Using Claris Connect with your FileMaker data.

Introducing Claris Connect.

Claris Connect™ is a cloud-smart workflow automation platform that allows you to create entire workflows by connecting applications and services together. Claris Connect is built on the concept of flows, used to automate everyday business tasks and processes. Flows are automations that use two or more components. A component can be a Claris Connect utility or a connector to a third-party application or service.

Connecting to your FileMaker data using connectors.

Besides providing connectivity and integration with popular third-party applications and services, Claris Connect provides connectors to easily integrate with the data in your FileMaker apps.

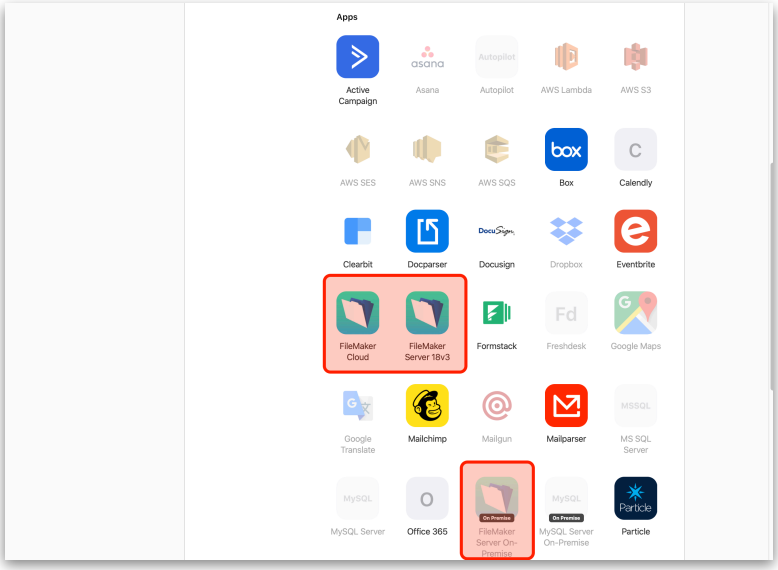
These connectors include support for:

- Claris FileMaker Cloud® 2.18.x
- Claris FileMaker Cloud for AWS 1.18.x
- Claris FileMaker™ Server 18.0.3

Also, if your FileMaker Server resides in a secure location without a direct Internet connection, an on-premise agent is available as a gateway to provide access to your FileMaker data.

This document provides steps on how to enable FileMaker apps to integrate with web apps and services using Claris Connect. Topics include:

- Using the FileMaker Cloud and FileMaker Server connector
- Using the FileMaker Server on-premise connector



The initial step in any flow is a trigger, an event that initiates a flow. Subsequent steps in a flow are actions. After you create and enable a flow, each time the trigger event occurs, Claris Connect automatically performs the flow.

Below is a table representing what FileMaker connectors support:

Connector type	Can be used as a trigger	Can be used as an action
FileMaker Cloud	X	X
FileMaker Server (host via the Internet)	X	X
FileMaker Server on-premise		X

General considerations when connecting to your FileMaker data.

Regardless of the method you are using to connect to your FileMaker data, some general considerations are essential to understand:

- Claris Connect supports and requires FileMaker ID. The FileMaker ID integrated sign-on system authenticates Claris Connect users and users of FileMaker apps hosted by FileMaker Cloud.
- Your data needs to be accessible / hosted on the Internet. The exception are FileMaker Server and MySQL instances behind a firewall using the appropriate on-premise agent from Claris.
- You must enable support for the FileMaker Data API on the server (FileMaker Cloud and FileMaker Server) you are accessing.

- Your FileMaker app(s) need to have the FileMaker Data API extended privilege (fmrest) enabled.
- A valid, 3rd-party SSL certificate must be used on the server you are trying to access. The default certificate that comes with FileMaker Server does not satisfy the SSL certificate requirement.

Using the FileMaker Connectors.

The behavior, functionality and configuration of the FileMaker Cloud and FileMaker Server connectors are similar.

