exterro®
Data Risk Management

FTK CENTRAL 8.2 SP2

AI FEATURE GUIDE

AUGUST 2025

Table of Contents

About Exterro 4

1 FTK Central - Exterro Intelligence 4

1.1 AI Process Workflow 5

1.1.1 Prerequisite 5

1.1.2 Multimedia Intelligence Search 6

1.1.3 Text Summarization 7

1.1.4 AI Server Logs 7

2 Multimedia Intelligence Search 8

2.1 Configurations 8

2.2 Enabling Multimedia Intelligence Search 9

2.2.1 Evidence Processing 9

2.2.2 Additional Analysis 10

2.2.3 Threshold Configuration 11

2.3 Performing Multimedia Search 12

2.4 Search Behaviors 14

2.4.1 Initial Search involving both Processed and Unprocessed Images 14

2.4.2 Repeat Search with Same Filter While Job Is Still Running 15

2.4.3 New Search with a Different Filter (Processing, Processed, and Unprocessed Images) 16

2.4.4 Multimedia Search performed after applying a filter 17

© Exterro, Inc. All rights reserved.

3 Text Summarization 18
3.1 Supported Languages 18
3.2 Enabling Text Summarization 19
3.2.1 Evidence Processing 19
3.2.2 Additional Analysis 20
3.2.3 Viewer Panel 21
3.2.4 Summarization Prompts 23
3.3 Supported Content Types 25
3.3.1 Email Summarization 25
3.3.2 Document Summarization 26
3.3.3 Chat Summarization 27
3.4 Summarization Pane 30
3.5 Adding a New Ollama Model 34
3.5.1 Method 1 – Same User Account used for Both Machine and AI server 35
3.5.2 Method 2 – Different User Accounts used for Machine and AI Server 36
4 Job Queue 38
5 Benchmark Metrics 40
5.1 Multimedia Summarization (MMS) Metrics 40
5.1.1 GPU Metrics 40
5.1.2 CPU Metrics 41
5.2 Text Summarization Metrics 42
5.2.1 GPU Metrics 42
5.2.2 GPU vs CPU Metrics 44
Contact Exterro 47

© Exterro, Inc. All rights reserved.

About Exterro

Exterro was founded with the simple vision that applying the concepts of process optimization and data science to how companies manage digital information and respond to litigation would drive more successful outcomes at a lower cost. We remain committed to this vision today. We deliver a fully integrated Data Risk Management platform that enables our clients to address their privacy, regulatory, compliance, digital forensics, and litigation risks more effectively and at lower costs. We provide software solutions that help some of the world's largest organizations, law enforcement and government agencies work smarter, more efficiently, and support the Rule of Law.

1 FTK Central - Exterro Intelligence

FTK Central includes the following Exterro Intelligence features to help speed up investigations and make evidence analysis more efficient and accurate.

- Multimedia Intelligence Search
- AI Text Summarization

© Exterro, Inc. All rights reserved.

1.1 AI Process Workflow

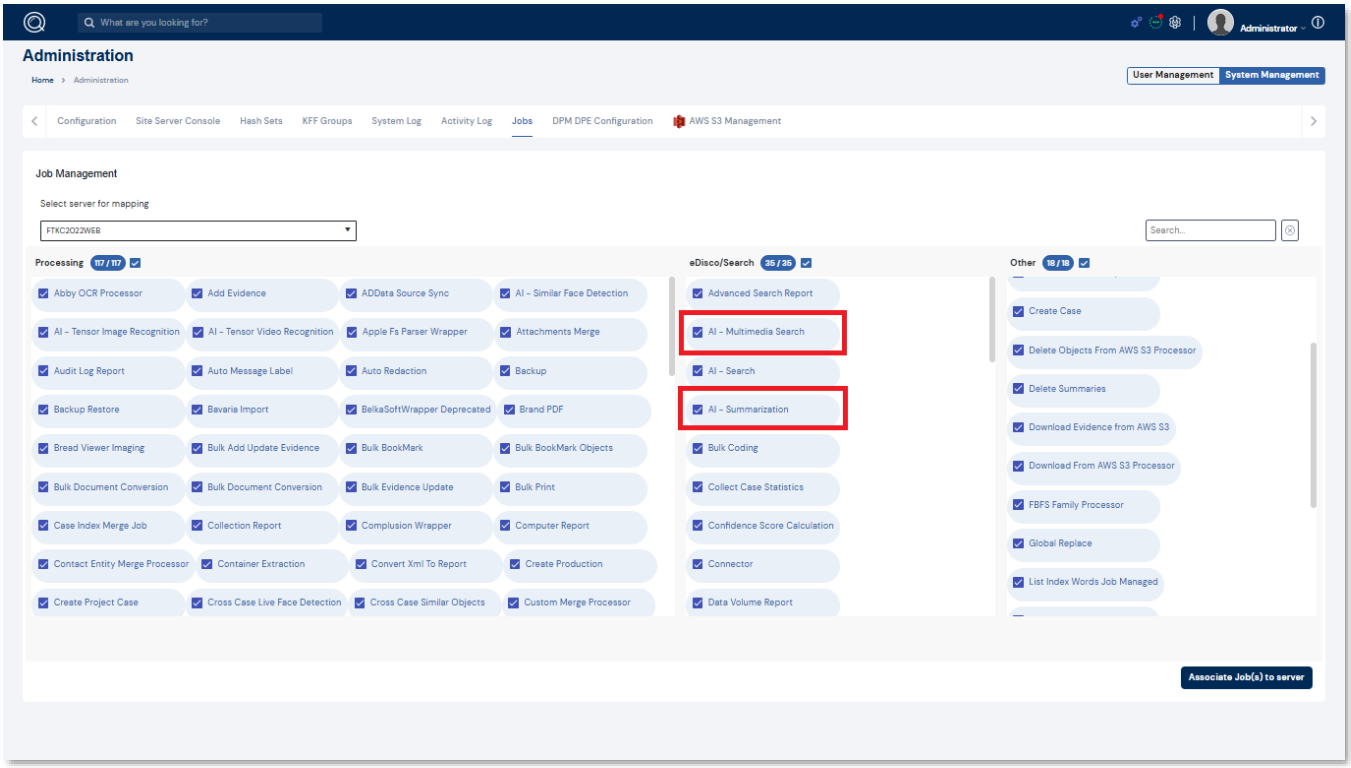
1.1.1 Prerequisite

The following AI jobs will be automatically mapped in FTK Central System Management:

- AI Multimedia Search
- AI Summarization

However, you are recommended to ensure the same in the 'Jobs' section of System Management in FTK Central.

