.week}

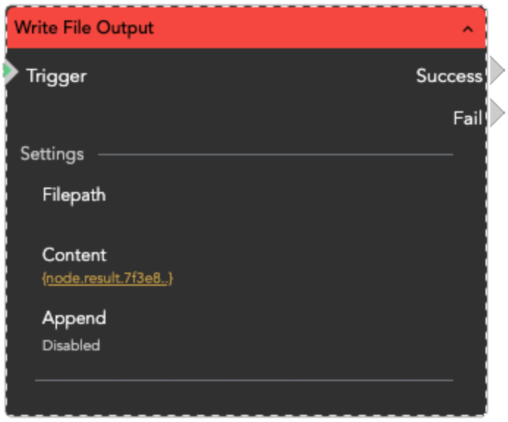
Figure 2.4.1 Edit Node Panel

2.4.2. Description Field

Th description field can be used to add your own comments. The first 25 characters will be shown in the the node's header on the stage.

2.4.3. UUID Copy ICON

Every Stream has a UUID (Unique ID). The UUID of a Stream can be copied to the clipboard by clicking on this icon. The UUID can be used in any node that follows after the node the ID was copied from. It is possible to use the wildcard {node.result.?} and replace the ? with the UUID. This wildcard will be replaced with the output of the node with the given ID. As soon as the {node.result.?} wildcard is used and the UUID from a specific node is added, it is possible to click on the highlighted wildcard to get redirected to the Node where the UUID is coming from. It is not possible to delete a node whose UUID is used in another node.



Write File Output

Trigger

Success

Fail

Settings

Filepath

Content
{node.result.7f3e8..}

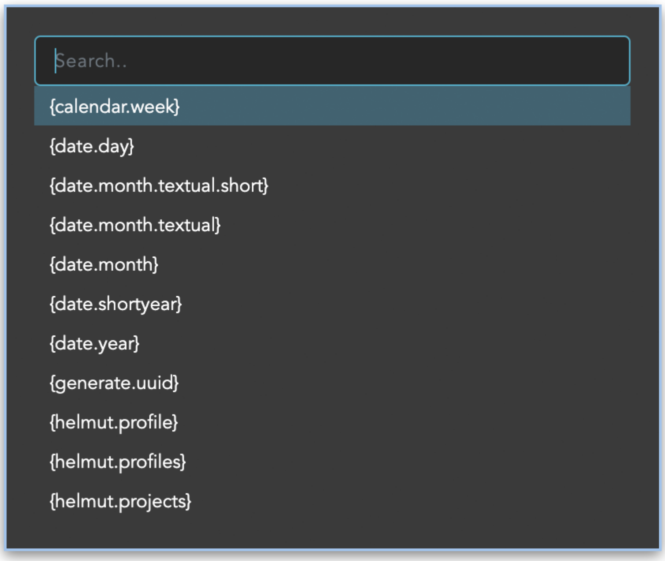
Append
Disabled

Figure 2.4.2. UUID used in wildcard

2.4.4. Edit Field

The next fields are dynamic depending on the parameters of the node. When focusing a text field, a realtime resolver of the input data appears right below it. This will show resolved wildcards within your input and hide itself once you click out of the input field.

2.4.5. Wildcard Pallet



Search..

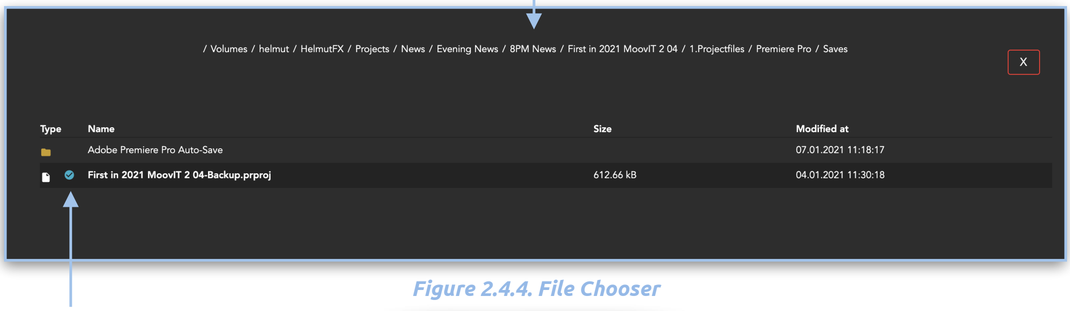
{calendar.week}
{date.day}
{date.month.textual.short}
{date.month.textual}
{date.month}
{date.shortyear}
{date.year}
{generate.uuid}
{helmut.profile}
{helmut.profiles}
{helmut.projects}

