

# Requirements for journal-uploader

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[[TOC]]

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [RFC 2119](#).

## Description

The journal-uploader has two main functionalities.

- Take a stream of log messages and filter them depending on their severity
- Upload journal logs for a specified time when activated through cloud call

## Requirements

*TOPIC-1 - Journal Watcher*

**SUB-1.1 - File Monitoring**

- **REQ-1.1.1 - Continuous Monitoring:** The tool **MUST** continuously monitor a designated directory.

**SUB-1.2 - File Detection**

- **REQ-1.2.1 - Detection of New Files:** The tool **MUST** detect the addition of new files in the monitored directory.
- **REQ-1.2.2 - Avoid Re-processing:** The tool **MUST NOT** process files that have already been processed.

*TOPIC-2 - Traced Logging*

**SUB-2.1 - File Processing**

- **REQ-2.1.1 - Reading Log Messages:** When a new file is processed, each log message **SHOULD** be put into a buffer.
- **REQ-2.1.2 - Filtering Log Messages:** The tool will search for messages of a defined priority (Trigger Priority). Each message of this priority, as well as all messages before and after, which are inside a defined timespan, **MUST** get written into a file. Every other message **SHOULD** get dropped.
- **REQ-2.1.3 - No Duplicate Log Messages:** The tool **SHALL** make sure that no log entry will be written to the file twice.

**SUB-2.2 - Traced Log Rotation**

- **REQ-2.2.1 - Rotating Files:** When the size of the current traced log file exceeds a certain threshold, it **MUST** be closed and a new file **MUST** be opened for writing.
- **REQ-2.2.2 - Compression of Rotated Files:** Each traced log file **MUST** get compressed after it got rotated.

- **REQ-2.2.3 - Rotating Directory:** When the directory size exceeds a certain threshold, the tool **MUST** delete the oldest files in the directory, until the size is below the threshold again.

## TOPIC-3 - Remote Journal Logging

### SUB-3.1 - Service Activation

- **REQ-3.1.1 - Cloud Activation:** The remote journal logging **SHALL** be startable through a function call from the cloud. The api call has the duration and max interval as arguments.
- **REQ-3.1.2 - Duration:** The remote journal logging **SHOULD** stay active, until it reaches the specified duration.
- **REQ-3.1.3 - Max Interval:** If no upload was done after the amount of time specified in max interval, a log rotation **SHALL** be triggered, which will in turn get picked up by the file monitoring.
- **REQ-3.1.4 - Analytics Not Accepted:** If the user has not accepted the usage of their data, the cloud call **MUST** result in an error.

### SUB-3.2 - File Processing

- **REQ-3.2.1 - File Upload:** When a file gets detected, it **SHOULD** get uploaded to the cloud.
- **REQ-3.2.2 - No Duplicate Files:** Already processed files **MUST NOT** get uploaded again.
- **REQ-3.2.3 - Revoking Analytics:** If the user revokes the usage of their data, the service **MAY** continue running but **MUST NOT** upload any data until the user allows the usage of their data again.
- **REQ-3.2.4 - Duration Expired:** After the specified duration is expired, the service **SHOULD** stop uploading files.

## TOPIC-4 - Configuration

- **CONF-4.1 - Journal Directory:** Users **SHOULD** be able to specify the directory to be monitored for journal files.
- **CONF-4.2 - Output Directory:** Users **SHOULD** be able to specify the directory into which the final files will be written.
- **CONF-4.3 - Trigger Priority:** Users **SHOULD** be able to specify which priority triggers the filtering.
- **CONF-4.4 - Journal Context:** Users **SHOULD** be able to specify how many seconds of context will be added to traced logs when encountering a trigger priority.
- **CONF-4.5 - Max File Size:** Users **SHOULD** be able to specify the max file size, at which a file gets rotated.
- **CONF-4.6 - Max Directory Size:** Users **SHOULD** be able to specify the max directory size, at which a directory gets rotated.
- **CONF-4.7 - File Monitoring Interval:** Users **SHOULD** be able to specify an interval, which **SHOULD** change how long the tool waits before checking if new files are available.

## TOPIC-5 - Performance Requirements

- **PERF-5.1 - Efficiency:** The tool **SHOULD** efficiently monitor and process files without excessive resource consumption.
- **PERF-5.2 - Interval Delay:** The tool **SHOULD** do its work with no more than 10 seconds delay after its interval.

## TOPIC-6 - Security & Data Protection

- **SEC-6.1 - No Insecure Connection:** The tool **MUST** send data only through a secure connection.
- **SEC-6.2 - GDPR compliance:** The tool **MUST NOT** upload data if the user has not agreed to share this information.

## TOPIC-7 - Testing

- **TEST-7.1 - Unit Tests:** Comprehensive unit tests **SHOULD** be written to cover major functionalities.
- **TEST-7.2 - Integration Tests:** Integration tests **SHOULD** be conducted to ensure all parts of the tool work together seamlessly.

## Definitions

- Default Journal Directory: `/run/log/journal/<machine_id>`
  - Machine ID can be found at `/etc/machine-id`
- Default Output Directory: `/run/log/filtered-journal`

## Config Defaults

- **Journal Directory**
  - Type: Path
  - **Required:** This value **MUST** be provided as a start parameter.
- **Output Directory**
  - Type: Path
  - **Required:** This value **MUST** be provided as a start parameter.
- **Trigger Priority**
  - Type: Enum
  - Valid Values: *Emergency, Alert, Critical, Error, Warning, Notice, Info, Debug*
  - Default Value: *Warning*
- **Journal Context**
  - Type: Integer
  - Unit: Seconds
  - Default Value: *15*
- **Max File Size**
  - Type: Integer
  - Unit: Bytes
  - Default Value: *8388608* (8 MB)
- **Max Directory Size**
  - Type: Integer
  - Unit: Bytes

- Default Value: 75497472 (72 MB)

- **File Monitoring Interval**

- Type: Integer
- Unit: Seconds
- Default Value: 10