Navigation: *FTK Central Homepage > Administration > System Management > Jobs*



© Exterro, Inc. All rights reserved.

1.1.2 Multimedia Intelligence Search

- AI Multimedia preprocessing jobs use a PostgreSQL database to persist the embeddings of images extracted from multimedia search preprocessing jobs. In a distributed AI server environment, each AI server should not have its own PostgreSQL setup. AI servers act purely as processing engines and utilize a centralized PostgreSQL database to store data and enable text search.
- In this setup, FTK Central bundles the case images and sends the payload to any available AI server to pick up the job and process it. For proper functionality, images for a particular case must be stored in the same PostgreSQL server. Therefore, all servers associated with a particular FTK Central build should use a single AI PostgreSQL server.
- Multimedia Intelligence Search can be processed in both CPU and GPU environments. It can utilize multiple CPUs, multiple GPUs, or a combination of both, depending on resource availability.
- Compared to CPUs, GPUs offer significantly faster processing times, especially for large-scale image analysis.
- Images are split into batches and dispatched to available CPU and GPU resources for parallel processing.
- The AI server can also run on CPU-only machines; however, AI jobs are computationally intensive and may take significantly longer (several days for larger volumes of objects) to complete without GPU acceleration.

Example: When there are 10,000 images to process, the workload is divided into batches based on the rule below:

- Each batch would be a ZIP file that can include either up to 300 images or 200 MB in size.
- If 70 images collectively reach the 200 MB limit, those 70 images will be processed as a single batch.

Note: *If an individual image file exceeds 200 MB, it will be handled as a single batch to ensure proper processing.*

1.1.2.1 GPU Scaling

For faster processing, it is recommended that you use multiple AI Servers, which can parallelly process multiple batches for AI jobs. The prerequisites and steps to configure multiple AI servers are available in the 'FTK - AI Server Installation Guide'.

© Exterro, Inc. All rights reserved.

1.1.3 Text Summarization

- Text Summarization can be processed in both CPU and GPU environments. It can utilize multiple CPUs, GPUs, or a combination of both, depending on resource availability.
- When only a CPU is available, the system uses the BART model, which generates summaries without citations.
- When a GPU is available, the system uses the Llama 3.2 model, which provides summaries with citations.
- Files are split into batches and dispatched to available CPU and GPU resources for processing.
- The AI server can also run on CPU-only machines; however, AI jobs are computationally intensive and may take significantly longer (several days for larger volumes of objects) to complete without GPU acceleration.

Example: When 1000 files (containing 400 emails, 400 documents, and 200 chat conversations) are to be processed, 5 ZIPs, each containing 200 files, will be created and sent to the AI server for processing.

- Initially, FTK Central will send a batch to the first configured AI server for processing. If that server's GPU resources are completely occupied, the batch will be sent to the next configured AI server. This process is repeated in a round-robin method for subsequent batches to ensure all AI servers receive workloads for processing.

1.1.3.1 Consolidated and Segmented Summaries

- Consolidated and segmented summaries are generated based on the context length and GPU processing power of the model.
- When the total number of words in a file exceeds the estimated word count (derived from model context length and GPU processing power), the text is automatically split into manageable segments.
- Each segment is summarized individually (segmented summaries).
- The model then uses these segmented summaries to generate a final consolidated summary, offering an overview of the entire content.

1.1.4 AI Server Logs

You can access the AI Server logs from the location provided below:

C:\Program Files\AccessData\tf\tfdata\temp\log.txt

© Exterro, Inc. All rights reserved.

2 Multimedia Intelligence Search

Multimedia Intelligence Search is an AI-powered feature that helps investigators find relevant images in a case by analyzing their visual content. Instead of relying on file names, users can enter keywords (such as “car,” “people,” or “gun,”) and the feature will return matching images that contain the corresponding objects. This makes it faster and easier to search through large sets of multimedia evidence.

Note: *Multimedia Intelligence Search is currently supported only for images.*

2.1 Configurations

The following properties with the corresponding values in the **ADG WebLabSelfHost** configuration file are available for Multimedia Intelligence:

Property	Description	Value
MaxAIPreProcessingThreads	The maximum number of Threads to be used while running the AI MMS Job ***Note:*** *The number of threads should be twice the number of AI servers used.* *MaxAIPreProcessingThreads value = 2 * Number of AI servers used in the application.*	6
PreprocessorZipSize	The total volume of files to be batched in a single ZIP file for the AI MMS Job	200
PreprocessorfileCount	The maximum number of files in a batch for the AI MMS Job	300

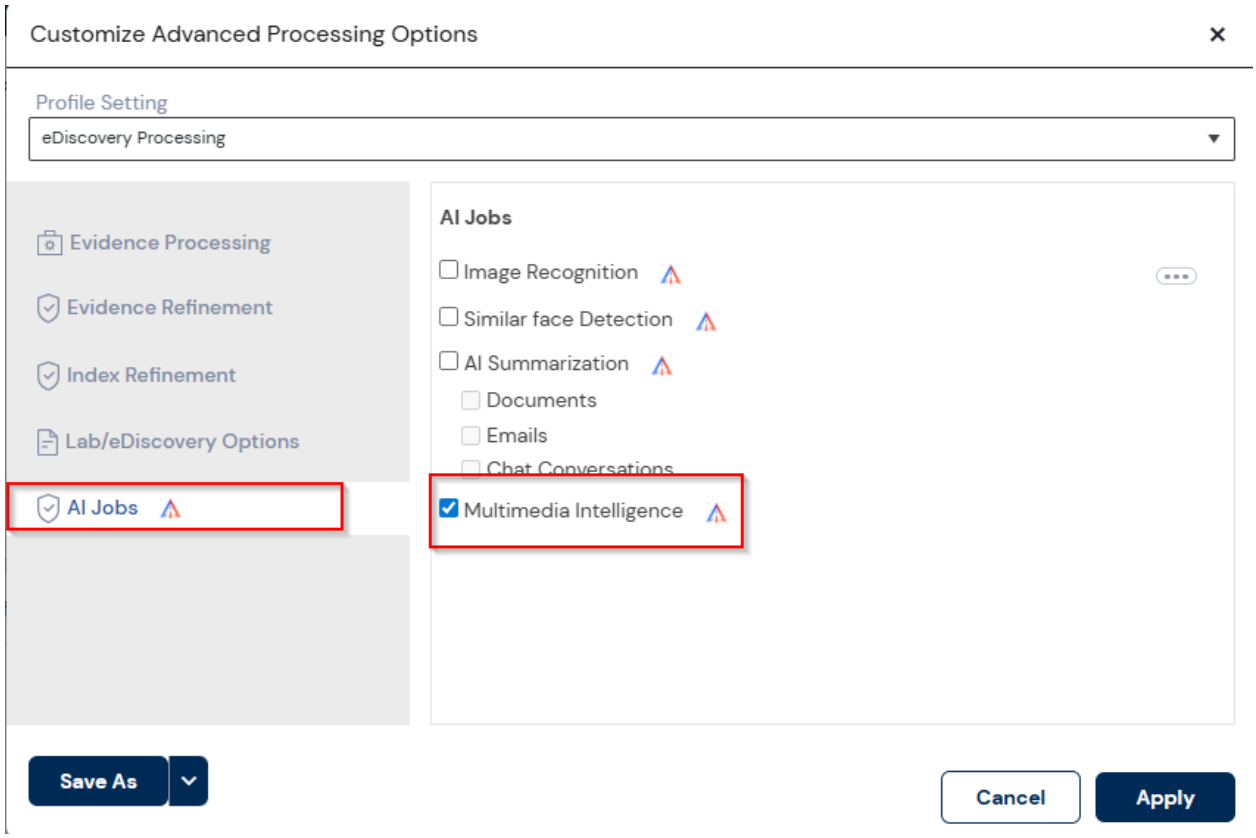
© Exterro, Inc. All rights reserved.