Figure 2.4.3. Wildcard Pallet

The icon next to the input field opens the placeholder palette. It has a type ahead function and the selected placeholder is placed at the cursor position in the edit field. If the selected wildcard contains a “?" (place holder for, for example, a path or another wildcard), this is automatically highlighted to speed up further processing.

2.4.6. File Chooser

This icon opens the Stream Designer File Chooser. It is possible to browse the volumes mounted under the Helmut4 host system and select individual files. This is particularly helpful when it comes to config files such as .epr's for the media encoder.



/ Volumes / helmut / HelmutFX / Projects / News / Evening News / 8PM News / First in 2021 MoovIT 2 04 / 1.Projectfiles / Premiere Pro / Saves

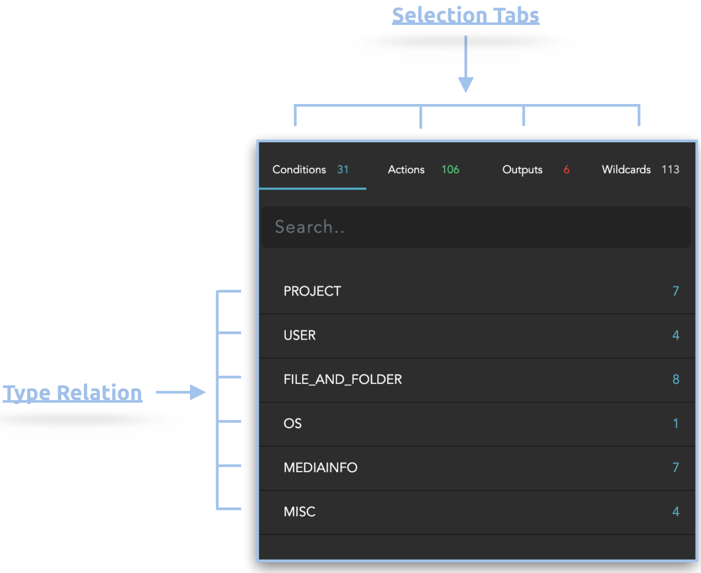
Type		Name	Size	Modified at
📁		Adobe Premiere Pro Auto-Save		07.01.2021 11:18:17
📄	✓	First in 2021 MoovIT 2 04-Backup.prproj	612.66 kB	04.01.2021 11:30:18

Figure 2.4.4. File Chooser

By clicking on the name of a folder it is possible to browse through the folder structure. Each selected folder is added to the breadrumb. By clicking on a folder name in the breadcrumb navigation it is possible to jump back. A click on the Select button selects the path of the corresponding file and transfers it to the edit field of the node.

2.5. Node Pallet

The node palette lists all available actions, conditions, outputs and wildcards and enables you to find the desired node / wildcard using a search field. An entered search leads to the number of available conditions / actions / outputs and wildcards being displayed directly.