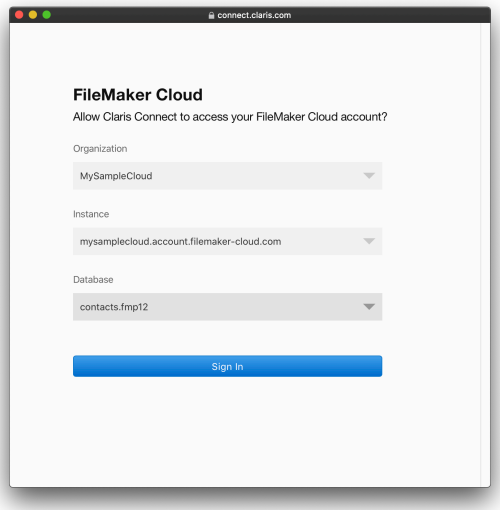
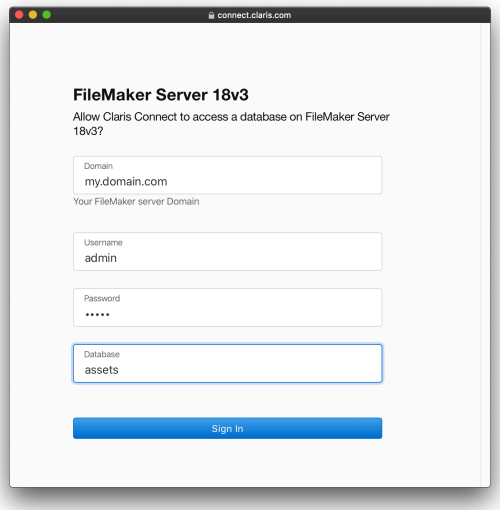
Both the FileMaker Cloud and FileMaker Server connectors can be used as a trigger or action in your flows.

Supported triggers	Supported actions
• Script trigger	• Create record • Edit record • Get record by ID • Delete record • Search record • Execute script

Configuring the FileMaker Cloud and FileMaker Server connector.

Before you can use either the FileMaker Cloud or FileMaker Server connector as a trigger or an action in a flow, you must first connect to your FileMaker app.

The information you are required to provide differs depending on the connector you are configuring. Below is an example of both connectors and the information you need to provide:

Connecting to FileMaker Cloud	Connecting to FileMaker Server
	
Information needed: • Organization • Instance • Database Because FileMaker Cloud and Claris Connect utilize FileMaker ID, you are automatically authenticated. You do not need to specify login credentials.	Information needed: • Domain (DNS name) • Username • Password • Database (extension optional) This information will have to be typed in manually.

Once connected, you can use either the FileMaker Cloud or FileMaker Server connector as either a trigger or an action.

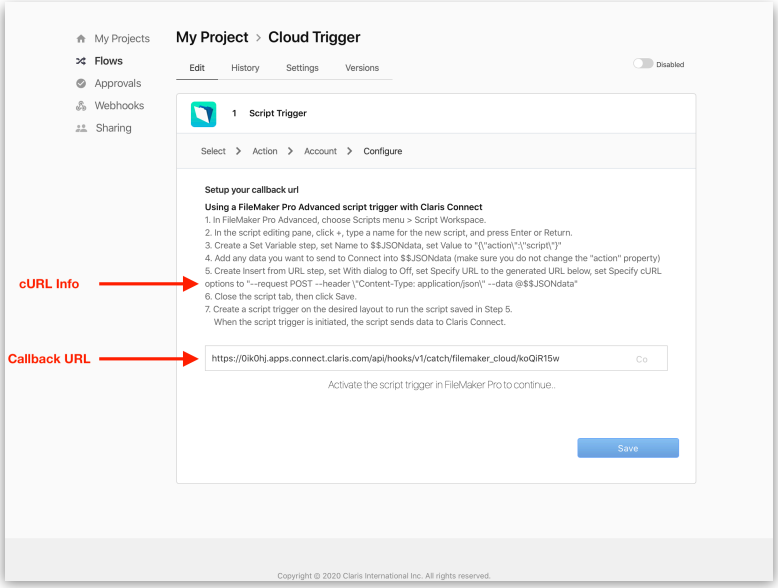
Using the FileMaker connectors as a trigger.

Setting up either the FileMaker Cloud or FileMaker Server connector to be used as a trigger requires that you make simple modifications to your hosted FileMaker app, which include building a script. Familiarity with JSON is recommended when setting up FileMaker Cloud or FileMaker Server as a trigger.

> It is beyond the scope of this document to provide detailed assistance in writing properly-formatted JSON.

