



Adroit
Technologies



Adroit Edge Gateway

Adroit Cloud Microservice



Adroit
Edge Gateway

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1. Introduction

The Adroit Cloud Publisher is a Microservice that enables the Adroit Edge Gateway to publish operational data to the Adroit Cloud. This data can then be used in Dashboards, Reports and Analytics using the AI capabilities of the Adroit Cloud platform.

2. Configuration and Usage

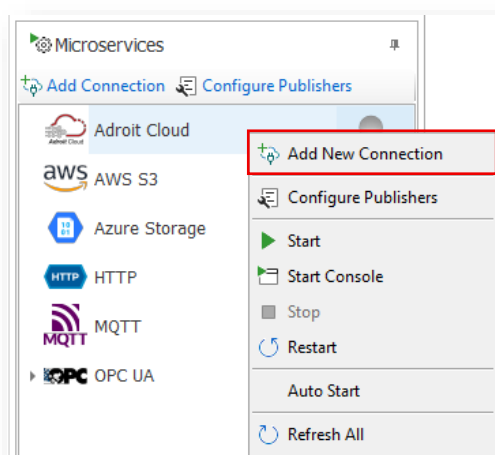
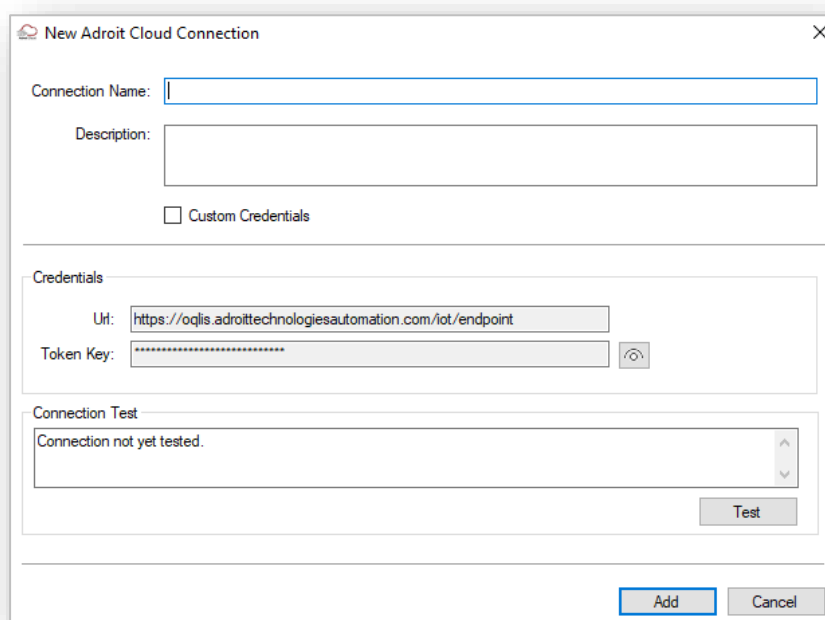
Configuration of all Adroit Edge Publishers is done within the **Config Editor**, under: **Configuration** → **Welcome** → **Edge Gateway Configuration**.

2.1. Adroit Cloud Connections

2.1.1. Adding a New Connection

To create a new Adroit Cloud connection:

1. Right-click the **Adroit Cloud** Microservice in the tree view.
2. Select the option to create a new connection.

The screenshot shows the 'New Adroit Cloud Connection' dialog box. It contains the following fields and controls:

- Connection Name:** A text input field.
- Description:** A text input field.
- ☐ Custom Credentials
- Credentials:**
 - Url:** A text input field containing 'https://oqlis.adroittechnologiesautomation.com/iot/endpoint'.
 - Token Key:** A text input field with masked characters (dots) and a toggle icon.
- Connection Test:**
 - A text area showing 'Connection not yet tested.'
 - A 'Test' button.
- Buttons:** 'Add' and 'Cancel' buttons at the bottom right.

In the **Add Adroit Cloud Connection** dialog, configure the following settings:

- **Connection Name:** The display name of the connection under the Adroit Cloud Microservice.
- **Description:** A description of the connection. Used as a brief tooltip description for the connection.
- **Credentials:**
 - **URL:** The Adroit Cloud endpoint URL (automatically provided by your license or manually specified with custom credentials).
 - **Token Key:** The authentication token (provided by your license or specified manually with custom credentials).
 - **Custom Credentials:** Optionally specify a custom URL and Token Key for a specific endpoint.

Connection Testing

A connection test feature is available to verify the URL and endpoint configuration.