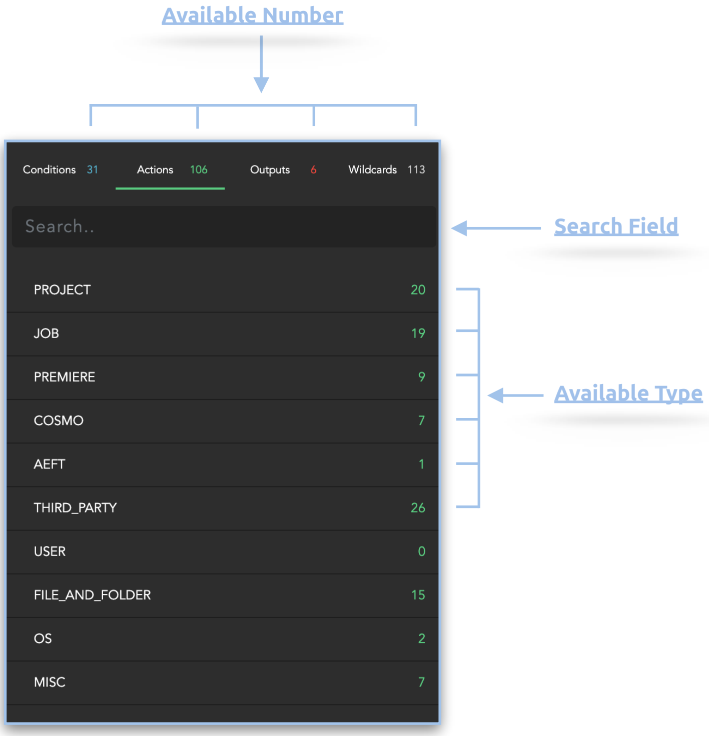


Conditions 31 | Actions 106 | Outputs 6 | Wildcards 113

Search..

PROJECT	7
USER	4
FILE_AND_FOLDER	8
OS	1
MEDIAINFO	7
MISC	4

Figure 2.5.1. Node Pallet Conditions



Conditions 31 | Actions 106 | Outputs 6 | Wildcards 113

Search..

PROJECT	20
JOB	19
PREMIERE	9
COSMO	7
AEFT	1
THIRD_PARTY	26
USER	0
FILE_AND_FOLDER	15
OS	2
MISC	7

Figure 2.5.2. Node Pallet Actions

2.5.1. Selection Tabs

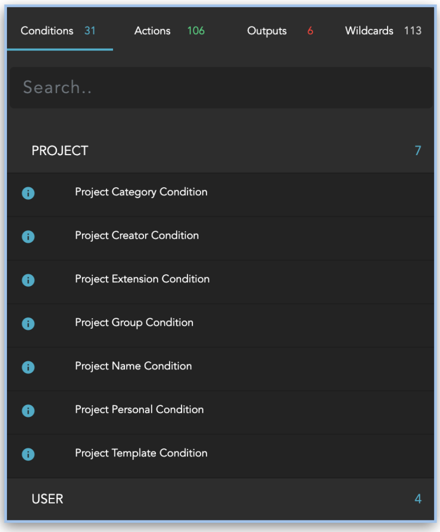
It is possible to switch between the individual tabs, whereby the affiliations are sorted by type. For example, there are 31 conditions in the system which are divided into 6 types. Project-related conditions, user-related conditions, file and folder-related conditions, etc.

2.5.2. Available Number

The number of available nodes / wildcards is displayed next to the name of each tab. This changes as soon as a search is applied. This makes it possible to immediately see how many nodes / wildcards are available according to the search.

2.5.3. Type Relation

If a tab is selected (for example Consitions) the corresponding types are displayed under the search field. This view changes per tab, since not all wildcards have the same types of affiliations.By clicking on of the types. If one of the types is clicked, another view opens, in which the actions / wildcards assigned to the type are displayed.



Conditions 31 | Actions 106 | Outputs 6 | Wildcards 113

Search..

PROJECT 7

- Project Category Condition
- Project Creator Condition
- Project Extension Condition
- Project Group Condition
- Project Name Condition
- Project Personal Condition
- Project Template Condition

USER 4

Description Icon

Figure 2.5.3. Type related wildcards

2.5.3.1. Description Icon

If you move the mouse over this icon, a description field opens in which the individual parameters of the respective node are displayed, as well as the function of the node and what it can be used for.

2.5.4. Search Field

Free text field to search for a wildcard / node. As soon as something is entered in this field, all tabs are filtered and the number of results per tab is automatically adjusted. The affiliation by type is then no longer visible.

2.5.5. Available Type

The number next to the respective type shows how many nodes / wildcards are available for this type.