2.2 Enabling Multimedia Intelligence Search

2.2.1 Evidence Processing

To enable the Multimedia Intelligence Search while processing the evidence:

1. Click on the **Customize** option from the **Processing Evidence** section in **Create Case** page or **Create Summary** page.
2. Select **AI Jobs** from the left pane
3. Enable the **Multimedia Intelligence** option from the right pane.



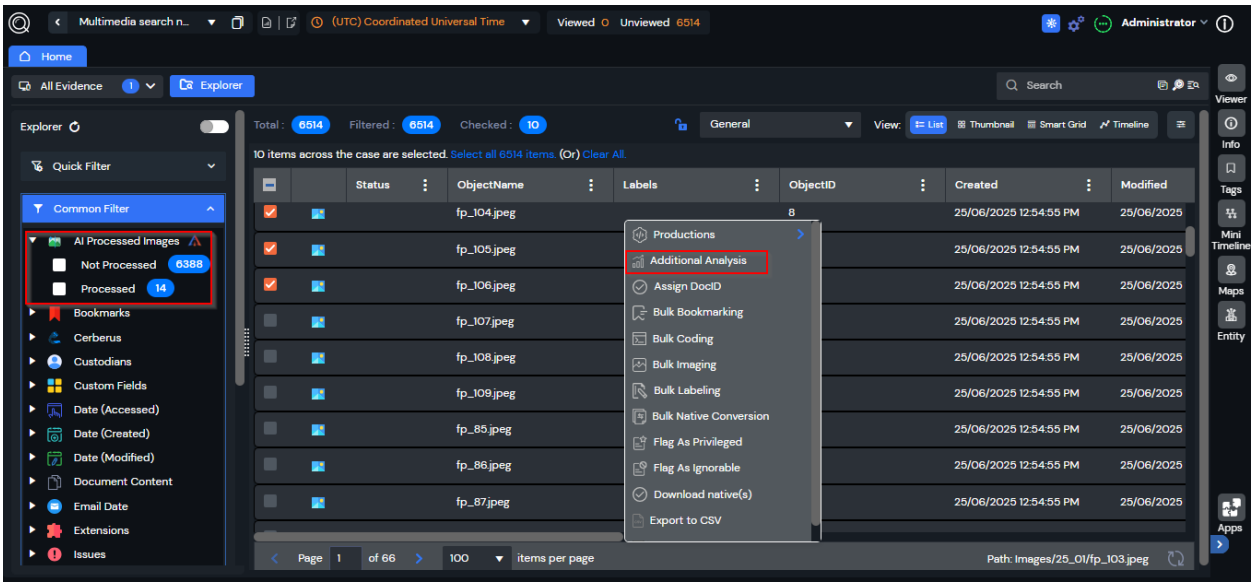
4. Click on **Apply**.

© Exterro, Inc. All rights reserved.

2.2.2 Additional Analysis

To enable the Multimedia Intelligence Search via Additional Analysis:

1. Navigate to the Review page of a Case.
2. Select the required files.
3. Right-click and select **Additional Analysis**.



4. Select **AI Jobs** from the left pane
5. Enable the **Multimedia Intelligence** option from the right pane.
6. Click on **Apply**.

Note: *You can quickly filter the images processed with the Multimedia Intelligence option using the* ***AI Processed Images*** *filter in* ***Common Filters*** *consisting of the following filtering options:*

- *Processed – Lists all images that have already been processed.*
- *Not Processed – Lists images that are yet to be processed.*

This way you can quickly filter and select the ***Not Processed*** *images intended to perform the Additional Analysis.*