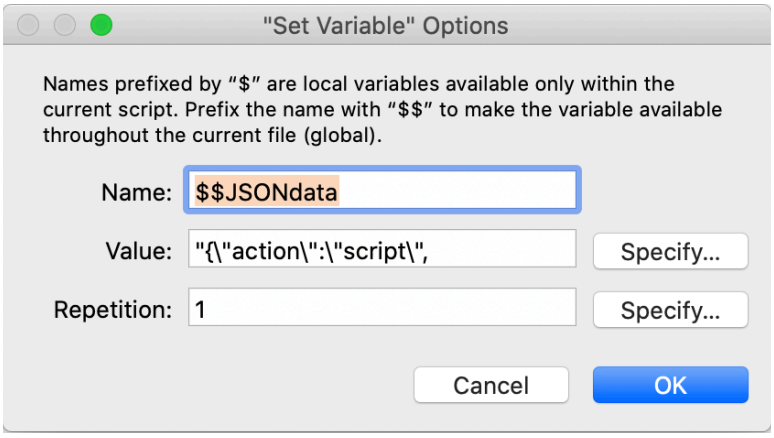
When you add the FileMaker Cloud or FileMaker Server connector as a trigger, the configuration directions are displayed on-screen, including a special URL known as a

callback URL. Make a note of this callback URL as it is needed when setting up either connector as a trigger.



To configure either the FileMaker Cloud or FileMaker Server connector as a trigger, follow these summarized steps:

1. In FileMaker Pro Advanced, open the **Script Workspace** and create a new script. The script can be named anything you want.
2. Add a **Set Variable** step to your script. Name the variable **$$JSONdata**. Set the **Value** of the variable to "{\"action\":\"script\"}".

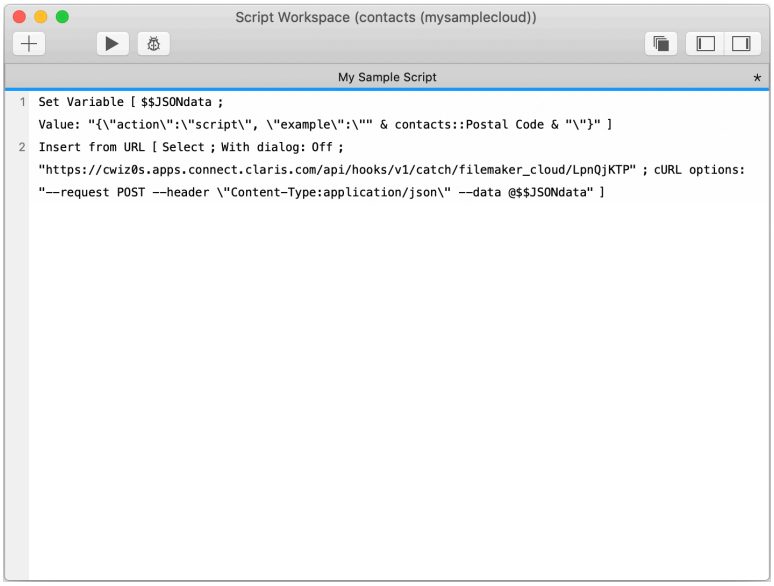


Add any data you want to send to Claris Connect into the $$JSONdata variable formatted as JSON key pairs. Make sure not to change the "action" property when doing so.

3. Add an **Insert from URL** step to your script using the following parameters:

Script option	Description
With dialog	Off
Specify URL	The callback URL that is provided / displayed as part of the FileMaker Cloud connector instructions (see above.) This URL is unique to this flow and should not be used in other flows as a trigger.
Specify cURL options	The cURL information provided / displayed as part of the FileMaker Cloud connector instructions (see above.) This information will be the same for all flows that use the FileMaker Cloud connector as a trigger.