2.6. Shortcuts

The following shortcuts are available in the Streamdesigner:

- **P**: Show / Hide the Node Panel: On the right side a panel can be displayed in which all existing nodes and wildcards are displayed. From this panel, the individual Nodes as well as the Wildcards are dragged and dropped into the Stream Designer window.
- **E**: Show / Hide the Edit Panel: On the left side a panel can be displayed in which a selected node can be modified to your needs.
- **Ctrl + S:** Saves a stream. Each stream must be saved.
- **Ctrl + O:** Load a stream
- **Ctrl + C:** Copy one or multiple complete nodes.
- **Ctrl + V:** Create a new node from the clipboard, if one previously node was copied.If several nodes were previously selected, they will be inserted while maintaining their relative position to each other.
- **Ctrl + K:** Automatically sorts all nodes in the stage that are connected to each other. After selecting one or more nodes via shift + right mouse button, this function is only applied to the selected nodes.This can not be reversed.
- **Ctrl + E:** This allows the content of the entire stream to be exported as text to copy the entire stream.
- **Ctrl + T**: When no input field in the edit panel is focused, will open the command pallet. If an input field in the edit panel is focused, the wildcard panel will open.
- **DEL**: Deletes a selected node or link
- **T: Testsuite:** Tests the stream for functionality.
- **Delete/Backspace:** Deletes a node

Each node has an input trigger and a positive and negativ output. Outputs can be connected to input triggers via mouse. An existing connection can be resolved by clicking and deleting it (Delete key).

2.7. Operation of the stage

- **Mouse wheel:** With the mouse wheel it is possible to zoom in and out of the stage.
- **Right mouse key:** With the right mouse button, a contact menu opens in which 3 different operations can be carried out. These are:
  - Mode 1: Find and open action nodes
  - Mode 2: Execute menu functions (middle menu)
  - Mode 3: Switch between streams

2.7.1. Right mouse key context menu

The three different function modes of the search field can be changed using the tab key. If the text field is empty, you are in Mode 1: Find and open action nodes. If the text field begins with an arrow, you are in Mode 2: Execute menu functions (middle menu). If the text field begins with a colon, you are in Mode 3: Switch between streams.

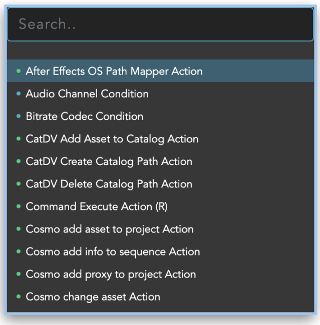

Search..
After Effects OS Path Mapper Action
Audio Channel Condition
Bitrate Codec Condition
CatDV Add Asset to Catalog Action
CatDV Create Catalog Path Action
CatDV Delete Catalog Path Action
Command Execute Action (R)
Cosmo add asset to project Action
Cosmo add info to sequence Action
Cosmo add proxy to project Action
Cosmo change asset Action

Figure 2.7.1 Mode 1

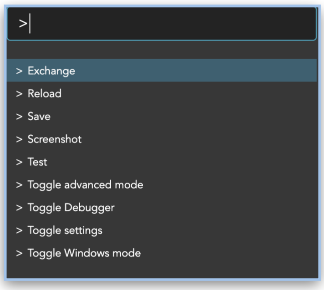


Figure 2.7.2 Mode 2

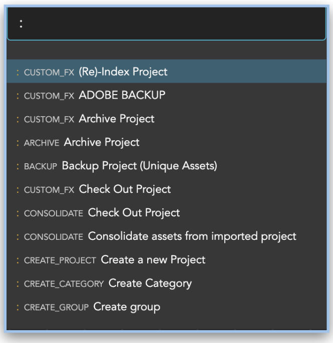

:
: CUSTOM_FX (Re)-Index Project
: CUSTOM_FX ADOBE BACKUP
: CUSTOM_FX Archive Project
: ARCHIVE Archive Project
: BACKUP Backup Project (Unique Assets)
: CUSTOM_FX Check Out Project
: CONSOLIDATE Check Out Project
: CONSOLIDATE Consolidate assets from imported project
: CREATE_PROJECT Create a new Project
: CREATE_CATEGORY Create Category
: CREATE_GROUP Create group

Figure 2.7.3 Mode 3

2.7.1.1. Context menu mode 1

A node can be searched directly via the search field, provided that the corresponding name is known. The search field also has a type ahead function. It is possible to scroll through the displayed action nodes using the arrow keys.

2.7.1.2. Context menu mode 2

A menu function can be searched for directly via the search field. The search field also has a type ahead function. With the arrow keys it is possible to scroll through the displayed menu items and to execute the desired one with a mouse click or with the enter key.