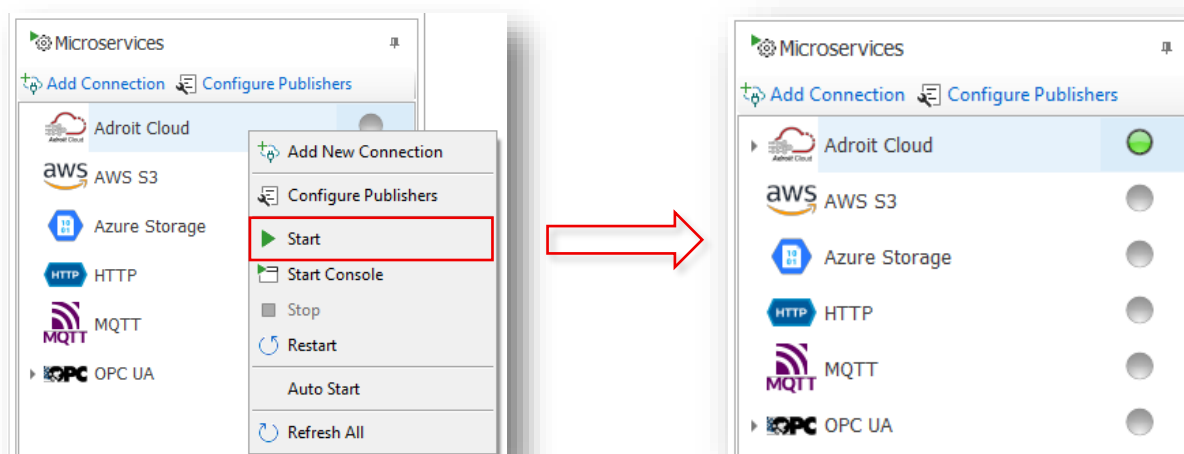
Edit or Delete a Connection

To edit or delete a connection, simply right-click on the connection and select the required option.

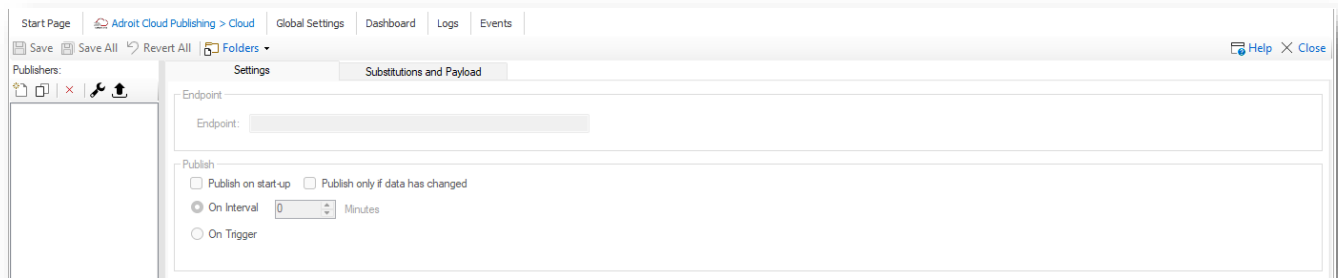
Note: Deleting a connection will delete any associated Publishers configured for the connection.

Start the Connection

To start the Microservice, right-click on the required Microservice and select Start.



After creating a connection, double-clicking it will present the configuration options for **Adroit Cloud Publishers**. You can add multiple Publishers to a connection and configure each one with these two tabs:



These tabs are:

Tab	Description
Settings	General settings, including bucket configuration and publishing modes (e.g., interval or trigger-based).
Substitutions and Payload	Configure Dataelement substitutions and the payload message for the Adroit Cloud endpoint. Validate and preview the final payload message with live data and test send the payload message to the Adroit Cloud endpoint.

2.2. Adroit Cloud Publishers

After creating a connection, multiple Publishers can be added by selecting the connection in the treeview and clicking **Configure Publishers** from the toolbar or by double-clicking it.

2.2.1. Adding Publishers

To add a Publisher:

1. Click the **Add New Publisher** from the toolbar.
2. Provide a name and description for the Publisher.

Each Publisher starts in **Maintenance Mode** (not actively publishing) by default.

To switch to **Publish Mode**, use the context menu or toolbar buttons options.

