FEX CLOUD Capture

User Guide

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GetData

1.1 CONTENTS

1. FEX CLOUD CAPTURE OVERVIEW

Cloud servers are now commonly used to store every-day end user data, including emails, documents, photos, and communication logs. By acquiring data from cloud services, investigators can uncover critical evidence that may not be available on local devices.

FEX Cloud Capture™ is a software tool by GetData Forensics (www.getdataforensics.com) for the acquisition of data stored on remote cloud servers. FEX Cloud Capture aids in maintaining the integrity and authenticity of the evidence, by collecting data in a forensically sound manner.

Data captured by FEX Cloud Capture is done so locally by the investigator. No data, stored, or used by GetData Forensics.

1.1 CLOUD CAPTURE CONSIDERATIONS

When capturing data from the cloud, it is important that investigators consider critical factors to ensure the process is effective, legal, and secure:

- **Legal Compliance**: Investigators must adhere to legal requirements and obtain proper authorization, such as search warrants, to access cloud data. Different jurisdictions have varying laws regarding data privacy and access. Be aware of the legal jurisdictions and data sovereignty laws applicable to the data you are capturing.
- **Chain of Custody**: Maintaining a clear and documented chain of custody is essential to ensure the integrity and admissibility of the evidence in court.
- **Data Preservation**: It is crucial to preserve the original data without alteration. Where possible, investigators should use forensically sound methods and tools to capture and store data, ensuring it remains unchanged.
- **Service Provider Cooperation and Compliance**: Collaborate with cloud service providers to understand their data retrieval processes and ensure compliance with their terms and conditions.

It should be noted by the investigator that when a cloud account is accessed, it is likely that end user notifications will be generated, which can include email, text, and push notifications. The method and timing of notifying the account owner can vary based on the service provider's policies, legal requirements, and the nature of the access.

1.2 CLOUD API ACCESS

FEX Cloud Capture interacts with cloud storage services using APIs (Application Programming Interface) provided by cloud providers. These APIs enable comprehensive programmatic access to files and folders stored in the cloud. Through these APIs, FEX Cloud Capture can read files, including metadata, sharing, and permissions. Extensive documentation and resources are

published by cloud providers and should be referred to for detailed technical information. API references include:

- **Drop Box**: https://www.dropbox.com/developers/documentation
- **Google Drive:** https://developers.google.com/drive/api/reference/rest/v3
- **One Drive:** https://docs.microsoft.com/en-us/onedrive/developer/

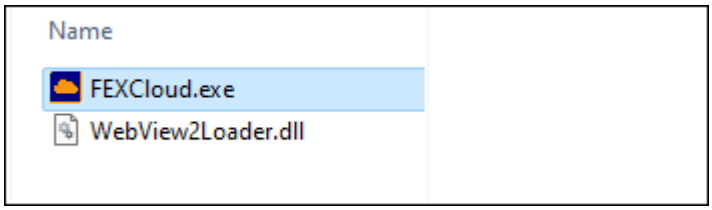
2. FEX CLOUD CAPTURE DOWNLOAD

FEX Cloud Capture is available for download from the GetData Forensic website:

- https://getdataforensics.com/product/FEX Cloud Capture-capture/

Unzip the download file. FEX Cloud Capture is a stand-alone executable. It does not require installation or activation.

Figure 1: FEX Cloud Capture installation.



3. FEX CLOUD CAPTURE SETUP

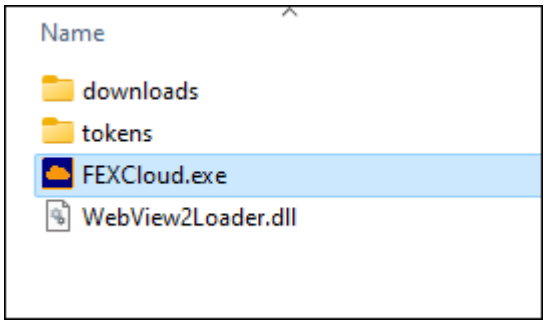
When an investigator captures cloud data, several considerations must be taken into account for the local forensic computer equipment and the network connection to ensure the process is secure and reliable:

- **Bandwidth and Speed**: A high-speed, reliable internet connection is crucial for efficiently capturing large amounts of data from the cloud. Consider having a redundant connection in place in case of network failures.
- **Workstation Capacity:** Ensure the forensic computer has sufficient CPU power and RAM to handle large volumes of data. Adequate storage capacity is essential, considering that cloud captures can involve significant data volumes.
- **Workstation and Network Security:** Third party data can expose a to security threats. Ensure consideration is given to protecting the local environment whilst maintaining the speed and stability of the capture.

3.1 FEX CLOUD CAPTURE – BASE FOLDERS

FEX Cloud Capture is launched by executing **FEXCloud.exe**. Additional folders will be created on first launch, including **downloads** and **tokens:**

Figure 2: FEX Cloud Capture folder after first launch.