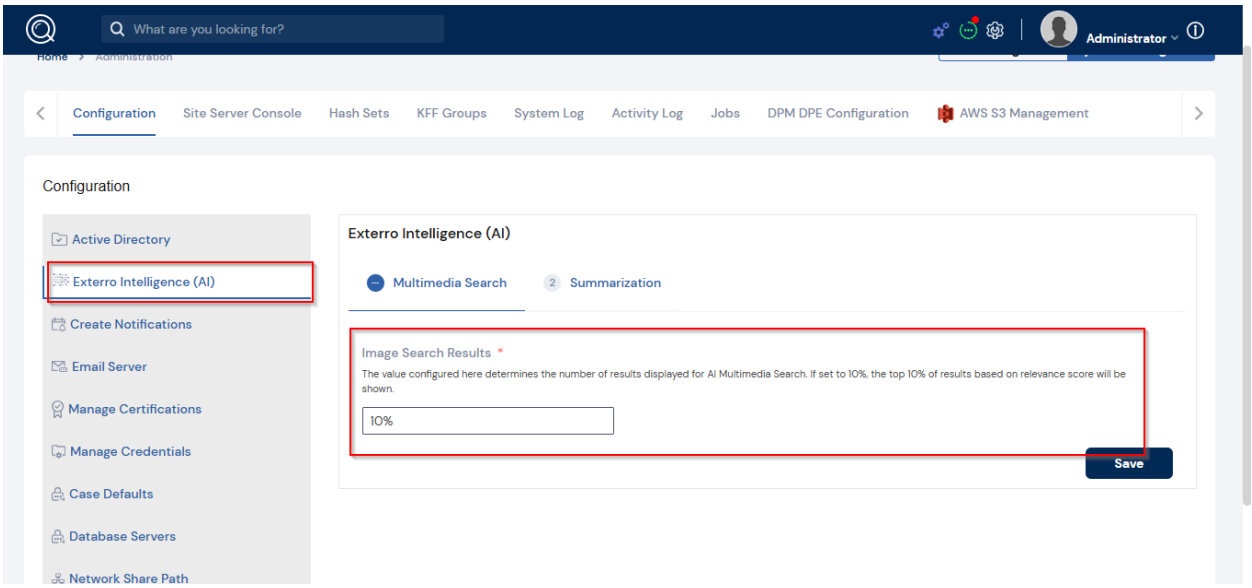
© Exterro, Inc. All rights reserved.

2.2.3 Threshold Configuration

You can configure the multimedia search results threshold i.e., to display a specific percentage of the total results which contains the highest relevancy score.

The threshold can be configured in the Image Search Results field in the below location:

Administration > System Management > Configuration > Exterro Intelligence > Multimedia Search.



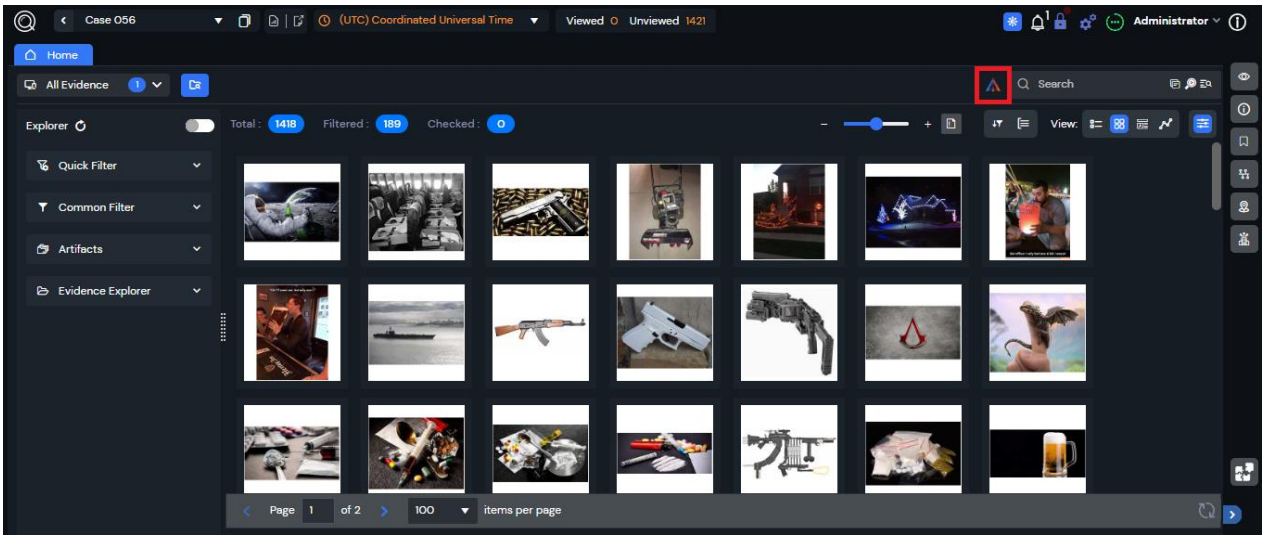
Notes:

- *The value provided in this field will be set as the default value for the **Result** field in the **Multimedia Search** mode of **Thumbnail** view. However, you can change the **Result** value based on your preference for each search.*
- *You can also adjust the percentage value from the Results field in Thumbnail View when the Multimedia Search is enabled.*

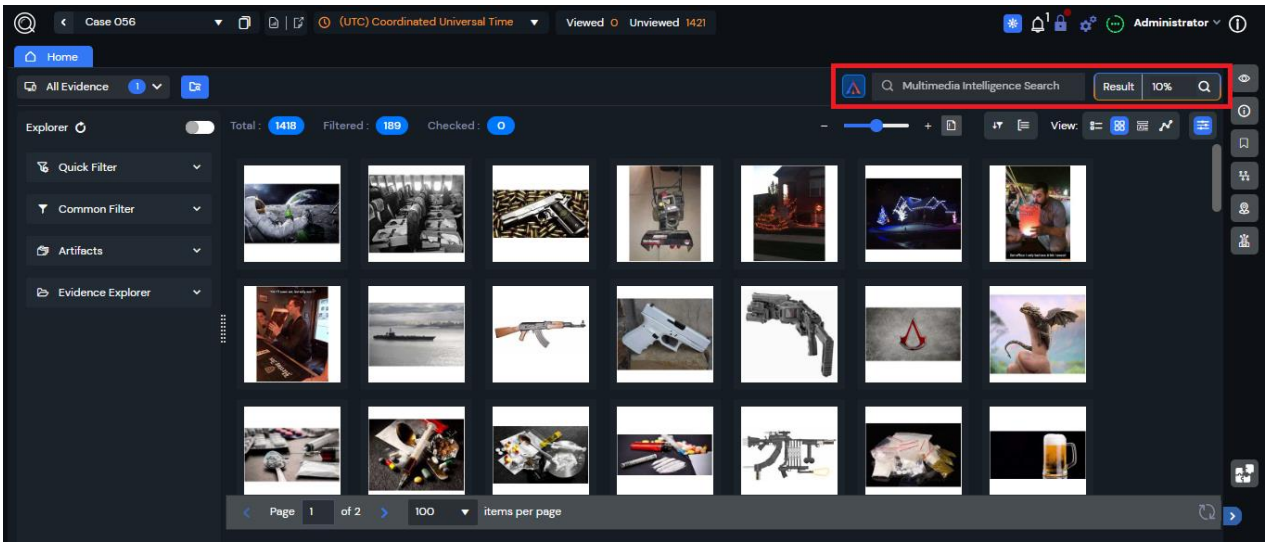
© Exterro, Inc. All rights reserved.