Additional options allow you to:

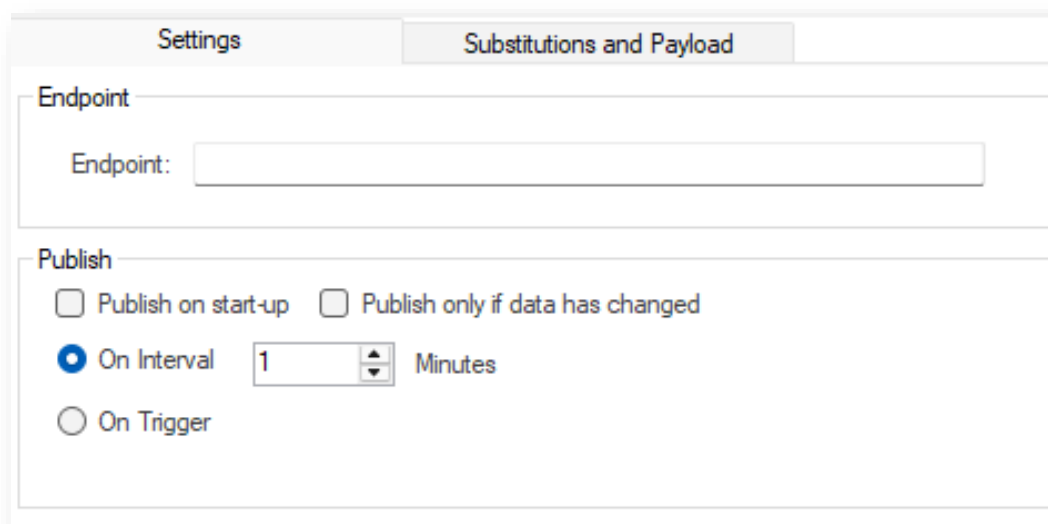
- Edit the Publisher's description.
- Delete the Publisher.
- Copy the Publisher, including all settings, substitutions, and payload configurations. The copy function also supports Find and Replace for substitution Dataelement names.



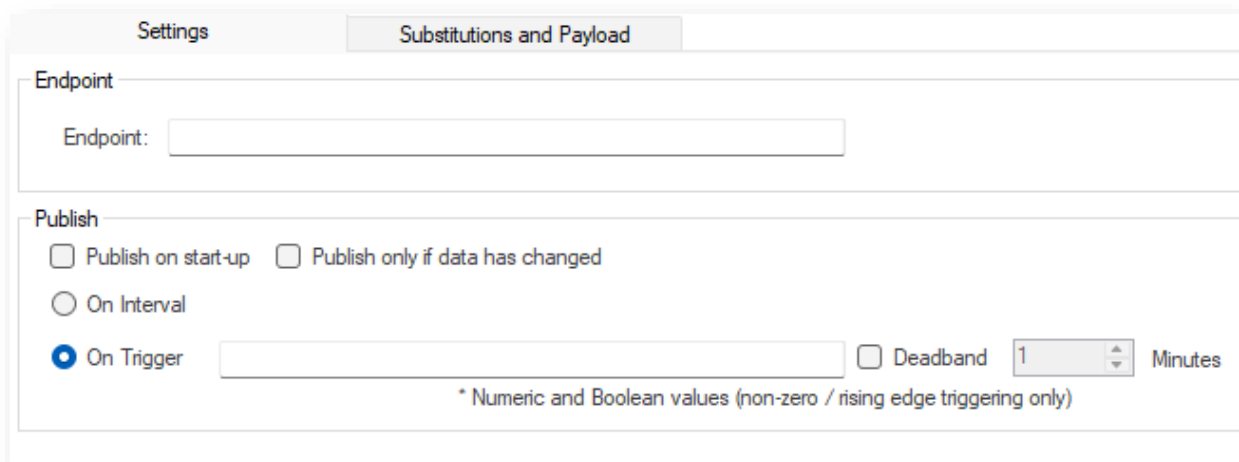
2.2.2. Publisher Settings

The **Settings** tab includes:

- **Endpoint:** As part of the security model this is a unique name created by Adroit Technologies in the Cloud, without this publishing will not occur. Please request this from info@adroit.co.za.
- **Publish Mode Settings:**
 - **On Interval:** Publishes messages at a regular interval (defined in minutes).
 - Interval (in minutes): Specifies the publishing interval.



- **On Trigger:** Publishes messages triggered by a Dataelement value change, provided that the trigger Dataelement has changed and holds a non-zero value.
 - **Deadband:** Defines the waiting period (in minutes) before accepting the next trigger after the last published time.



For both publishing modes above you can also:

- **Publish on start-up:** This publishes on startup of the Microservice and when the Publisher is set to publish mode.
- **Publish only if data has changed:** Publishes only if any substitution Dataelement values have changed.