Here is an example of what the script might look like:

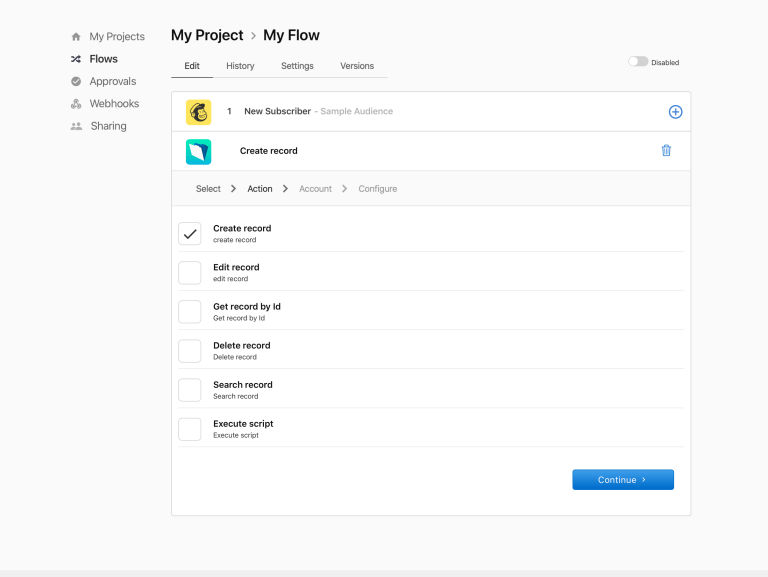


4. Save the script and exit the **Script Workspace**.
5. Create a script trigger on the desired layout to run your saved script. When executed, the script sends the data defined in Step 2 to Claris Connect.

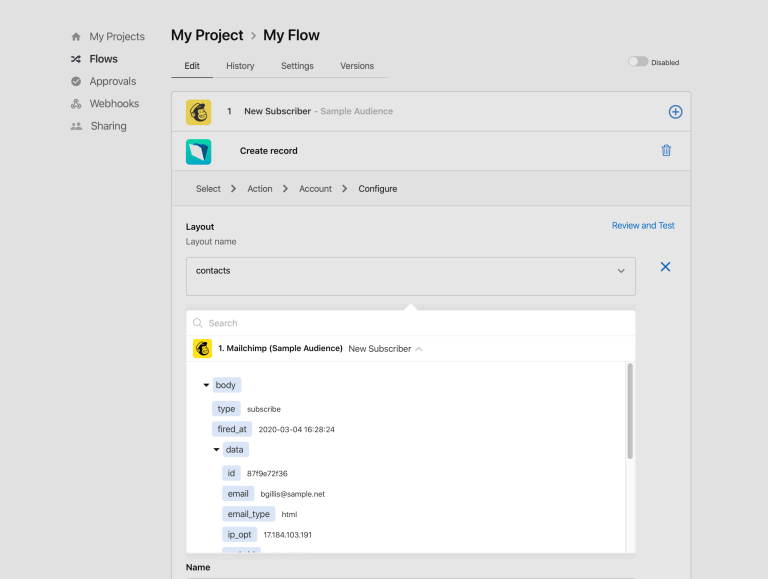
While the on-screen directions specify the use of a script trigger, a manually executed script or a script attached to a button will work just as well.

Using the FileMaker Cloud or FileMaker Server connector as an action.

Using the FileMaker Cloud or FileMaker Server connector as an action in your flows is straightforward. Begin by selecting a supported action you want to perform and click **Continue.**



You are prompted to choose a layout within your FileMaker app. Only the fields that are on the selected layout are available for use in your flow.



Consider creating a special layout in your FileMaker app with only the fields that you want available to your flow(s).

At this point, you can access step data from previous steps to interact with your FileMaker app.

Using the FileMaker Server on-premise connector.

Use the FileMaker Server on-premise connector when accessing data that is behind a firewall or otherwise not connected to the Internet. The current version of Claris Connect provides on-premise connectors for:

- FileMaker Server 18.0.3 (or later)
- MySQL 8.x

This document only covers how to configure and use the FileMaker Server on-premise connector.