2.3 Performing Multimedia Search

Once the processing is completed, the **Multimedia Intelligence Search** icon will appear in **Thumbnail View**.



You can click on the icon to activate the AI search mode, transforming the standard search bar into an AI-powered search interface.



Note: *While in AI Search mode, other search controls such as Relationships, Live Search, and Advanced Search will be hidden. Once the AI search mode is disabled, users will return to the standard search functionality, and all search options will become visible again*

© Exterro, Inc. All rights reserved.

The results of the AI Multimedia Search are generated based on a ranking model, not limited to exact keyword matches. While the most relevant (searched) items appear at the top, the system may also include other images below them. Users have control to adjust the number of returned results.

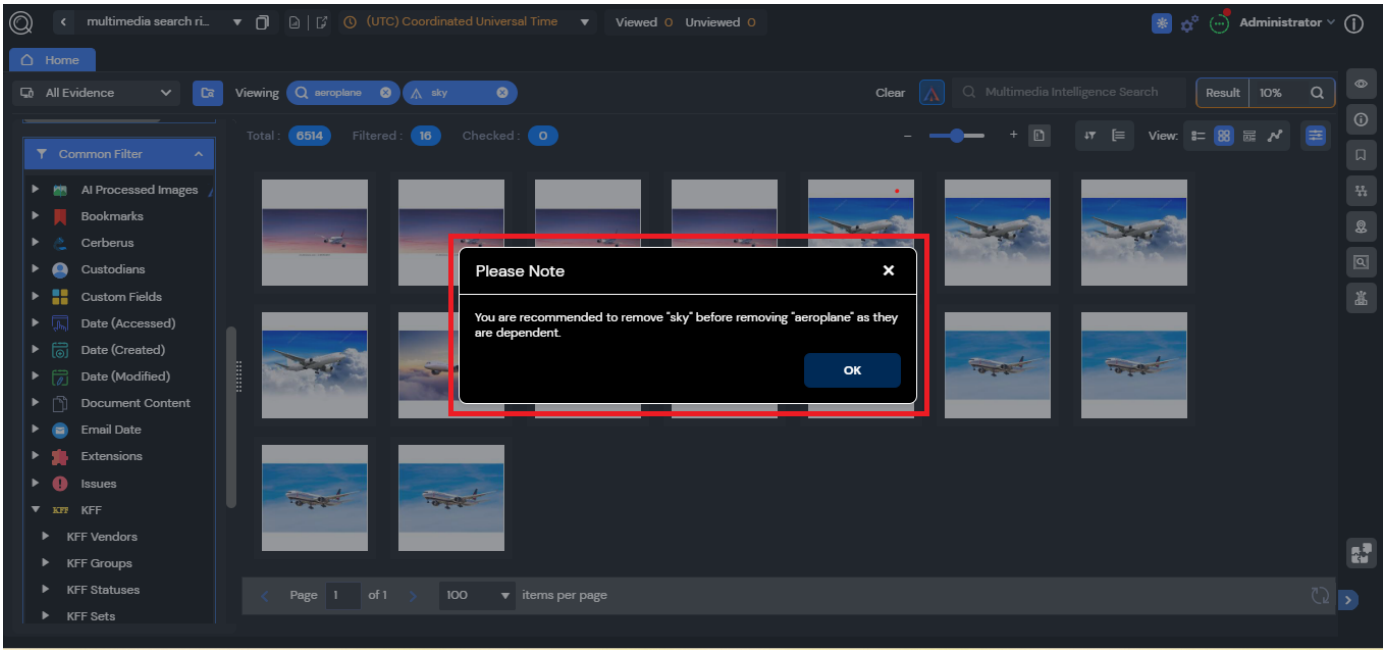
Example:

- Total Pre-processed Images: 1000
- Keywords Searched: “car,” “gun,” etc.
- Default Result Percentage: 10%
- Results Displayed: 100 images

If the result percentage is adjusted to 5%, only the top 50 images (based on AI relevance) will be shown. This flexibility allows users to balance precision and breadth in their search results depending on their investigative needs.

Notes:

- *A comma delimiter can be used to perform searches with multiple keywords.*
- *Nested Searches are not supported.*
- *You cannot remove the searches or filters that were applied before performing the multimedia search, since the search process was dependent on those filtered items. Therefore, it is recommended that you remove the multimedia search before removing the other searches/filters.*

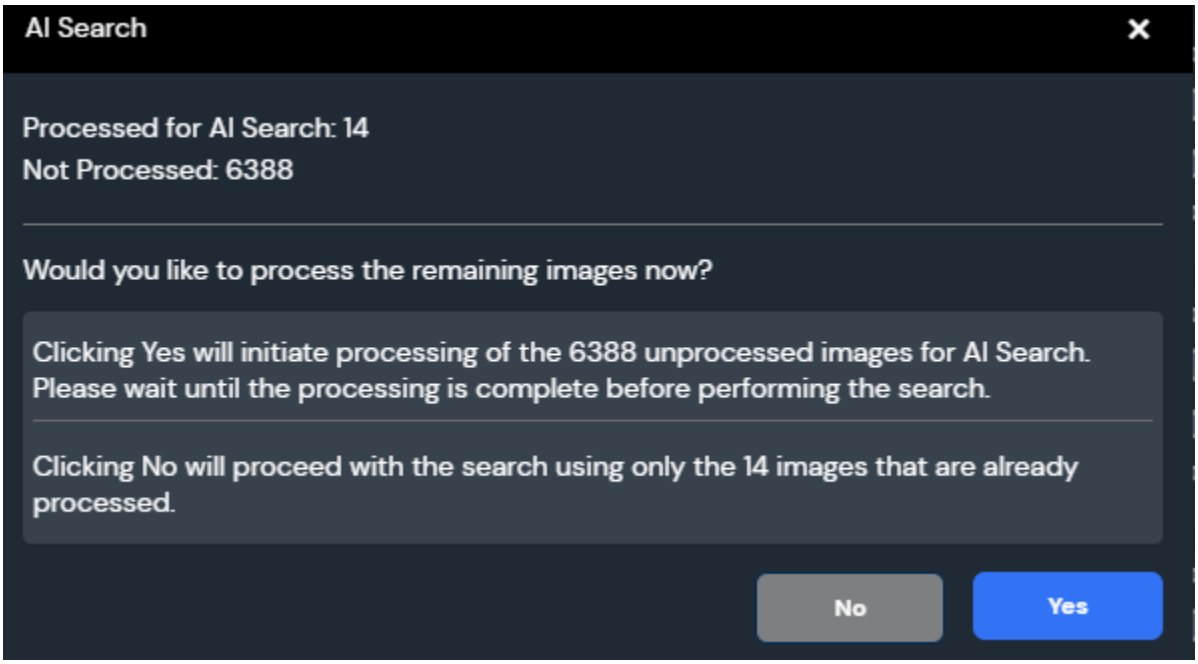


© Exterro, Inc. All rights reserved.