3.1.1 DOWNLOADS FOLDER

The **downloads** folder is the default storage location for captured data. The structure of the data in the folder is discussed in more detail later in this document.

3.1.2 TOKENS FOLDER

An access token is a security credential issued by an authentication server that grants a user or application permission to access specific resources or services hosted in the cloud. These tokens are typically generated during the authentication process and contain encoded information about the user's identity and the permissions or scopes they have been granted.

Access tokens are essential for securing communications and ensuring that only authorized users or applications can access sensitive data or perform specific actions. They are usually short-lived to minimize security risks, and their usage is governed by various protocols such as OAuth 2.0, which is widely used for authorization in cloud services.

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When a client application needs to access a protected resource, it includes the access token in its request to the resource server. The resource server then validates the token, ensuring it is still valid and that the requester has the necessary permissions. If the token is valid, the server grants access to the requested resource. This mechanism helps maintain robust security and control over cloud-based resources and services.

The default action of FEX Cloud Capture is to remove access tokens on disconnection or exit. This is set in **Options** as per section 5 below.

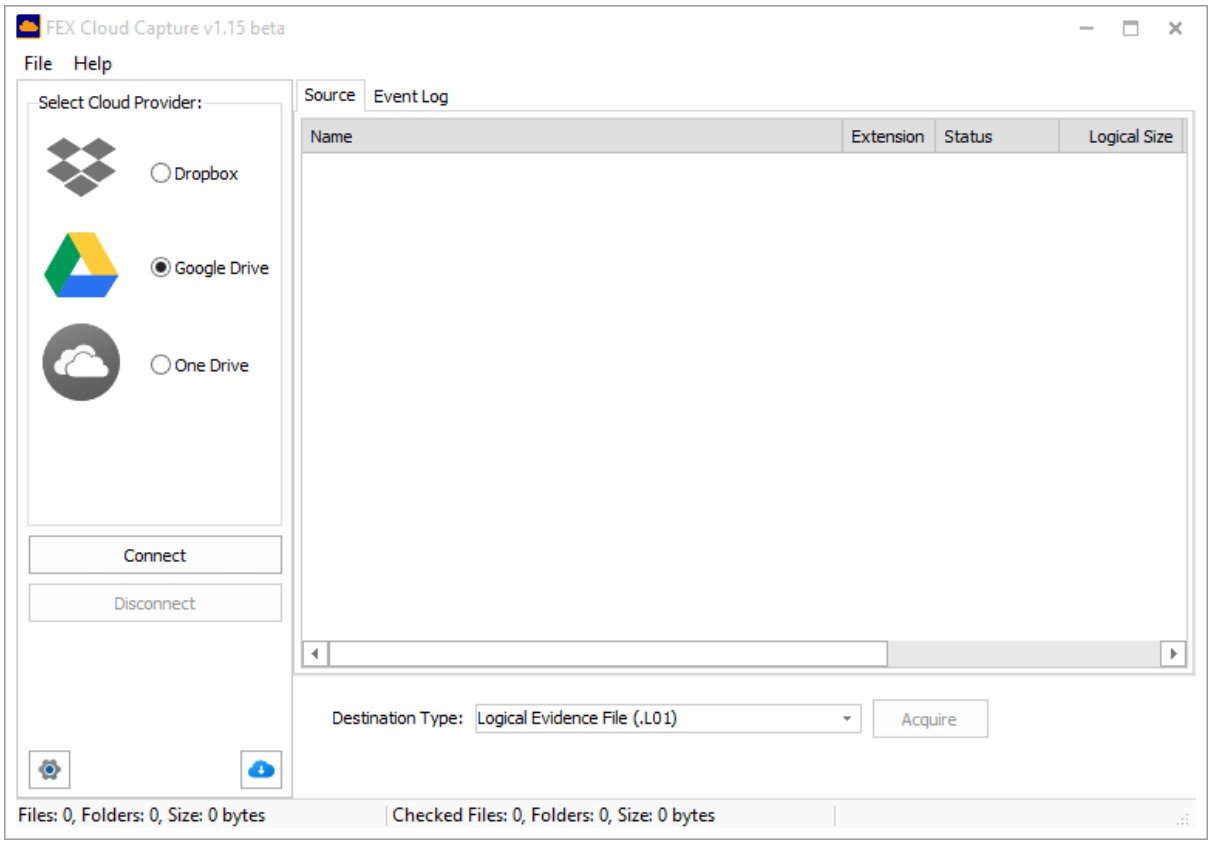
4. RUNNING FEX CLOUD CAPTURE

Launching **FEXCloud.exe** opens the program GUI.