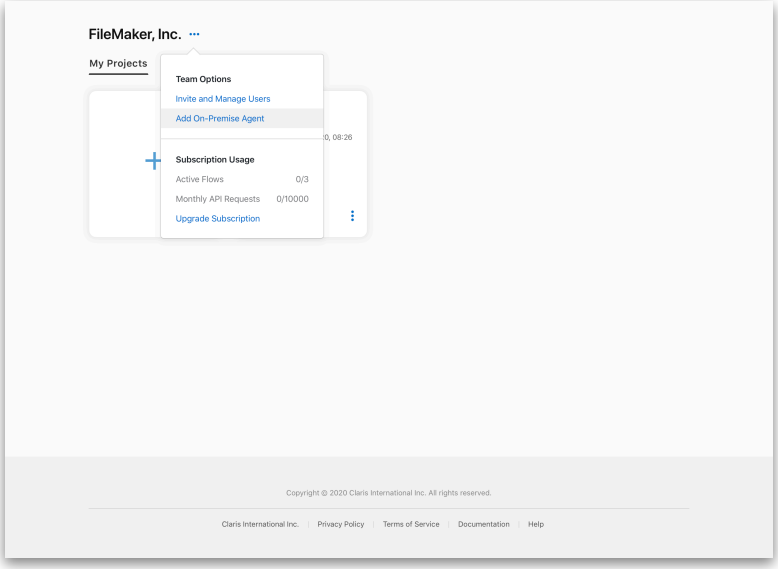
The FileMaker Server on-premise connector only supports being used as an action in a flow:

Supported triggers	Supported actions
• None / Not supported at the time	• Create record • Edit record • Get record by ID • Delete record • Search record • Execute script

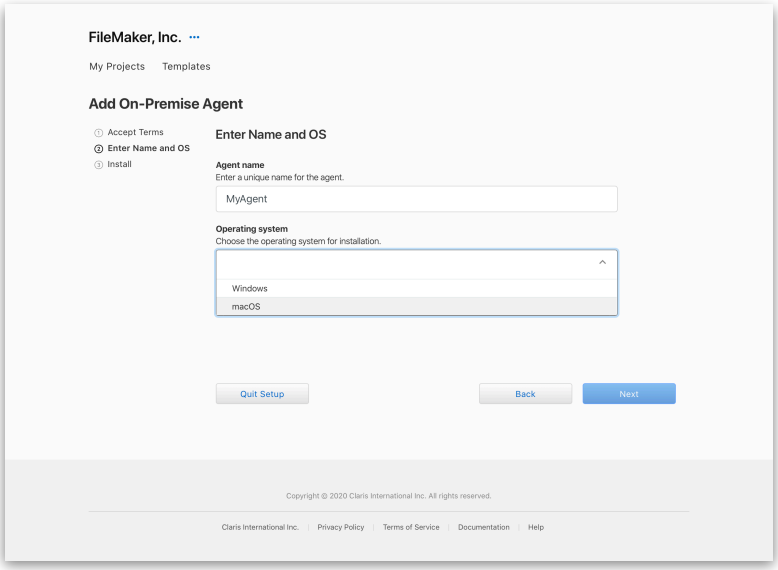
Installing the FileMaker Server On-premise connector.

Before you can use the FileMaker Server on-premise connector as part of a flow, the agent must be downloaded and configured.

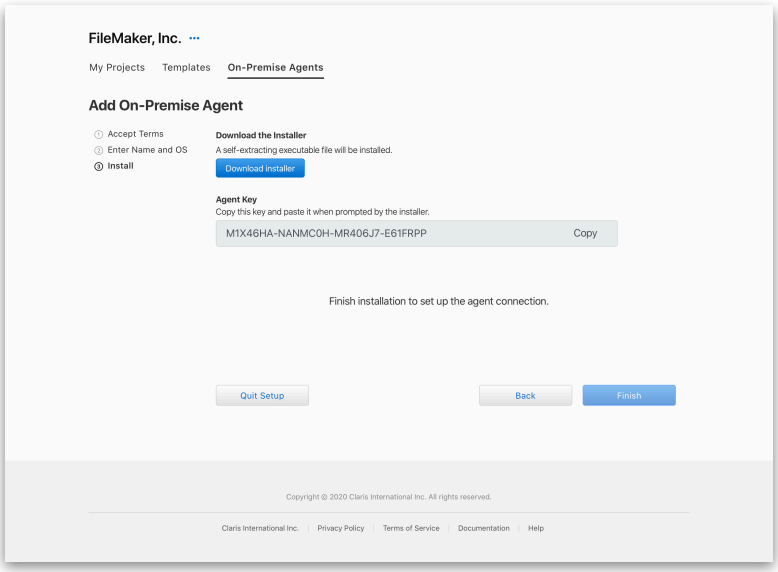
From the Claris Connect Homepage, click the **Options** menu next to your team name (displayed at the top left) and select **Add On-premise Agent**.