2.4 Search Behaviors

2.4.1 Initial Search involving both Processed and Unprocessed Images

When a search is performed that includes both processed and not processed images, the **AI Search** pop-up is displayed along with clarification on how the search should be performed.



Example:

For the scenario:

- Processed for AI Search: 1000
- Not Processed: 200

You can click on any one of the buttons below to perform the corresponding action:

- **Yes** – To initiate processing of the 200 unprocessed images. You must wait until processing is complete before continuing the AI search.
- **No** – To proceed with the search using only the 1000 already processed images

© Exterro, Inc. All rights reserved.

2.4.2 Repeat Search with Same Filter While Job Is Still Running

If another search is performed using the same filter while the previous AI processing job is still running, the **AI Search** pop-up is displayed to indicate the current processing status with the options to proceed (Ok/Cancel)

Example: For the scenario:

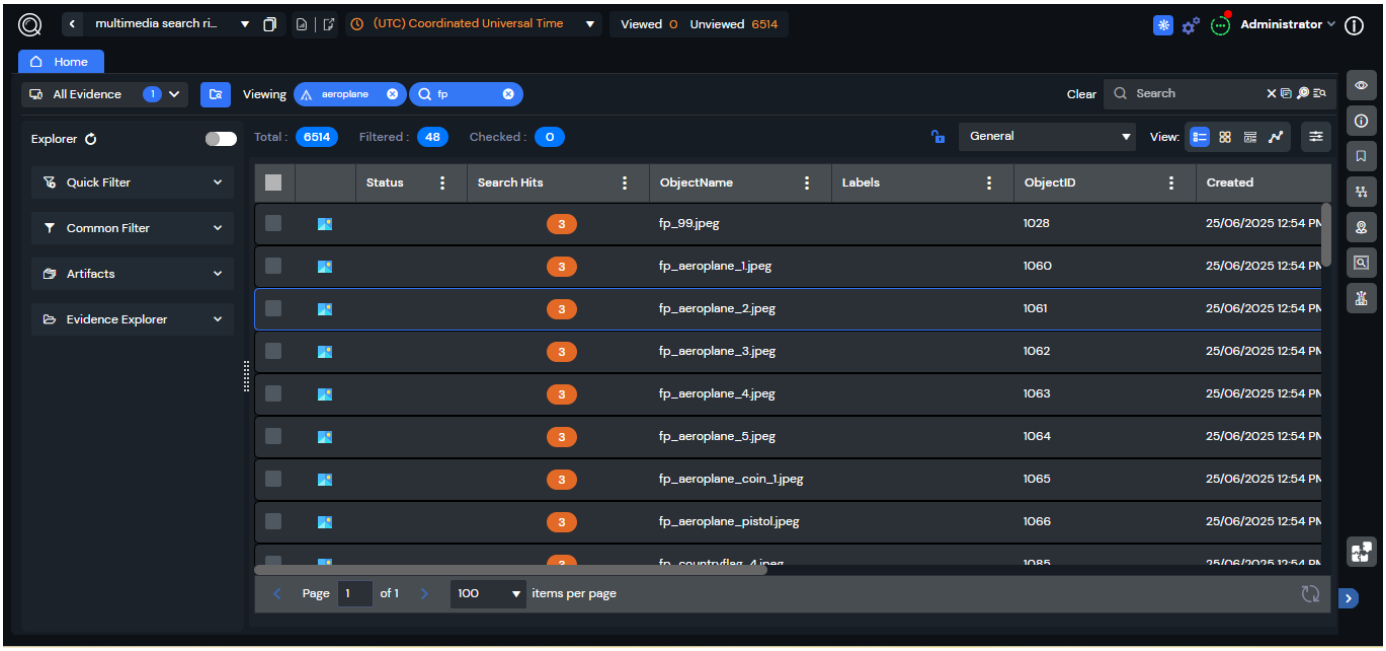
- Processed for AI Search: 1000
- Processing In Progress: 200
- Not Processed: 0

You can click on any one of the following to perform the corresponding action:

- **OK** – To continue the search using the already processed 1000 images.
- **Cancel** – To cancel the search.

Notes:

- *After the multimedia search is completed in the Thumbnail view, you can navigate to other views to add more filters and searches.*

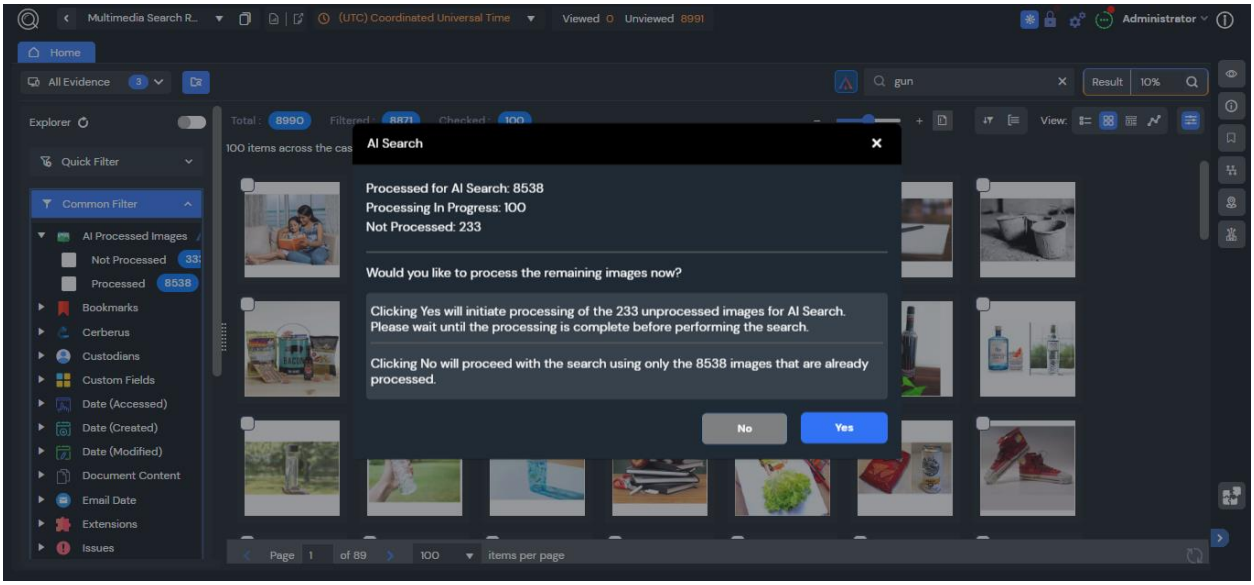


- *You can also navigate to a different view while the multimedia search is in progress. The view you navigated to initially displays all the files. After the processing is completed, the view automatically displays the corresponding results.*

© Exterro, Inc. All rights reserved.