4.1 SELECT THE CLOUD PROVIDER

Select the cloud provider from the left-hand column:

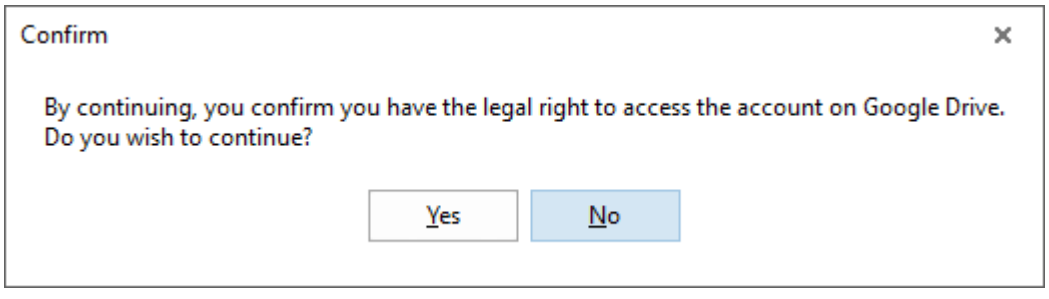
Figure 3: FEX Cloud Capture GUI



4.2 CONNECT

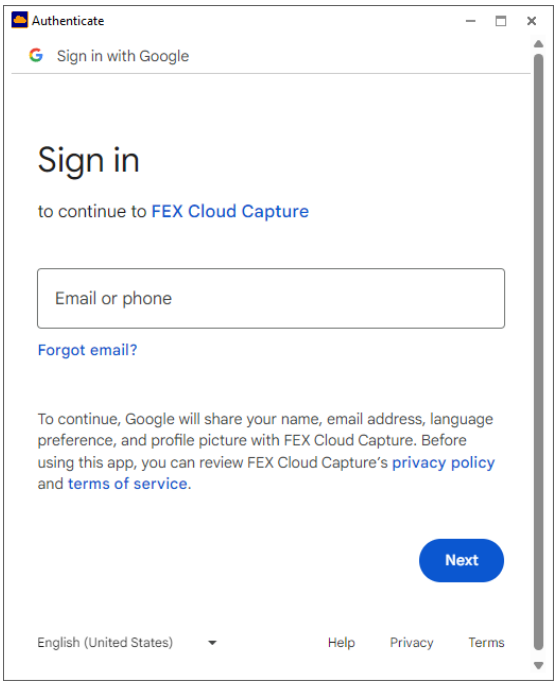
Press the Connect button. You will be prompted with the following confirmation message:

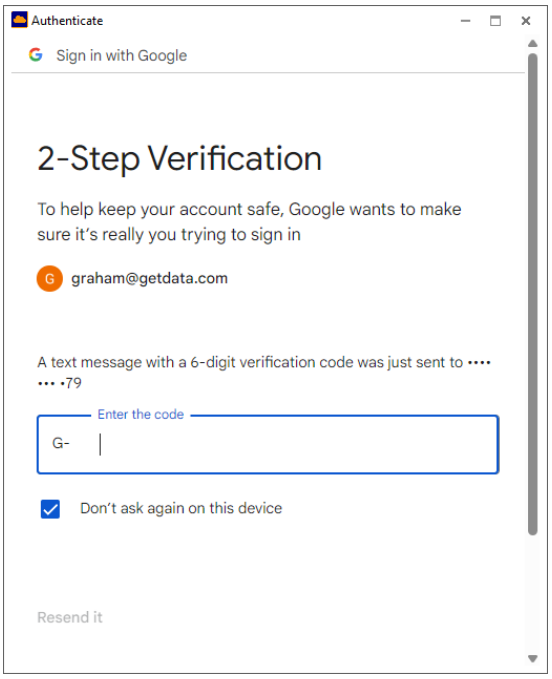
Figure 4: Legal right

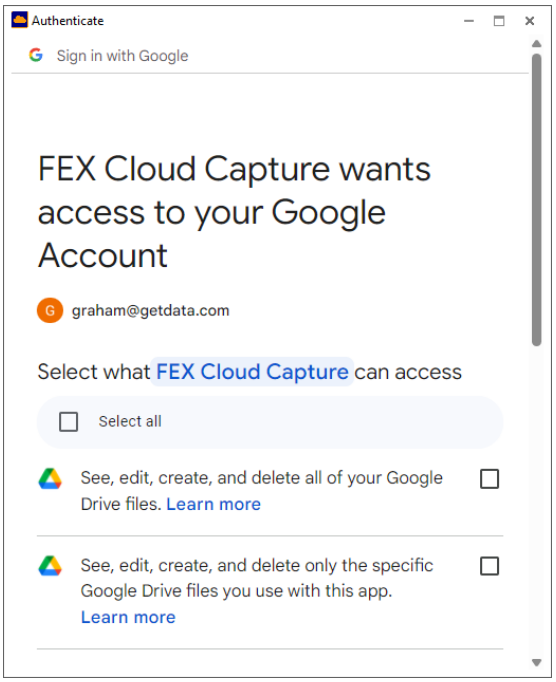


Depending on the cloud provider, you will be prompted with one or more account security questions. This can include a 2-Setp verification procedure:

Figure 5: Account access verification



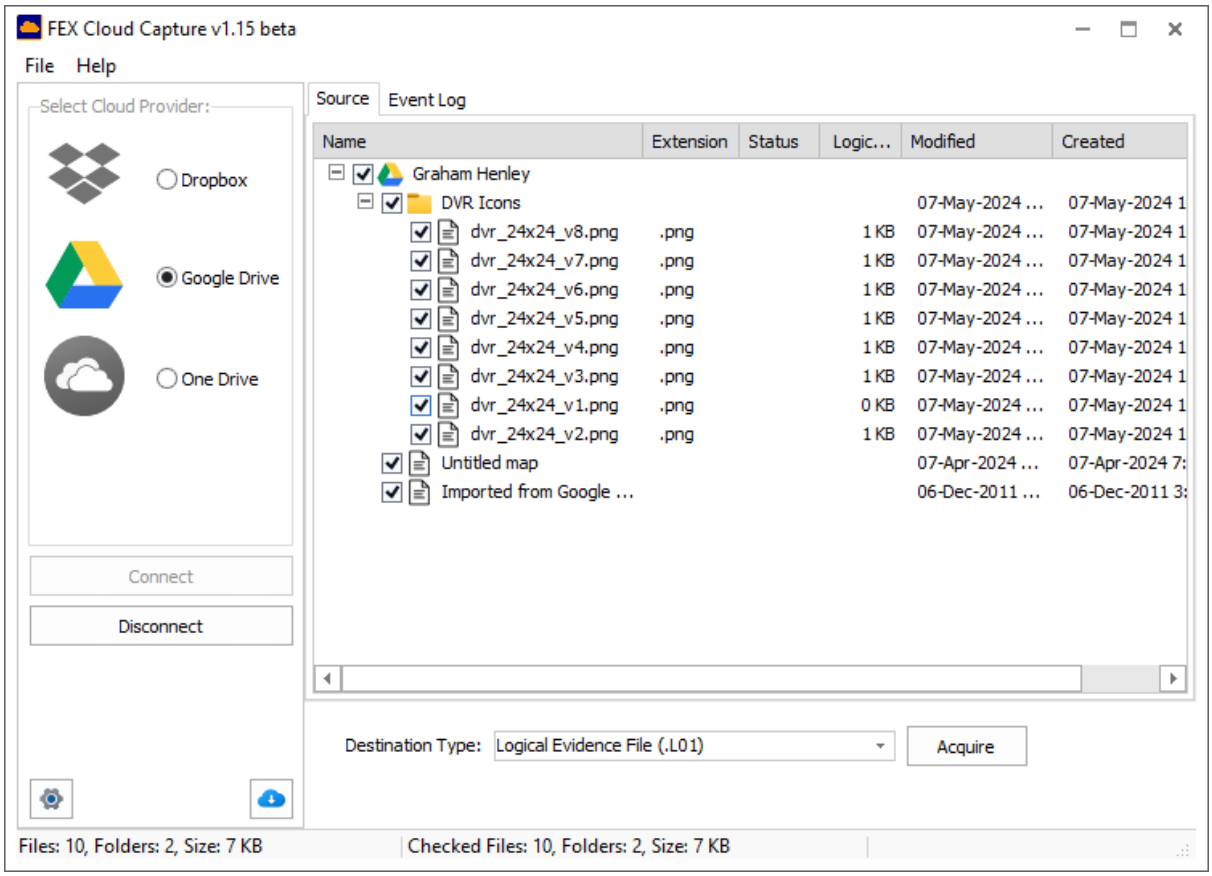




4.3 FILE LIST

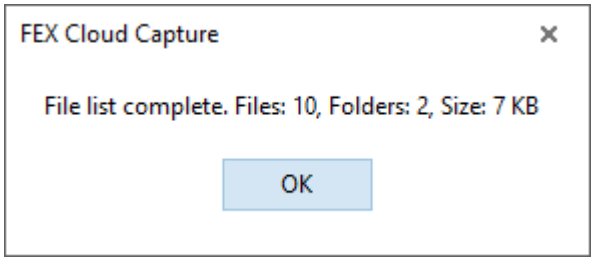
When the connection is made, the FEX Cloud Capture GUI will populate with a list of cloud files in the target account. Depending on the volume of content, this may take several minutes.

Figure 6: Checked Items



A message will display when the file list is complete.

Figure 7: File List.