2.7.1.3. Context menu mode 3

A stream can be searched directly via the search field, provided the corresponding name is known. The search field also has a type ahead function. Using the arrow keys, it is possible to scroll through the available streams and execute the desired one with a mouse click or with the enter key. This will open a popup dialog asking if you want to see the current stream.

2.8. Event Trigger

Each stream (Workflow) is triggered by an event. This event can be a server-side or client-side event, and can be executed manually as well as automatically via Helmut's REST API. If an event trigger is triggered (example: Create Project in the client), the stream, ie the workflow, is executed by the host selected in the event. An event can trigger more than one stream but all streams trigged by one event have to be successful.

2.8.1. Event Trigger HFX

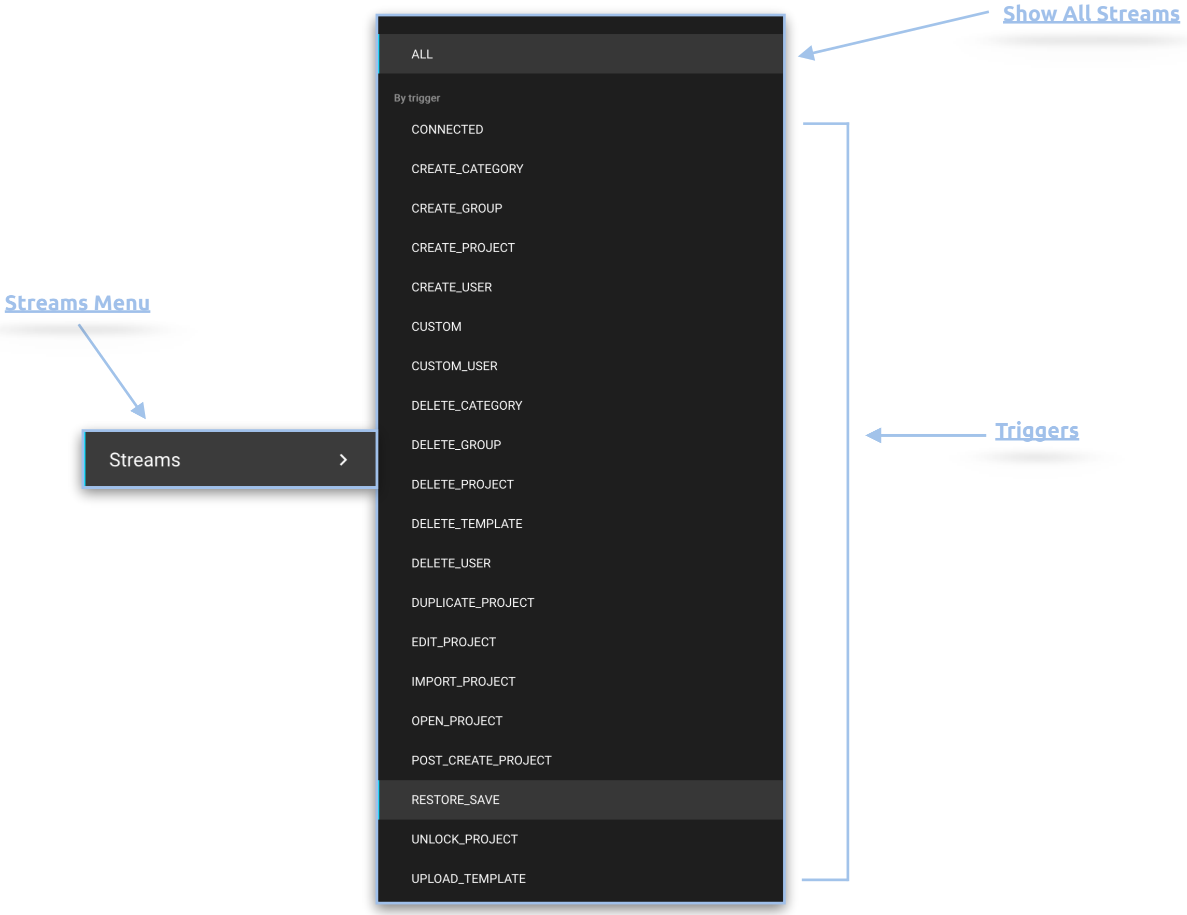


Figure 2.8.1. HFX Event Trigger

2.8.1.1. Connected

Is executed as soon as a user logs on and the client is connected to the server.