2.4.3 New Search with a Different Filter (Processing, Processed, and Unprocessed Images)

Upon performing a new search using a different filter for the dataset including a mix of processing, processed, and not processed images, the AI Search pop-up is displayed to clarify on how to proceed with the search.



Example: For the below scenario:

- Processed for AI Search: 1000
- Processing In Progress: 500
- Not Processed: 200

You can click on any one of the following options to perform the corresponding action:

- **Yes** – To initiate processing for the 200 unprocessed images. You should wait until processing is completed before continuing the AI search.
- **No** – To proceed with the search using only the 1000 images that are already processed.

© Exterro, Inc. All rights reserved.

2.4.4 Multimedia Search performed after applying a filter

When the multimedia search (configured with a specific Result percentage) is performed after applying filters or searches, the results will be based on the AI search results of the total processed images available in the case.

Example:

- Total Processed Images: 1000
- AI search percentage: 10%
- AI search results: 100 images

A filter is applied to the dataset; only 500 images meet the filter criteria. When the search is performed, the system compares the AI search results with the filtered set:

- If the filtered set search result contains all 100 images from the AI search = 100 images displayed
- If the filtered set search result contains only 40 images from the AI search = 40 images displayed

© Exterro, Inc. All rights reserved.

3 Text Summarization

Text Summarization is an AI-driven process that automatically generates a concise version of a longer piece of text while preserving its key information. It enables users to quickly understand the core message of large volumes of content without reading the full text.

3.1 Supported Languages

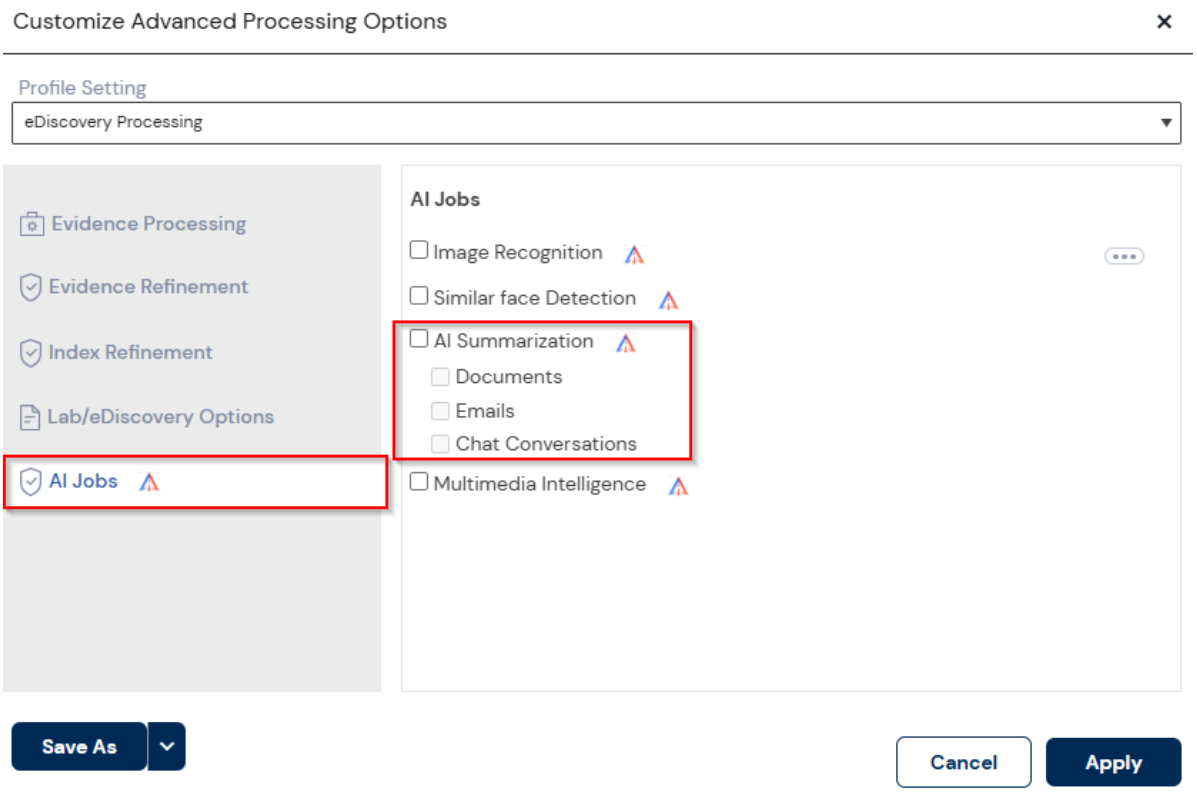
- **BART model** - The summaries will be generated in the corresponding source language without citations.
- **Llama model** - The summarizations will be processed for the following languages. However, the summaries will be generated only in English with citations.
    - English
    - German
    - French
    - Italian
    - Portuguese
    - Hindi
    - Spanish
    - Thai

© Exterro, Inc. All rights reserved.

3.2 Enabling Text Summarization

3.2.1 Evidence Processing

1. Click on the **Customize** option from the **Processing Evidence** section in the **Create Case** page and **Case Summary** page.
2. Select **AI Jobs** from the left pane.
3. Enable the **AI Summarization** option and select the required file types from the right pane.