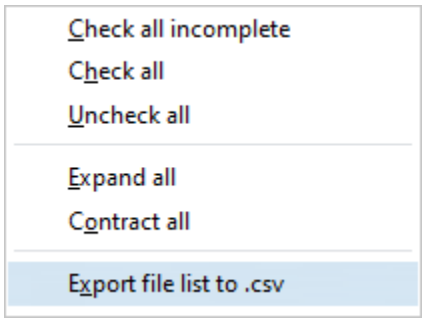


4.4 EXPORT A FILE LIST TO .CSV

To **export a list of files** in the target cloud account **to CSV**:

1. Right-click in the **Source** window.
2. Select **Export file list to .csv** from the drop-down menu:

Figure 8: Export a list of files to CSV.



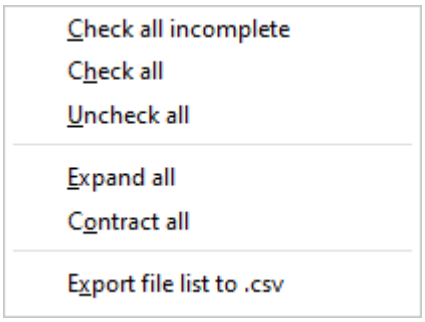
4.5 SELECT (CHECK) FILES TO CAPTURE

The user must select files to acquire by placing a check mark next to the file name, as shown in Figure 6: Checked Items above (the **Acquire** button will not become active until at least one file is selected).

To **select all files**:

- Place a check in the **root** folder and all sub-files and folders will be checked.
- Or right-click and select **Check all** from the menu.

Figure 9: Right-click checking options.



To select **groups of files**:

- Use the **SHIFT** key to select a folder and its entire contents.
- Use the **CTRL** key to select an individual file, or an individual folder and its contents.

4.6 DESTINATION TYPE (ACQUISITION FORMAT)

Each FEX Cloud Capture acquisition will be written to the **downloads** folder with a unique parent folder in the format:

yyyy-mm-hh-mm-ss [Account Name]-[Cloud Provider]

The following acquisition formats are available:

4.6.1 LOGICAL EVIDENCE FILE (L01)

A Logical Evidence File (L01) is a proprietary file format used in digital forensics to store the results of a logical acquisition from a digital device. The L01 format is an extension of the E01 format, used for physical disk images, but tailored for logical acquisitions.

- **Format and Structure**

  The L01 file format is designed to store selected files, folders, and metadata from a digital device or service. It includes a comprehensive metadata header containing information about the acquisition process, such as the date and time of acquisition, the name of the examiner, and the tool used for the acquisition. The structure allows for efficient storage and retrieval of individual files and directories, maintaining their original hierarchy.

- **Data Integrity and Verification**

  The L01 format supports hash values for each file included in the logical acquisition. Hash values are cryptographic fingerprints that ensure the integrity and authenticity of the files.

- **Compression and Encryption**

  The L01 file can be compressed to save storage space, making it easier to manage large volumes of data.

- **Flexibility and Compatibility**

  The L01 format is supported by various forensic analysis tools, making it widely compatible and versatile for investigators. It can be used to acquire data from different types of devices and cloud services.

