| Participation information and regulations | Date: 24/02/2025 |

Mediapulse Radio Streaming Data

1. REGISTRATION OF CHANNELS/STATIONS

In order for a channel to participate in the measurement, it must be registered beforehand via Mediapulse intake form.

To register a channel for measurement, the following information is required for each stream:

- Channel Name
- Channel Type: FM/Simulcast or WebOnly
- Brand Name
- Stream-URL: A complete URL to the audio stream. When called up, an audio signal must be heard.
- Mount Name(s) (description / designation in the log file): The mount name in the application must correspond exactly with the mount designation in the log data delivery. This match is elementary for the listener measurement and the summation of the sessions.
- Bitrate: Data transmission rate, measured in bits per second, abbreviated as bit/s or bps.
- Audiocodec: The audiocodec used should be specified as precisely as possible.
- Sampling rate: If the sampling rate is not 44.1 kHz, this information is mandatory.
- E-mail addresses of a technical contact for possible queries

A permanent technical check of the channel data does not take place automatically.

2. LOG DATA TRANSMISSION

2.1. REQUIREMENTS FOR LOGFILE STORAGE

To enable a re-import of the data in event of any problems, the log files must be kept by the hosting provider for at least 30 days.

2.2. THE FOLLOWING LOGFILE FORMATS ARE SUPPORTED:

Transmission via Logimporter:

- Icecast
- AIS
- Shoutcast
- more on request

Further information on the Logimporter can be found in the online technical documentation:

https://docs.quantumcast-digital.com/projects/listener-logs-observation/en/stable/deutsch/technische_dokumentation.html#logfileimport-per-logimporter

Important: To enable a re-import of the data in event of any problems, the log files must be kept by the hosting provider for at least 30 days.

Transmission via sFTP:

- Mediapulse format, description see point 2.3.2

2.3. IMPORTANT INFORMATION FOR THE TRANSMISSION VIA SFTP:

The log data is processed immediately after upload. Shortly afterwards, the result is available and can be viewed with the help of the Mediapulse dashboards. If it is necessary to re-read the data, for example to make a correction, this can be done by means of a chargeable correction order.

2.3.1. REQUIREMENTS FOR LOG FILE UPLOAD

- one log file per day for all data
- naming of the file: YYYY-MM-DD.log.gz
- file format: plain-text, utf8 encoded, gzip compressed

Further information can be found in the online documentation:

https://docs.quantumcast-digital.com/projects/listener-logs-observation/en/stable/deutsch/technische_dokumentation.html#logfileimport-per-sftp

2.3.2. STRUCTURE OF THE LOG FILE IN MEDIAPULSE-FORMAT

Line-by-line structure with tab-separated fields (each line corresponds to a completed stream)

Example and meanings of a protocol line:

2013-02-01 13:56:01   123.123.123.0   48f0d45be9a69cb6dbbcb75b919870596f63d522

/heavymetal24 mp3   icecast2   www.webplayer.de   Mozilla/5.0(Test-UserAgent)

200   24   http   51669786   0

meaning	value in the example	description
stream start:	2013-02-01 13:56:01	Date and time in format YYYY-MM-DD<blank tab> HH:MM:SS, time zone UTC / as adjustable
IP-address anonymised	123.123.123.0	in decimal notation, shortened by the last octet
IP-hash:	48f0d45be9a69cb6dbbcb75b919870596f63d522	SHA1 hash via the unabbreviated IP address with an always identical salt (freely selectable, offer-individual value) appended before hashing.
mount	/heavymetal24	technical stream mount preceded by a slash "/". It serves as a reference for channel recognition and must be specified when registering a channel. Several streammounts are possible per channel.
streaming format	mp3	Abbreviation for the audio data format, which describes the structure of the audio data stream. (e.g. mp3, aac, ogg)
streaming server	icecast2	Abbreviation for the streaming server. (e.g. icecast, ais, etc.)
referrer	www.webplayer.ch	Referrer, if available (field must be provided, if no referrer is available, field remains empty)
useragent	Mozilla/5.0(Test-UserAgent)	Player, browser, operating system, etc. Please note the

		encoding of the log file (utf8 encoded).
status code	200	http-status codes
duration	24	duration time in seconds, as free as possible from buffer times
transmission protocol	http	protocol for the transmission of the audiostream
transmitted bytes	51669786	amount of data sent, specified in bytes
monitoring flag	0	With the help of the monitoring flag, it is possible to deliberately mark a log entry. This flag should be used if the delivered stream was not created by a regular listener but was used, for example, for technical monitoring of the stream availability. 1 = no listener, but something else 0 = this is a regular listener, so please count.