2.2.3. Substitutions and Payload

In the Substitutions and Payload tab we can configure the substitution Dataelement for the Adroit Cloud Publisher as well as the payload messages which will be sent.

We are also provided with an option to validate, preview and test the substituted payload message before it has been sent.

2.2.3.1. Substitutions

The Substitutions grid allows users to define multiple substitutions with corresponding Dataelement and formatting.

To add Dataelement to the Substitutions grid:

1. Navigate to the Dataelement tree view under the relevant Adroit Datasource.
2. Select the desired Dataelement (you can multiselect) and drag them into the Substitutions grid.
3. Alternatively, you can directly input the full names of the Dataelement into the Substitutions grid by simply typing in the full name.

Additional Substitutions functionalities include:

- **CSV Import/Export:** Handle substitution lists and their configurations using CSV files. Import or export them seamlessly within the Substitution Grid.
- **Find and Replace:** Locate and modify text within substitution Dataelement names directly in the Substitution Grid.

2.2.3.2. Payload

The Payload configuration provides a markup editor for creating the JSON payload. Substitutions from the grid can be inserted into the JSON by selecting a substitution and using the Payload toolbar buttons to insert a substitution of specific Dataelement's data i.e. its value, quality and timestamp:

- **Value:** Inserts a `${substitution name}`, which will substitute in the Dataelement value.
- **Quality:** Inserts a `${substitution name}ST`, which will substitute in the Dataelement quality i.e. bad, good etc.
- **Timestamp:** Inserts a `${substitution name}TS`, which will substitute in the Dataelement timestamp.

These Substitutions can be also added manually into the JSON in the markup editor.

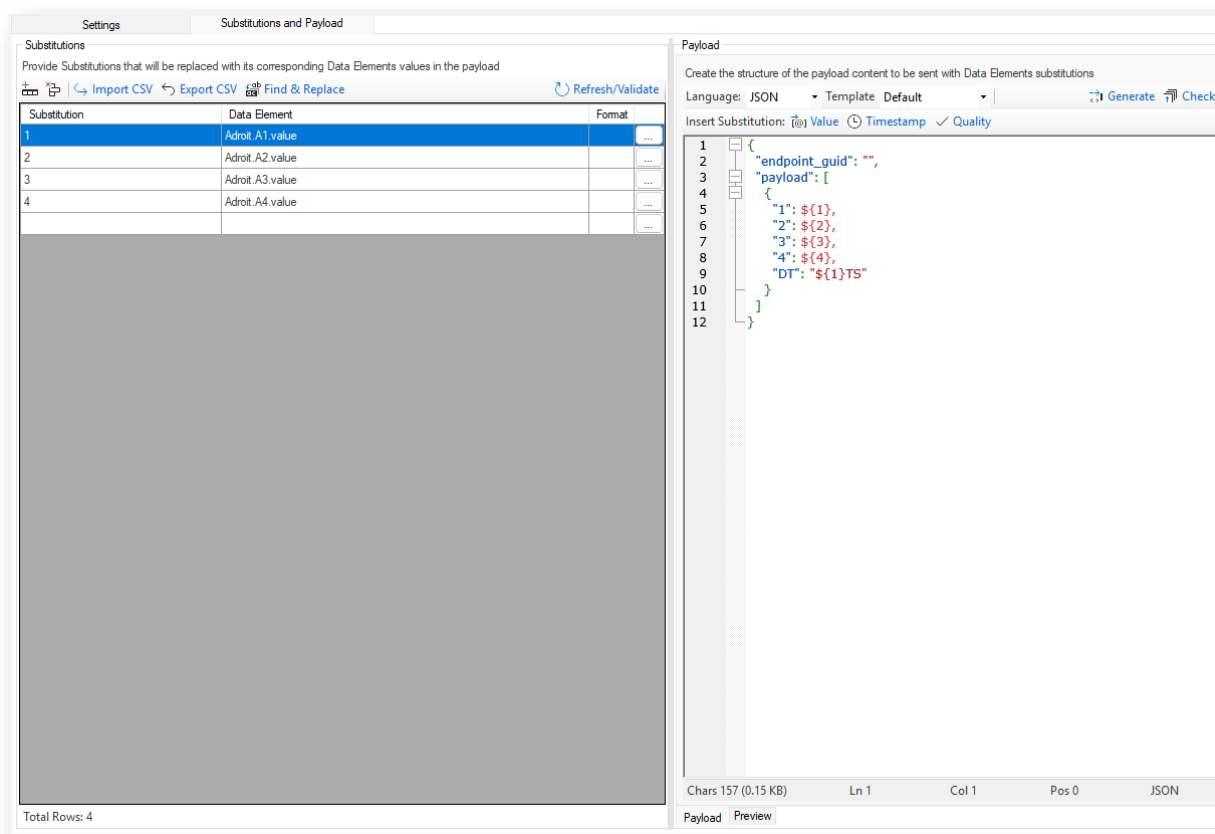
Additional Payload features include:

- **Templates:** Create JSON payloads using predefined imported templates. A default template is available to generate a JSON structure containing key-value pairs for each substitution, such as *substitution name: \${substitution name}*
- **Validation:** Verify the JSON payload to ensure accuracy and receive feedback on any errors.

2.2.3.3. Preview and Test

The **Preview** tab allows you to:

- **View** – view the final JSON payload with live substituted values.
- **Test** - send the payload message to ensure functionality. If the test fails, an error response will be displayed.



The screenshot shows the 'Substitutions and Payload' configuration window. On the left, the 'Substitutions' tab is active, displaying a table with 4 rows of substitutions. The table has columns for 'Substitution', 'Data Element', and 'Format'. The 'Data Element' column contains values like 'Adroit_A1.value', 'Adroit_A2.value', 'Adroit_A3.value', and 'Adroit_A4.value'. Below the table, it indicates 'Total Rows: 4'. On the right, the 'Payload' tab is active, showing a JSON structure for a payload. The JSON includes an 'endpoint_guid' and a 'payload' array with four elements, each corresponding to a substitution from the table. The substitutions are inserted as `${1}`, `${2}`, `${3}`, and `${4}`. The 'DT' field is set to `${1}TS`. The interface also includes a 'Refresh/Validate' button and a 'Generate' button. At the bottom, there are tabs for 'Payload' and 'Preview', and a status bar showing 'Chars 157 (0.15 KB)', 'Ln 1', 'Col 1', 'Pos 0', and 'JSON'.

Substitution	Data Element	Format
1	Adroit_A1.value	
2	Adroit_A2.value	
3	Adroit_A3.value	
4	Adroit_A4.value	

```

1 {
2   "endpoint_guid": "",
3   "payload": [
4     {
5       "1": "${1}",
6       "2": "${2}",
7       "3": "${3}",
8       "4": "${4}",
9       "DT": "${1}TS"
10    }
11  ]
12 }
  
```

2.3. Work Folder Location

All configuration files related to the Adroit Cloud are stored in:

C:\ProgramData\Adroit Technologies\SmartDataServices\AdroitCloud

Users typically do not need direct access to these folders, as configuration can be managed via the Config Editor. However, key files include:

- *config.xml*: Stores all settings, Dataelement substitutions, and payload configurations.
- *AdroitCloud.log*: Available only if “Log to file” is enabled. This log file must be opened manually.

Subfolders include:

- CSV: Contains CSV files for importing and exporting Dataelement substitutions.
- Templates: Contains predefined JSON templates for generating specific payload messages.