2.8.1.2. Create category

Is executed as soon as a category is created.

2.8.1.3. Create group

Is executed as soon as a group is created.

2.8.1.4. Create project

Is executed as soon as a project is created.

2.8.1.5. Create user

Is executed as soon as a user is added. (manually or automatically)

2.8.1.6. Custom FX

Is executed as soon as a custom stream is executed via the Action menu (projects view)

2.8.1.7. Custom User

Is executed as soon as a custom user stream is executed via the users Action menu.

2.8.1.8. Delete Category

Is executed as soon as a category is deleted.

2.8.1.9. Delete Group

Is executed as soon as a group is deleted.

2.8.1.10.Delete Project

Is executed as soon as a project is deleted.

2.8.1.11.Delete Template

Is executed as soon as a template is deleted.

2.8.1.12.Delete User

Is executed as soon as a user is deleted.

2.8.1.13.Delete Disconnected

Is executed as soon as the client application is disconnected from the server. If streams are defined for this trigger, the client executes them before it is finally disconnected.

2.8.1.14.Duplicate Project

Is executed as soon as a project is duplicated. (Action Menu)

2.8.1.15.Edit Project

Is executed as soon as a project is edited. (Action Menu)

2.8.1.16.Import Project

Is executed as soon as a project is imported. This applies to projects that are imported via the "Add Project" dialog as well as via the API.(Action Menu)

2.8.1.17.Open Project

Is executed as soon as a project is opened.

2.8.1.18.Post Create Project

Is executed as soon as a project entry has been successfully added to Helmut's database (Stream attached to create project trigger)

2.8.1.19.Post Create Project

Is executed as soon as project is restored. (Action Menu)

2.8.1.20.Unassigned

If a stream should be executed from within another stream (Stream Execute Generic Stream Action) and should not be available via any other FX triggers, it can be created as an unassigned stream.

2.8.1.21.Unlock Project

Is executed as soon as project is unlocked. Only available if the project was previously locked by using a lock node.

2.8.1.22.Upload Template

Is executed as soon as template is uploaded.

2.8.2. Event Trigger HIO

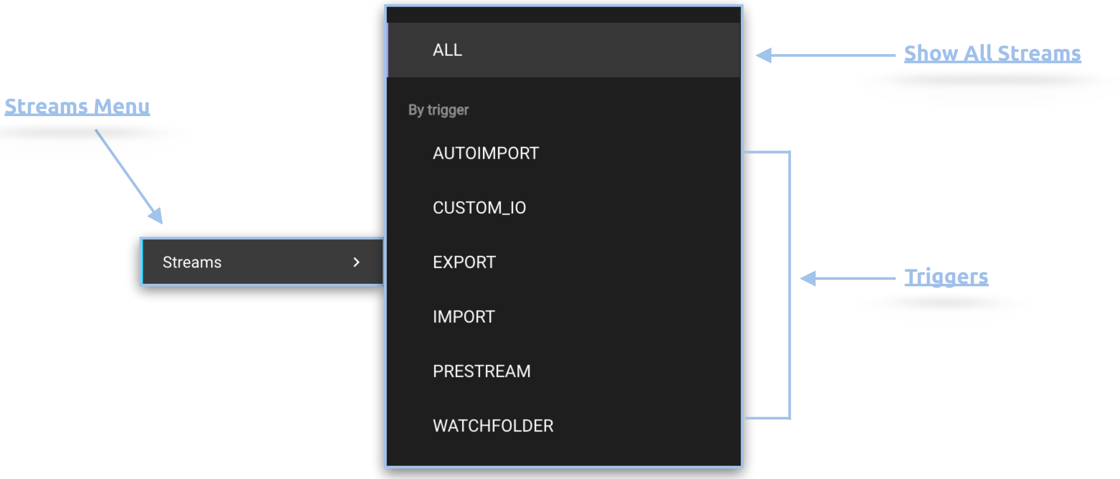


Figure 2.8.2. HIO Event Trigger

2.8.2.1. Autoimport

Is executed as soon as a file is imported into a Premiere pro Project (Autoimport profile needs to match the projects group)

2.8.2.2. Custom IO

Is executed as soon as a custom io stream is executed via the users Action menu. (Panel Extension)

2.8.2.3. Export

Is executed as soon as a sequence export is executed. (Panel Extension)

2.8.2.4. Import

Attention: Not assigned in 4.0.5.