2.4. DATA PROTECTION

Each participant is obliged to anonymise the IP addresses of its listeners. For IPv4 addresses, the last octet is replaced by a zero. For effective
anonymisation of IPv6 addresses, according to current knowledge, at least the lower 64 bits of each address should be deleted, i.e. the entire interface identifier, and an additional 24 bits of the prefix.

Example:
1111:2222:3333:4444:5555:6666:7777:8888 -> 1111:2222:3333::

or
2610:28:3090:3001:dead:beef:cafe:fed3 -> 2610:28:3090::

When using the Logimporter software, this anonymisation is done automatically in the software before transmission to the platform. Only when transmitting via sFTP does the anonymisation have to be done by the participant before uploading the log file.

Each participant should include references to data processing in their public data protection statements.

3.   LOGIMPORTER AND SFTP

TECHNICAL DOCUMENTATION

Logfile import via log importer

With the help of the Audalaxy log importer it is possible to transmit the log files of all common streaming servers to the evaluation system. The data is anonymised before transmission and is already processed in such a way that all data protection regulations of the GDPR are complied with.

The Audalaxy log importer is a software that can be installed as a stand-alone system service on self-managed streaming servers.

The latest version is available for download here:

- Linux 64Bit: https://streamabc-sw.s3.eu-central-1.amazonaws.com/logimporter/logimporter-linux-amd64
- Windows 64Bit: https://streamabc-sw.s3.eu-central-1.amazonaws.com/logimporter/logimporter.exe
- MacOS: https://streamabc-sw.3.eu-central-1.amazonaws.com/logimporter/logimporter-mac

The log importer supports various input forms, log formats and output options. The configuration is done via parameters or environment variables, which must be specified when calling the program.

Three areas are always necessary: "input" defines where the logs come from (e.g. "tail" to an active log file, reading in a single existing log file or several), "parser" configures the log format to parish and "output" defines how the data are output (e.g. Ingest at Audalaxy, test output on console).

Input, parser and output must always be specified when calling. An "Origin" must always be specified. This is an individual identifier, which is communicated to you by Audalaxy.

The general call follows this pattern:

```
logimporter input:file -path="./logs/access.log" parser:icecast output:amqp
-origin=xxx
```

To the strip

In the examples of the xxx at `-origin=xxx` replace with the respective Origin value.

With –help can be used to display a short help using possible parameters after each plugin.

```
./logimporter -help
```

Input plugins for log files

The input plugin is specified with the prefix "input:".
There are the following inputs, of which only one can be used:

```
input:file –path=/pfad/zur/Datei
```

Complete reading of a single file. The path to the file must be specified. GZ-compressed files can be used. These must have the ending .gz.

```
input:fileglob –path=/pfad/zu/Dateien*.log
```

Full reading of multiple files. A path with glob pattern must be given. GZ-compressed files can be used. These must have the ending .gz.

```
input:tail –path=/pfad/zur/Datei.log
```

Reading log lines of a file while it is written. The program remains active until it is stopped manually and automatically sends new lines.

In general, rotated log files are recognized if the name remains the same.
More flags for *input:tail:*

```
-whence=end oder start
```

Start reading the file at the beginning or end (default is end to read only new lines).

```
-polling
```

Use polling instead of fsnotify to determine new data.

```
-scanheader
```

Should be used for the tail of AIS logs to determine field configuration specified in the first lines of the file.

To the strip

The use of the [health check](#) is a good user for monitoring the input.

Parser Plugins for Streaming

The parser plugin is specified with the prefix "parser:".
There are the following parsers, only one can be used:

```
parser:icecast
```

Logs have Icecast format.

```
parser:ais
```

Logs have AIS session log format.

```
-version=ais8
```

There are different formats that are usually recognized by the fields at the beginning of the file. If there are problems with the detection, a format can be specified here.