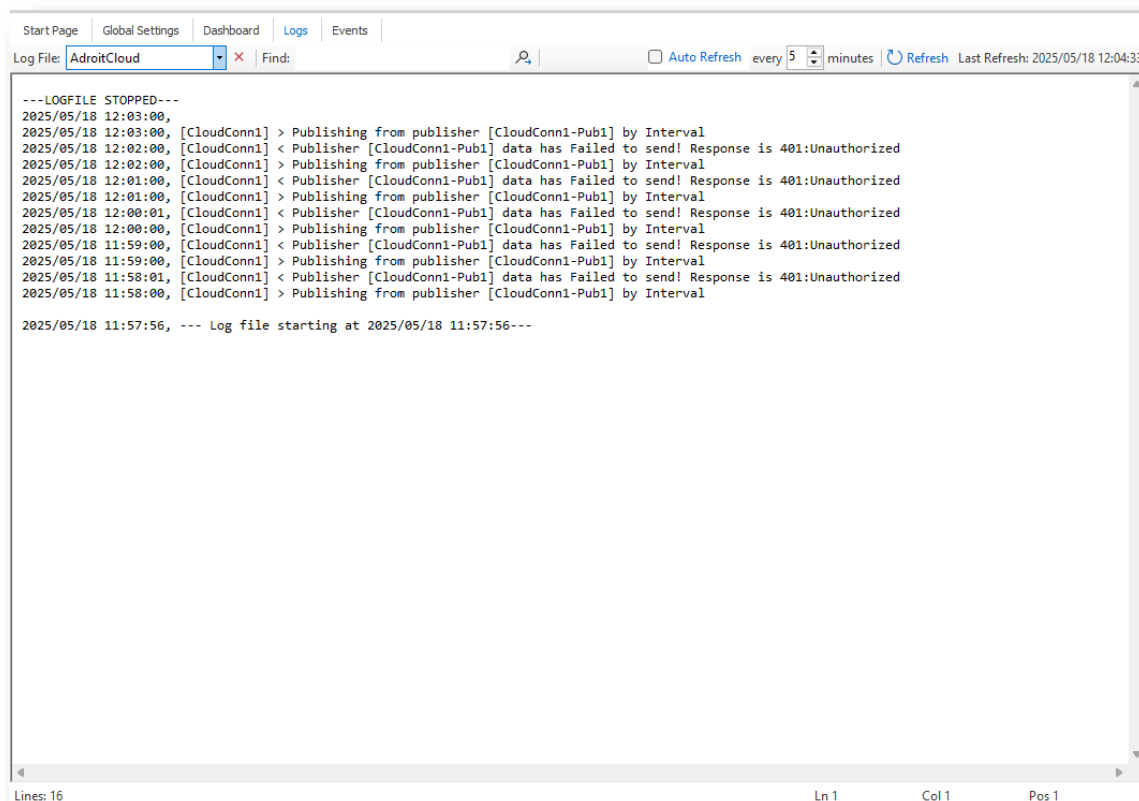
3. Troubleshooting

The Adroit Cloud Microservice provides various tools to help resolve issues:

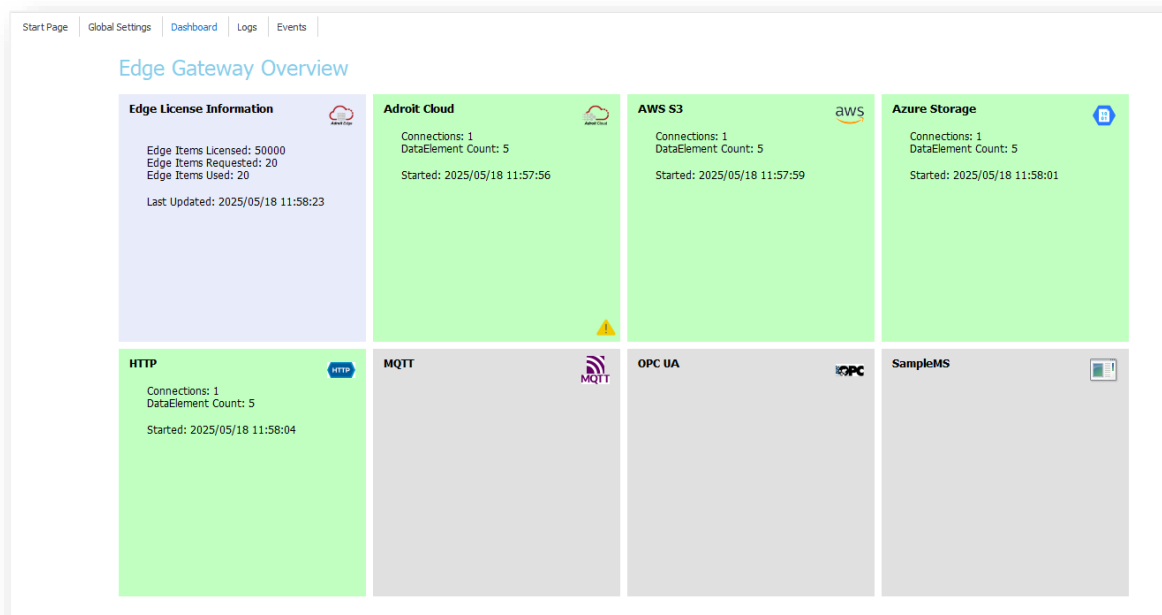
- **Connection Testing:** The Adroit Cloud connection settings include a test functionality to verify the connection to the Adroit Cloud endpoint.
- **Substitution Validation:** In the Adroit Cloud Publishers configuration, the substitution grid highlights invalid Dataelement of a substitution in red for easy identification.
- **Payload Validation:** The payload configuration features a validation tool to ensure the JSON payload is properly formatted, providing detailed feedback on any errors.
- **Preview and Testing:** The Preview tab allows users to preview the final JSON payload with live substituted values and test-send the payload message.
- **Diagnostics:** Access additional tools on the main Adroit Edge Gateway tabs for advanced troubleshooting:
 - **Event Log Viewer:** View all Microservice event log messages sourced from the SmartDataServices event log.