2.8.2.5. Pre Stream

Is executed as soon as a Pre Stream is existing within any profile

2.8.2.6. Watchfolder

Is executed as soon as a Watchfolder Stream is existing within any profile.

2.8.3. Event Trigger HCO

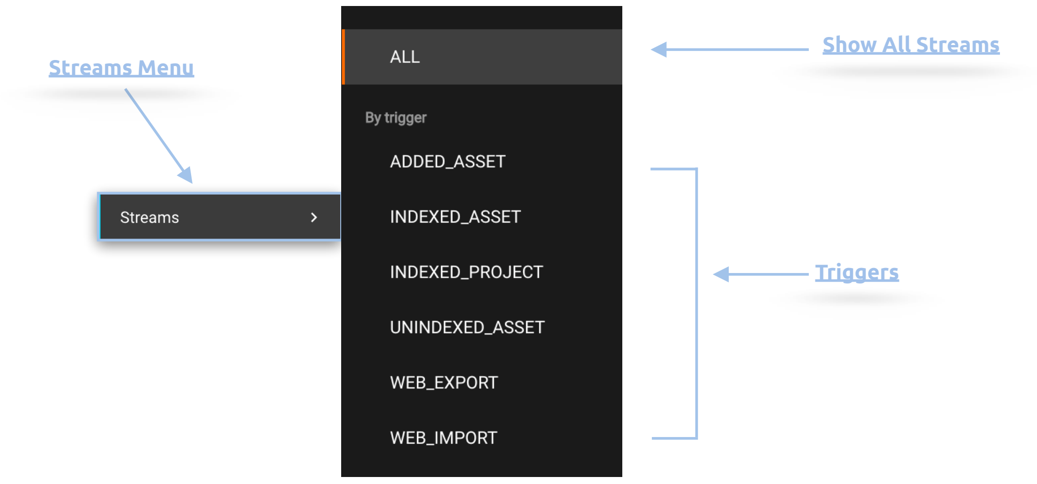


Figure 2.783. HCO Event Trigger

2.8.3.1. Added Asset

Is executed as soon as an asset is added to Cosmo's database

2.8.3.2. Indexed Asset

Is executed as soon as a new asset is found while indexing a project.

2.8.3.3. Indexed Project

Is executed as soon as a complete project is indexed, and therefore Cosmo's database is updated.

2.8.3.4. Unindexed Asset

Is executed as soon as it is determined during the comparison of the project status in the Cosmo database with the project status of the indexing of a project that an asset has been removed from the Premiere Pro project.

2.8.3.5. Web Export

Is executed as soon as a sequence or an asset is exported via Cosmo (Action Menu)

2.8.3.6. Web Import

Is executed as soon as an asset has been uploaded via Cosmo (Upload Asset Dialog)