- **Targeted Data Collection**

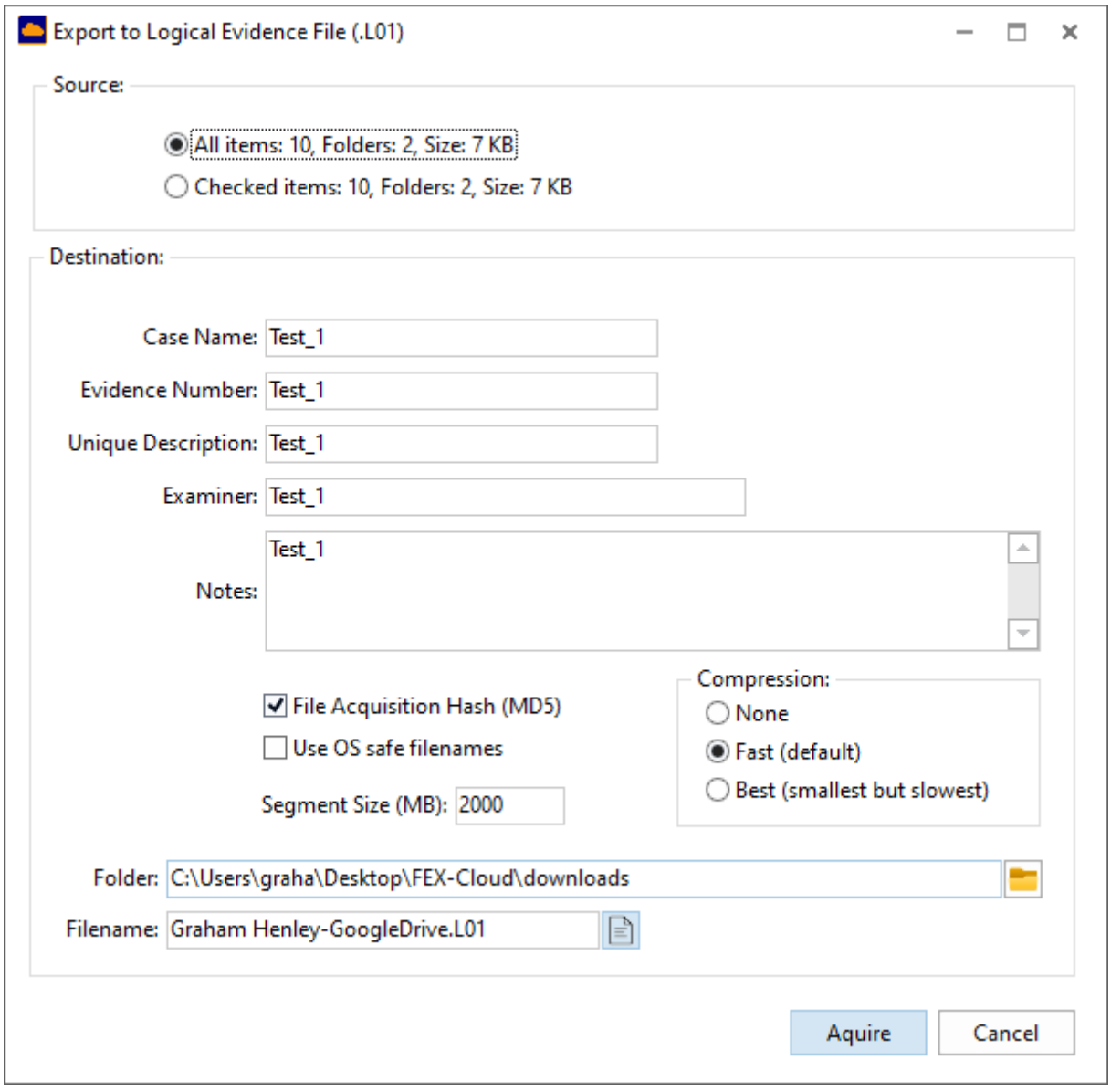
  Logical acquisitions focus on specific files, folders, or data structures rather than capturing an entire disk image. This is particularly useful in cloud environments where complete data sets may not be feasible or necessary. Investigators can select relevant data, reducing the volume of irrelevant information and speeding up the analysis process.

The L01 format allows for targeted data collection, has inbuilt data integrity checksums, and wide compatibility with forensic tools. These attributes make it a powerful format for securely and effectively managing digital evidence. The detailed metadata and hash values included in the L01

file provide robust evidence that can be presented in court, supporting the credibility and reliability of the forensic findings.

When **Logical Evidence File (.L01)** is selected as the **Destination Type** the following window will appear when the **Acquire** button is clicked.

Figure 10: L01 acquisition details.



File Acquisition Hash (MD5):

A MD5 acquisition hash is calculated for each individual file.

Use OS safe filenames:

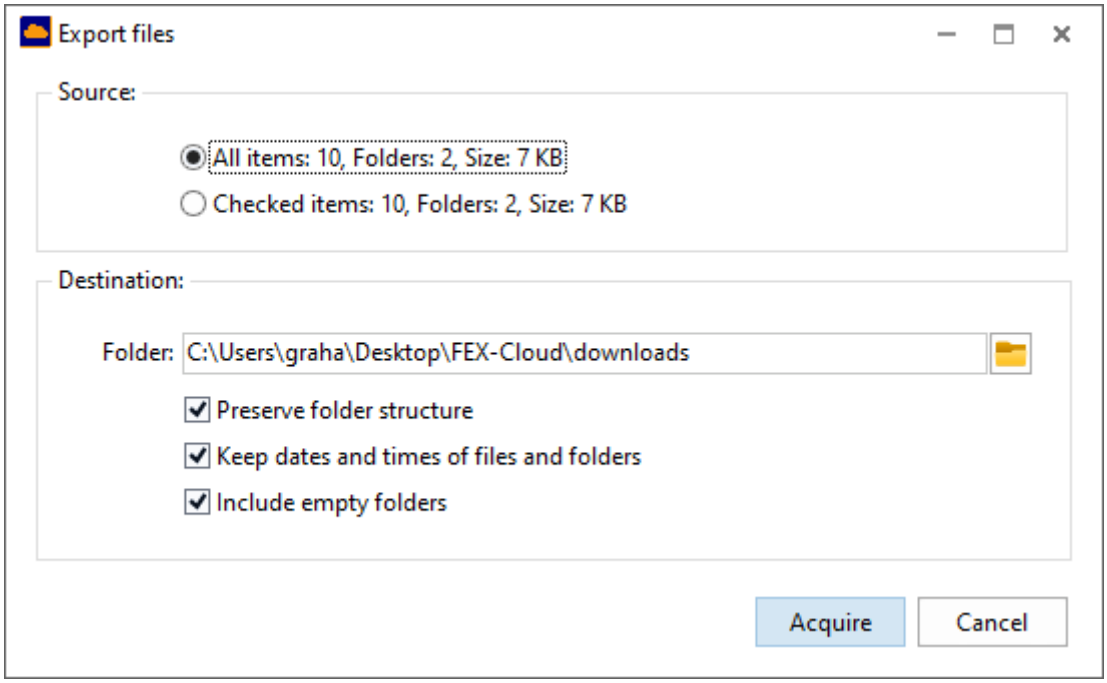
This option is used to ensure that filenames within the L01 are safe in cross-platform use (e.g., Linux to Windows). When this option is checked:

- Characters: #0 .. #31, ':', '\', '/', '?', '>', '<', '*', '|', '"' are replaced by space.
- Blank spaces at the end of filenames are trimmed.