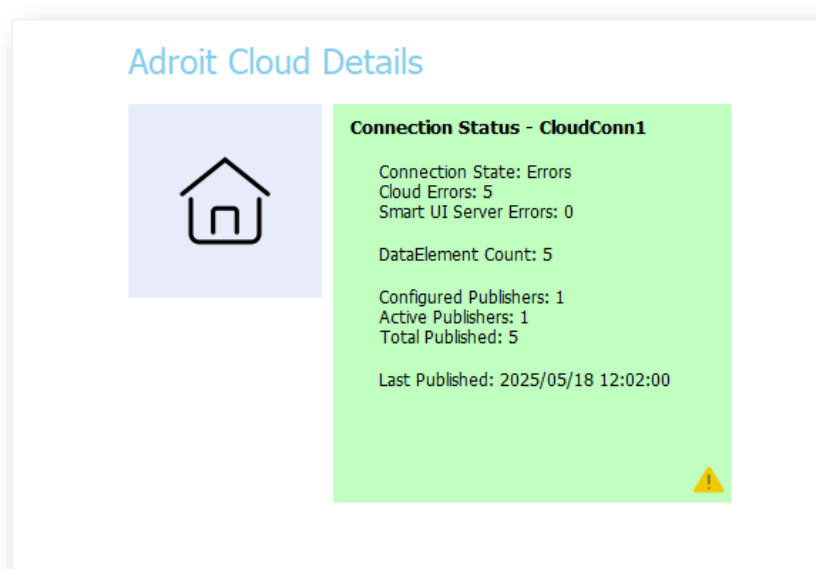
Start Page	Global Settings	Dashboard	Logs	Events
Last Updated: 2025/05/18 12:07:16 Event Viewer				
Enter text to search... Find Clear				
Drag a column header here to group by that column				
Time Generated	Entry Type	Source	Message	Data
2025/05/18 12:07:04	Error	HTTPPost	[HttpConn1] < Publisher [HttpConn1-...	{
2025/05/18 12:07:00	Information	AdroitCloud	[CloudConn1] > Publishing from publis...	
2025/05/18 12:07:00	Information	AzureStorage	[AzureConn1] > Publishing from publis...	
2025/05/18 12:07:00	Information	HTTPPost	[HttpConn1] > Publishing from publish...	
2025/05/18 12:07:00	Information	AWSS3	[AWSConn1] > Publishing from publish...	
2025/05/18 12:07:00	Error	AzureStorage	[AzureConn1] Perform Upload Excepti...	
2025/05/18 12:07:00	Information	AWSS3	[AWSConn1] > Publisher AWSConn1-...	
2025/05/18 12:07:00	Error	AWSS3	[AWSConn1] < Publisher AWSConn1-...	
2025/05/18 12:07:00	Information	AWSS3	[AWSConn1] > Publisher AWSConn1-...	
2025/05/18 12:07:00	Error	AWSS3	[AWSConn1] < Publisher AWSConn1-...	
2025/05/18 12:07:00	Information	AWSS3	[AWSConn1] > Publisher AWSConn1-...	
2025/05/18 12:07:00	Error	AWSS3	[AWSConn1] < Publisher AWSConn1-...	
2025/05/18 12:07:00	Information	AWSS3	[AWSConn1] > Publisher AWSConn1-...	
2025/05/18 12:07:00	Error	AdroitCloud	[CloudConn1] < Publisher [CloudConn...	{
2025/05/18 12:06:04	Error	HTTPPost	[HttpConn1] < Publisher [HttpConn1-...	{
Total: 1246 records				
Time Generated: 2025/05/18 12:07:04 Entry Type: Error Source: HTTPPost Message: [HttpConn1] < Publisher [HttpConn1-Pub1] post Failed to send! Something went wrong with post		Data: <pre>{ "d": [{ "tag": "1", "value": 0.0 }, { "tag": "2", "value": 0.0 }, { "tag": "3", "value": 0.0 }] }</pre>		

- **Log File Viewer:** Examine the complete contents of a selected Microservice log file.