2.8.4. Event Trigger HHK

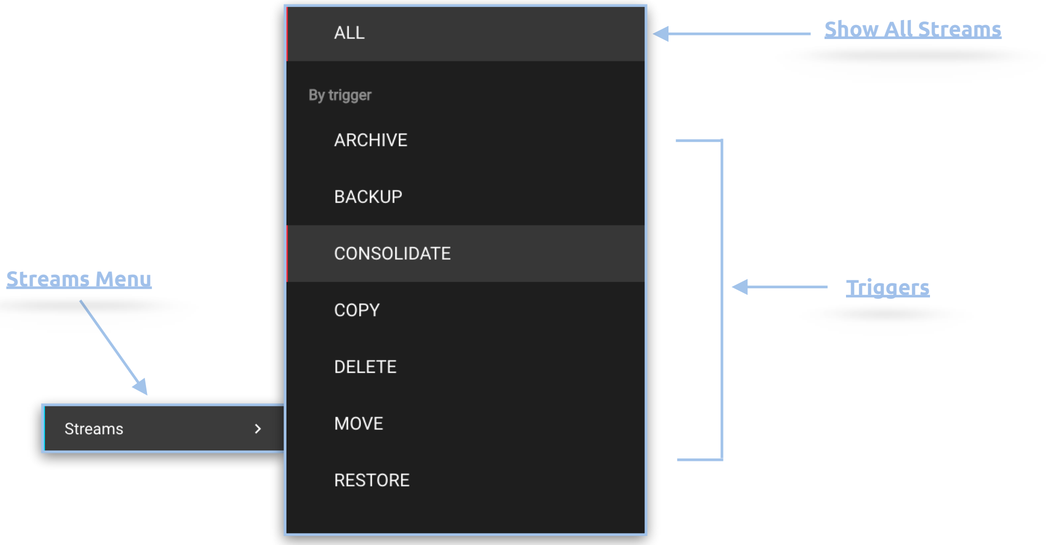


Figure 2.8.4. HHK Event Trigger

2.9. Actions

Each stream (workflow) needs at least one action node to work. Each node has a trigger input, as well as a success, and a failed output. Each node can run synchronously or asynchronously. This is useful when, for example, a node deletes a project, copies folder contents or executes a transcode via Adobe Media Encoder. The deletion of the project may be very fast, while moving the folder contents is not calculable because folder sizes are sometimes unpredictable. In order not to have to wait so long until the move was carried out to process more nodes, the move can be performed asynchronously, as a result of which the entire stream no longer has to run linearly.

The order of the nodes is basically irrelevant, but there are logical dependencies that result from the function of the node and its configuration. For example, if you want to copy an object to a folder that is itself a subfolder, the subfolder must be created with another node that was previously executed. Describing all eventualities here is basically impossible.

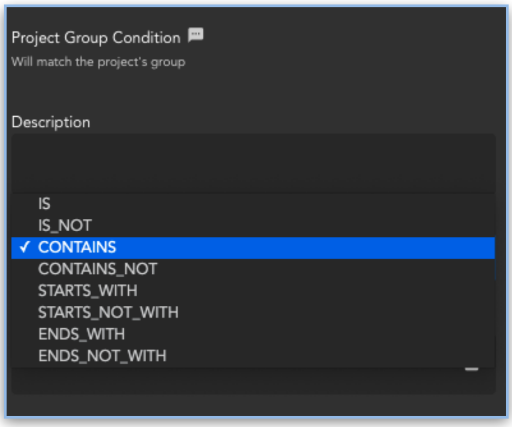
The available actions are accessible at any time via http://please_add_server_ip_adress_in_here/streamdesigner/index.html#/ and are listed below:

2.10. Conditions

Each stream (workflow) can be extended by conditions and made more complex. For example, using a Project Team Condition, it is possible to realise all workflows that are the same for an event trigger, but different for each individual team, within one stream. A stream does not necessarily have to have a condition because it works without it.

For all conditions, they have a trigger input as well as a success and failed output and filter according to the following pattern:

- Is
- is_not
- Contains
- Contains_not
- Starts_with
- Starts_not_with
- End_with
- Ends_not_with



Project Group Condition
Will match the project's group

Description

IS
IS_NOT
✓ CONTAINS
CONTAINS_NOT
STARTS_WITH
STARTS_NOT_WITH
ENDS_WITH
ENDS_NOT_WITH

Figure 2.10.1. Condition Node

2.11. Outputs

Within a stream, outputs can be used to send information about the stream as output either at the end of the stream or after a single or multiple nodes. These are generally logs.

2.12. Wildcards

One of the great strengths of Helmut4 in combination with streams is the possibility to dynamically set paths via wildcards and / or manage them globally and use them in various places. These include, for example, project and template paths, or user names, team names, categories, presets, etc.

The use of wildcards within streams opens up the possibility of extremely complex workflows, which are again only partially documented, since the resulting possibilities are simply too many.

The following are the available wildcards. As with all conditions, the membership of corresponding event triggers is also described for each wildcard.

Wildcards are automatically filtered within the stream engine depending on the selected event trigger, so only the wildcards that make sense in the context of the event are suggested. The corresponding events are already assigned to the respective wildcard.