4.6.2 LOCAL FOLDER

The **Destination Type Local Folder** writes acquired folders and files to disk.

Figure 11: Destination Type - Local Folder.



Preserver folder structure:

When checked GUI folder structure for acquired items is kept.

If not selected, the acquired files will be written into a single folder.

Keep dates and times of files and folders:

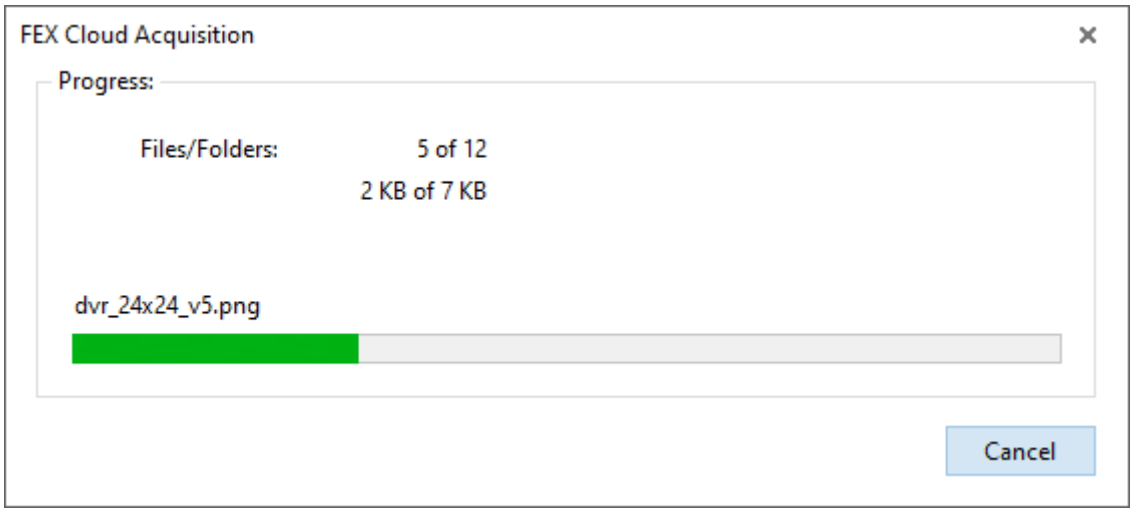
When selected the folder and file date and times shown in the GUI are kept.

If not selected, the date and times reflect acquisition date and time.

4.7 ACQUISITION PROGRESS

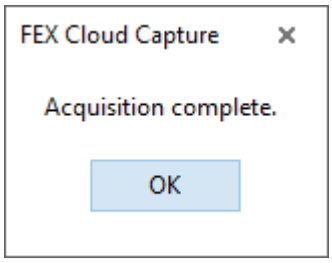
When the **Acquire** button is pressed the acquisition starts and is track with the following progress window:

Figure 12: Acquisition progress.



A message will display when the acquisition is complete:

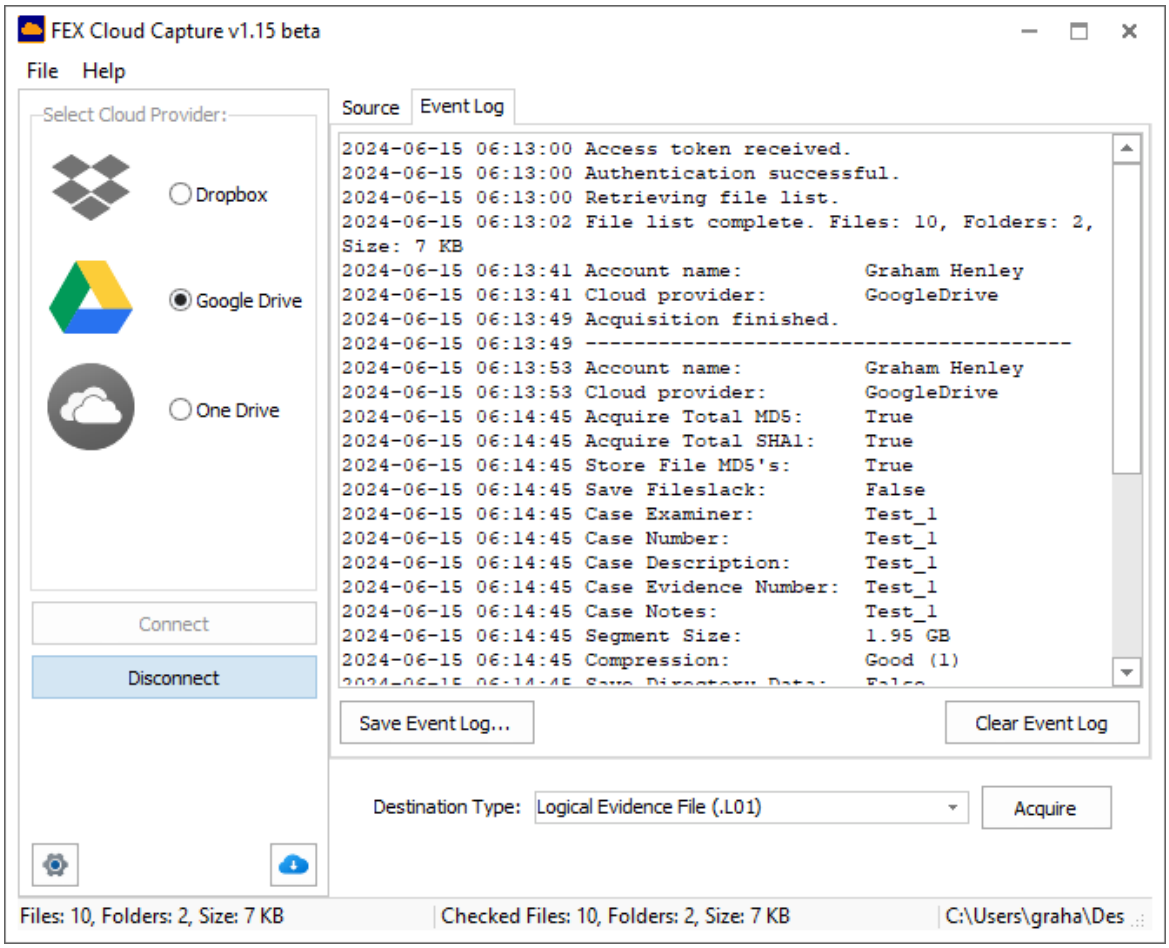
Figure 13: Acquisition complete.



4.8 EVENT LOGS

Acquisition logs are available in the **Event Log** tab. Logs can be exported using the **Save Event Log** button:

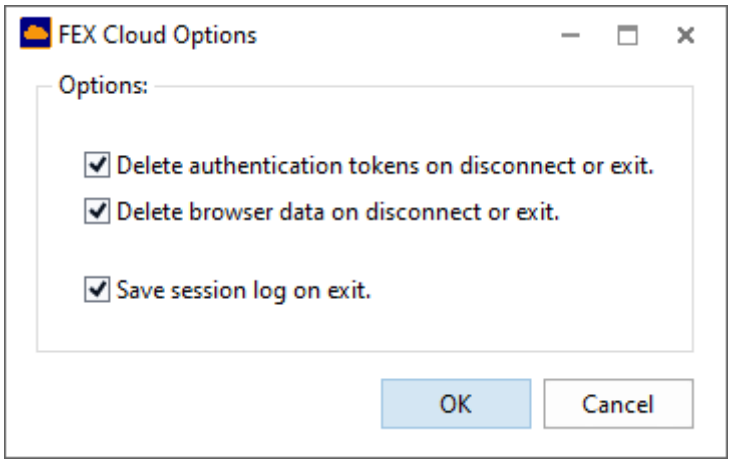
Figure 14: Event Log.



5. FEX CLOUD CAPTURE OPTIONS

 FEX Cloud Capture options are accessed using the options button:

Figure 15: FEX Cloud Capture Options.



 The downloads button gives fast access to the download folder.

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6. Applicable Law

6.1. This Agreement and any dispute relating to the Software or to this Agreement shall be governed by the laws of the State of New South Wales and the Commonwealth of Australia, without regard to any other Country or State choice of law rules.

6.2. You agree and consent that jurisdiction and proper venue for all claims, actions and proceedings of any kind relating to GetData or the matters in this Agreement shall be exclusively in Courts located in NSW, Australia. If any part or provision of this Agreement is held to be unenforceable for any purpose, including but not limited to public policy grounds, then you agree that the remainder of the Agreement shall be fully enforceable as if the unenforced part or provision never existed. There are no third-party beneficiaries, or any promises, obligations or representations made by GetData therein.

7. Export

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10. Translations

10.1. This agreement is translated into other languages. It is the English version which is the language that will be controlling in all respects. No version of this agreement other than English shall be binding or have any effect.

6.2 PRIVACY POLICY

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7. INDEX

8. TABLE OF FIGURES