The **Add On-premise Agent** wizard appears and walks you through creating a unique, user-defined agent name as well as prompting you to select the version of the on-premise agent you want to download before clicking **Next**.

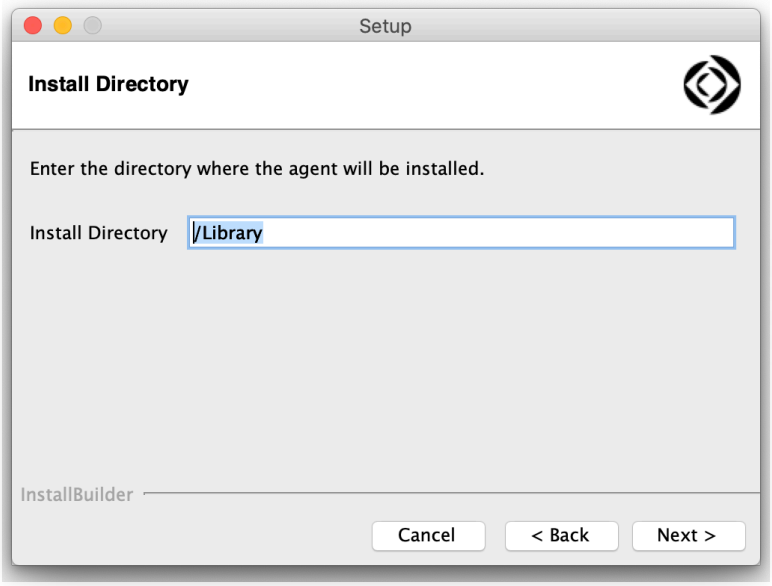


The agent key is displayed. The agent key is used during the installation of the on-premise agent and when using the on-premise agent in a flow. Click **Download Installer** to download the selected agent installer.



Navigate to your **Downloads** folder and copy and run the installer on the machine where you want to install the on-premise agent.

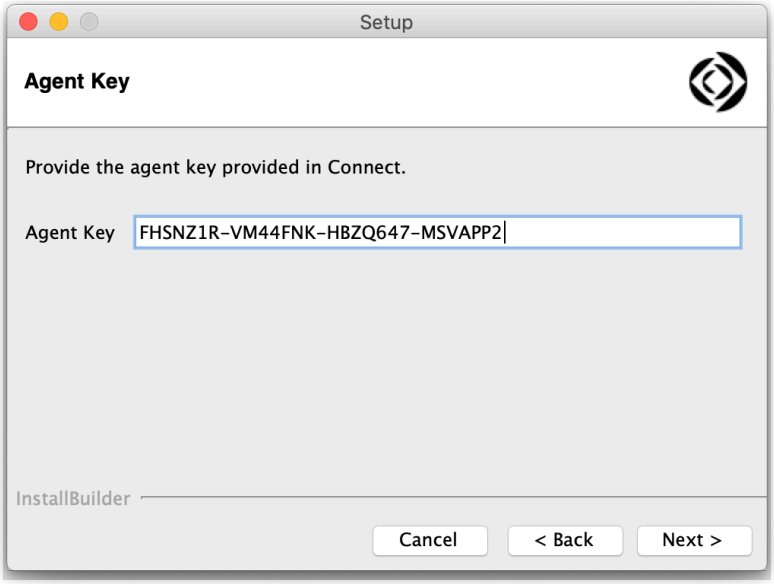
Unless you have a reason to change it, accept the default installation location of the agent, and click **Next**.



You do not need to install the on-premise agent on the same machine where your FileMaker Server is located. The on-premise agent can be installed on a different machine as long as that machine has access to the Internet **AND** access to the machine where your on-premise data resides.

Port 443 should be available for outgoing traffic on the machine where the agent is installed.

Next, the agent installer prompts you to enter the agent key you received earlier.



You can retrieve the agent key at any time by accessing the **On-premise Agents** tab and selecting the desired agent from the list of agents.

Working with the configuration.yml file.