Output Plugins for data transmission

The output plugin is specified with the prefix "output:".
There are the following outputs, of which only one can be used:

```
output:amqp
```

Logs are transferred to Audalaxy via AMQP messages. This is the standard and should only be changed if explicitly required by Audalaxy.
More flags for *output:amqp* :

```
-origin=xx
```

Mandatory field. This identifier is communicated by Audalaxy and is used to correctly assign accesses via the log importer.

```
-streamwatch
```

Optional. This activates an additional delivery of the Audalaxy Streamwatch. Just use if requested by Audalaxy explied.

`output:noop`

Test edition "dry run". No data is sent, but it can be checked whether the import works. Other flags for *output:noop* s:

`-output`

Log lines are output on test by test.

`output:http`

Logs are sent to an ingest endpoint via HTTP. Alternative, only if AMQP does not work and is requested by Audalaxy.

More flags for *output:http* :

`-origin=xx`

Mandatory field. This identifier is communicated by Audalaxy and is used to assign accesses via the log importer correctly.

`-streamwatch`

Optional. This activates an additional delivery of the Audalaxy Streamwatch. Just use if requested by Audalaxy explied.

It is recommended to use the log importer via a start script, e.g. a Systemd Unit file. The program runs permanently and tries to rebuild connections independently. Log rotation is automatically detected if the file name remains the same.

At AIS, it is important to use the session log and not the access log. Only that contains the duration of the connection. In the icecast, however, the Access log.

Then always specify the type of the file for the log importer.

Here is an example of a systemd unit file logimporter.service

```
[Unit]
Description=QuantumCast Logimporter
Wants=network-online.target
After=network-online.target

[Service]
ExecReload=/bin/kill -HUP $MAINPID
ExecStart=/usr/local/bin/logimporter-linux-amd64 input:tail –
path=/var/log/icecast/access.log parser:icecast output:amqp –origin=xxx
User=icecast
KillMode=process
KillSignal=SIGINT
LimitNOFILE=infinity
LimitNPROC=infinity
Restart=on-failure
RestartSec=2
StartLimitBurst=3
StartLimitIntervalSec=10
TasksMax=infinity

[Install]
WantedBy=multi-user.target
```

Adapted to the respective conditions must be:

- Path to the program (here /usr/local/bin/logimporter-linux-amd64)
- Path to log (here /var/log/icecast/access.log)
- User (here icecast)

After delivering data in case of error

There are two new flags since v3.1.0 `-after="YYYY-MM-DD HH:mm:ss`and `-before="YYYY-MM-DD HH:mm:ss`to send only logs before or after a specified date. Both flags can also be combined (i.e. only after a time, however, before another). Both are global flags and must be specified before the input.

If the time of an error has been determined (for example, based on local error messages or in the dashboard if graphs end), the file must be found in the day `-after`Flag is used to deliver the missing data.

If you know when it worked again (e.g. because you have restarted there), this point should be as `-before`be specified.

A complete call looks like this:

```
logimporter -after="2022-03-04 19:15:25" input:file -path="./logs/access-
2022-03-04.log.gz" parser:icecast output:amqp -origin=xxx
```

Healthcheck

If a binding address/port is specified via the "-list" flag, the importer starts an HTTP server and activates an end point "/health" there.

Example:

`-listen=127.0.0.1:8080`launches the HTTP server and connects it to IP 127.0.0.1 and port 8080. The Healthcheck can be called with http://127.0.0.1:8080/health. It provides HTTP status 200 if everything is ok. If not enough new log lines were processed via input plugins for log files in the "-alertInterval 300" (default 300s) interval, Status 500 is returned.

If the IP is omitted for lists, the Healthcheck listens to all IPs that are configured `-listen :8080`

Logfile import via SFTP

Here you can upload the log files:

```
SFTP-Host: logimport.quantumcast.cloud
Port: 2022
```

Username and password are individual per customer and are provided by Audalaxy.

The log files must be uploaded to the main folder. Subfolders are not supported.

The files can be processed uncompressed or compressed (GZIP with the file extension .gz).

Once a file has been processed, it will be automatically moved to the "processed" folder.