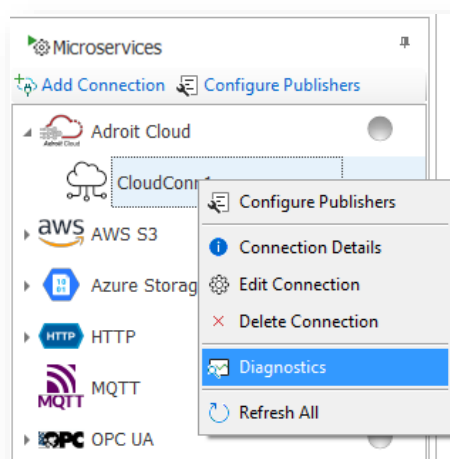
- **Dashboard:** Gain real-time dashboard-like feedback from Microservices, featuring specific Microservices statuses, counters, and indicators.

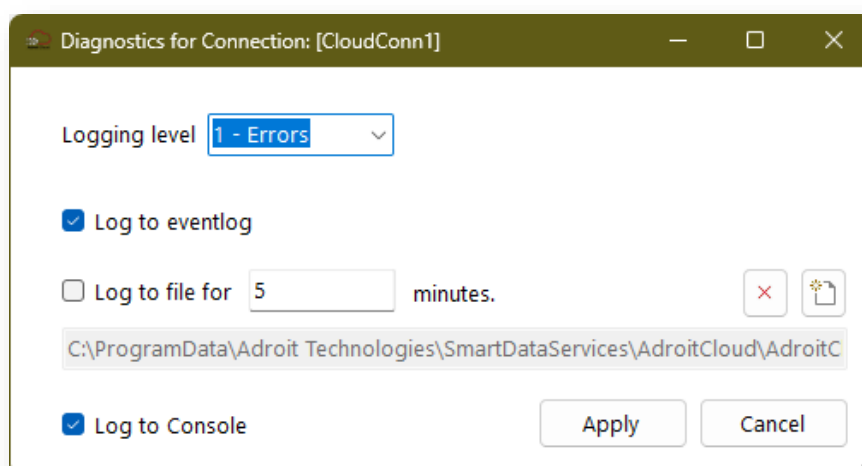




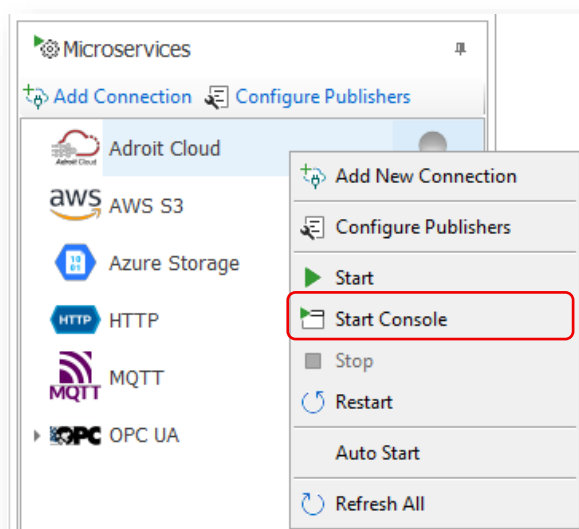
Diagnostics information logging, including its log level (i.e. Errors, Warnings, Information and Debug levels etc.) and output destination (i.e. Event log, log file, console etc.) is configured through the Diagnostics dialog for each Adroit Cloud connection.

To configure the Diagnostics for an Adroit Cloud connection, right-click the Adroit Cloud connection and click Diagnostics.





- **Microservice Console View:** Operate each Microservice as a console application to observe its real-time console messages. To run a Microservice as a console right-click the Microservice and click Start Console.



```
Y:\debug\SDS\SDSOQLISExec.exe
11:37:45: [AdroitCloud] >>>>>>>> Loading MicroService <<<<<<<<<
11:37:45: [AdroitCloud]
11:37:45: [AdroitCloud] Connecting to Smart UI Server...
11:37:46: [AdroitCloud] Smart UI Server Connection successful :)
11:37:46: [AdroitCloud] Reading MicroService configuration ...
11:37:46: [AdroitCloud] Reading Connection [CloudConn1] Publishers ...
11:37:46: [AdroitCloud] + Added Publisher: CloudConn1-Pub1
11:37:46: [AdroitCloud] Subscribing to Publisher [CloudConn1-Pub1] data elements
11:37:46: [AdroitCloud] Reading Publisher [CloudConn1-Pub1] data elements initial values
11:37:46: [AdroitCloud] Starting Publisher [CloudConn1-Pub1]: PollInterval Mode
11:37:46: [AdroitCloud]
11:37:46: [AdroitCloud] >>>>>>>> MicroService Loading Complete <<<<<<<<<
11:37:46: [AdroitCloud]
```