A configuration.yml is created in the installation folder as part of the installation of the on-premise agent. It includes four default fields and information generated by the installer. An example of a default configuration.yml file is shown below:

```
1: name: Bedford Falls
2: id: 7c2f37ca-854e-4564-8705-24c2e08846a0
3: team: 58ecd75244b1e4406592e666
4: host: 'https://localhost:3000'
```

In most cases, this default information should not be altered or changed. However, additional fields and information about the data sources you wish to connect to should be added to the configuration.yml file before running the agent, including:

Field name	Description
Connector name	This will either be “mysql” or “filemaker” depending on the type of agent you are configuring. A configuration.yml can contain information about both types of agents, as shown in the example below.

Field name	Description
Connection name	A connection name identifies an instance of the connector. The connection name can be named anything you want it to be. It is recommended that spaces not be used in your connection name(s). Each named connection has its own namespace. Therefore, for each connector, you can have multiple named connections to different databases or data sources. In the example below, note that **bailey-park** and **night-machine** are two connection names under the connector name of **filemaker.**
Host (MySQL) or Domain (FileMaker)	The IP address of the MySQL host, or the URL of the FileMaker domain. In most cases, encapsulate your host or domain names in single quotes. For example: `'https://my.domain.com'`
User (mySQL) or username (FileMaker)	The database user name. Usernames should be entered using the same case as defined in your FileMaker app or MySQL source.
Password	For MySQL, the password for the host computer. For FileMaker, the password for the database.
Database	The database name (optional for mySQL.) Database names are case sensitive. Use of database extensions (ex: .fmp12) are optional.

Below is an example of a properly configured configuration.yml file.

```
1: name: Bedford Falls
2: id: 7c2f37ca-854e-4564-8705-24c2e08846a0
3: team: 58ecd75244b1e4406592e666
4: host: 'https://localhost:3000'
5: mysql:
6:   pottersville:
7:         host: 127.0.0.1
8:         user: potter
9:         password: BankL0an$
10:        database: finance
11: filemaker:
12:  bailey-park:
13:        domain: ‘https://example1.com'
14:        username: bailey
15:        password: 0dB0dy!
16:        database: angels
17:  night-machine:
18:        domain: ‘https://example2.com'
19:        username: watson
20:        password: s@mple
21:        database: assets
```

Tips for editing the configuration.yml file:

- Spacing is important. Do not use tabs when indenting values. Instead, use 2 spaces and 4 spaces when appropriate.
- Use single quotes around domain URLs and other values that might have spaces and/or special characters in them.

Configuring the on-premise agent from the command line.

An on-premise agent remains inactive until you start it. Claris Connect provides a command-line utility to run and manage an agent. To see the available commands, open a terminal window in the installation folder and type:

```
agent --help
```

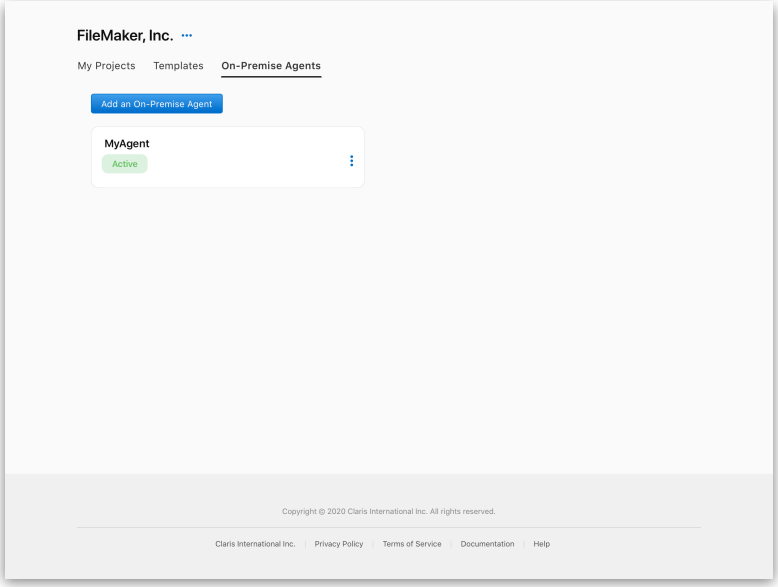
Claris Connect supports the following commands:

Command	Description
`version`	Returns the current version of the installed agent.
`update`	Updates the configuration file.
`decrypt string`	Decrypts credentials for use in the configuration file.
`encrypt string`	Encrypts credentials for use in the configuration file.
`configure key`	Generates a new configuration file, overwriting the previous one.
`run`	Runs the agent, using the current configuration file.
`start`	Starts the agent as a service, using the current configuration file.
`stop`	Stops the currently running agent service.

To begin using the agent, open a command-line / terminal window and type in the following command:

```
agent start
```

You can confirm the status of your configured agents by clicking the **On-premise Agents** tab on the Claris Connect Homepage. Active agents are listed as “Active.”

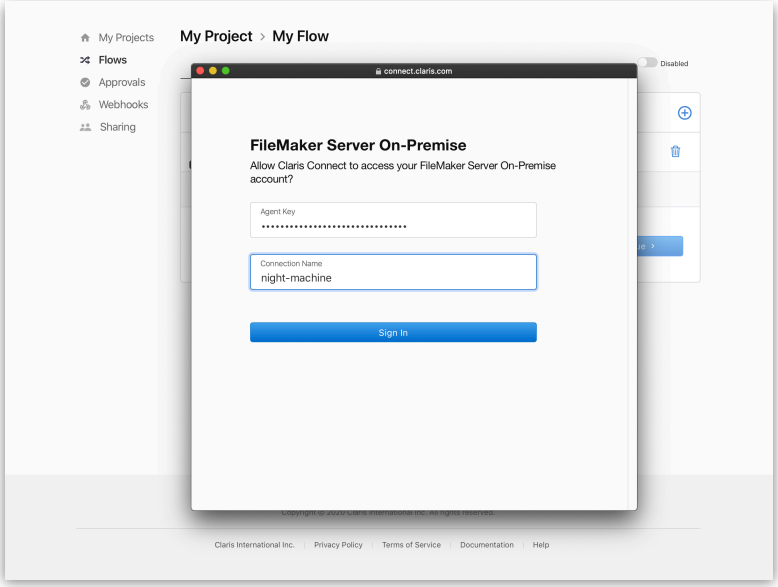


The **Options** menu for an agent allows you to delete it or retrieve the agent key.

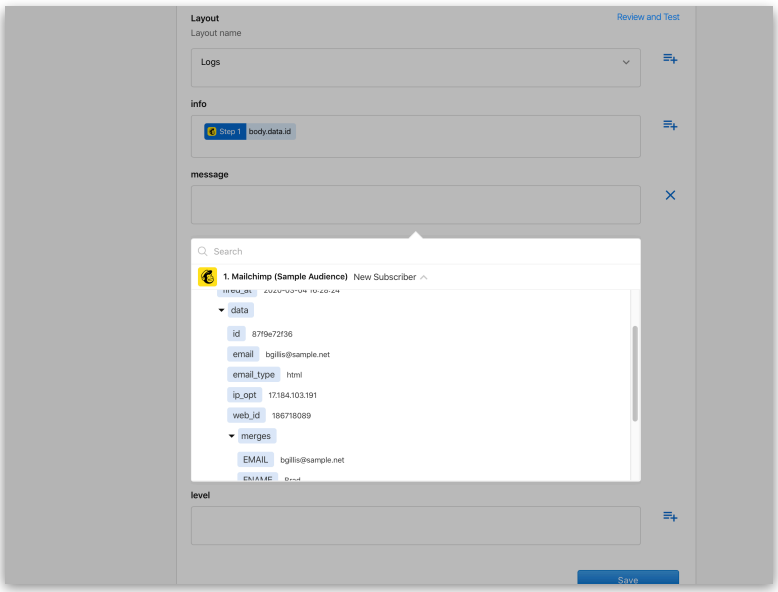
Using the FileMaker Server on-premise connector in a flow.

You can use active agents in your flows.

When you use an on-premise agent for the first time, you need to specify what agent you want to use by specifying the agent key and the connection name as defined in the configuration.yml file.



After you have successfully connected to the agent, specify the layout in your FileMaker app that you want to use. Only the fields that are on the selected layout are available for use in your flow.



In some cases, it might make sense to create a special layout in your FileMaker app with only the fields that you want available to your flow(s).

Summary

Claris Connect provides powerful integration between your hosted FileMaker apps and the applications and services you use every day. Whether you want data from a web form seamlessly entered into your FileMaker app or the same data sent to your favorite online service, Claris Connect provides the power and flexibility to make that happen — all in a simple to use point-and-click interface.

Legal information

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For more information, visit our website at https://www.claris.com.