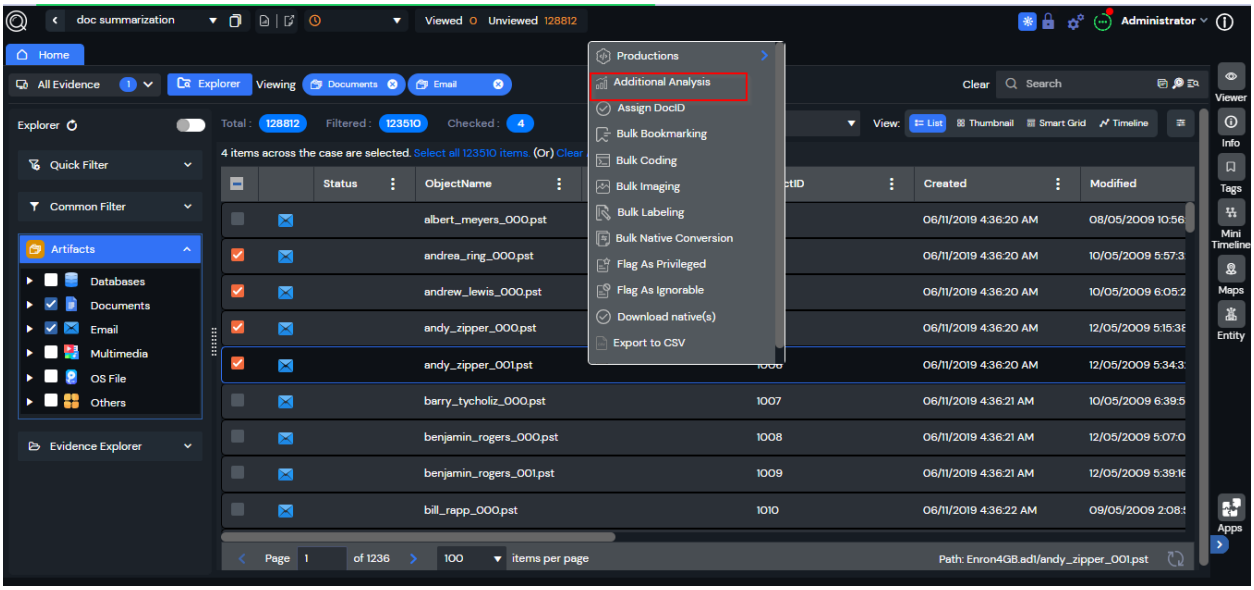


4. Click on **Apply**.

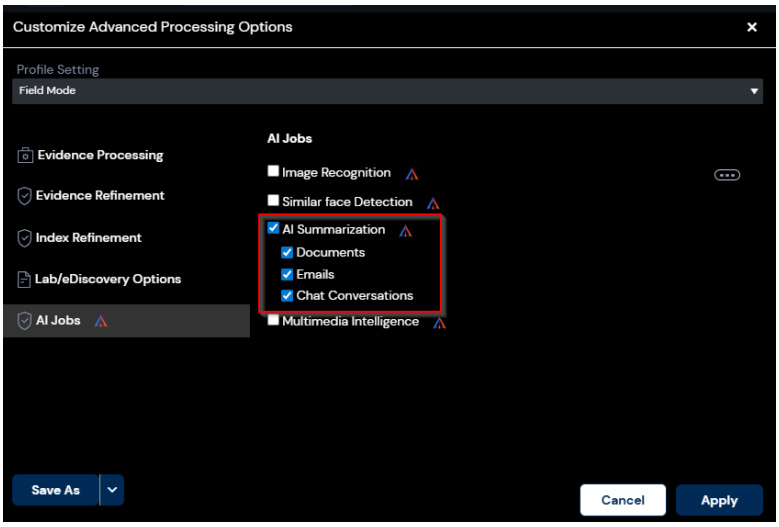
© Exterro, Inc. All rights reserved.

3.2.2 Additional Analysis

1. Navigate to the Review page of a Case.
2. Select the required files.
3. Right-click and select **Additional Analysis**.



7. Select **AI Jobs** from the left pane
8. Enable the **AI Summarization** option and select the required file types from the right pane.
9. Click on **Apply**.

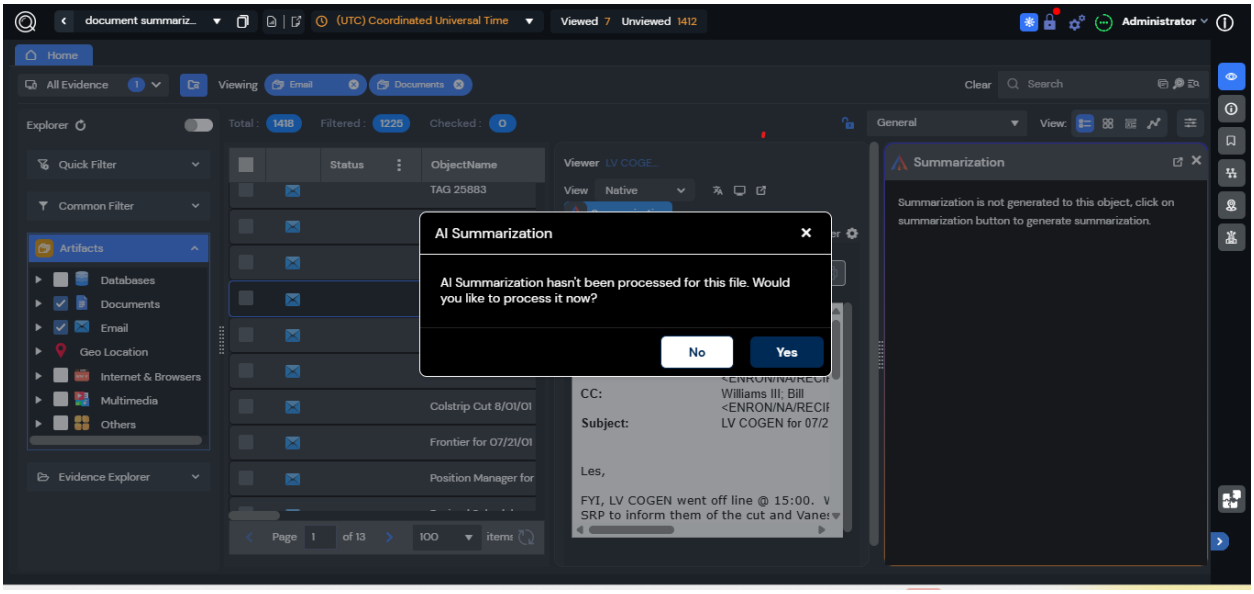


© Exterro, Inc. All rights reserved.

3.2.3 Viewer Panel

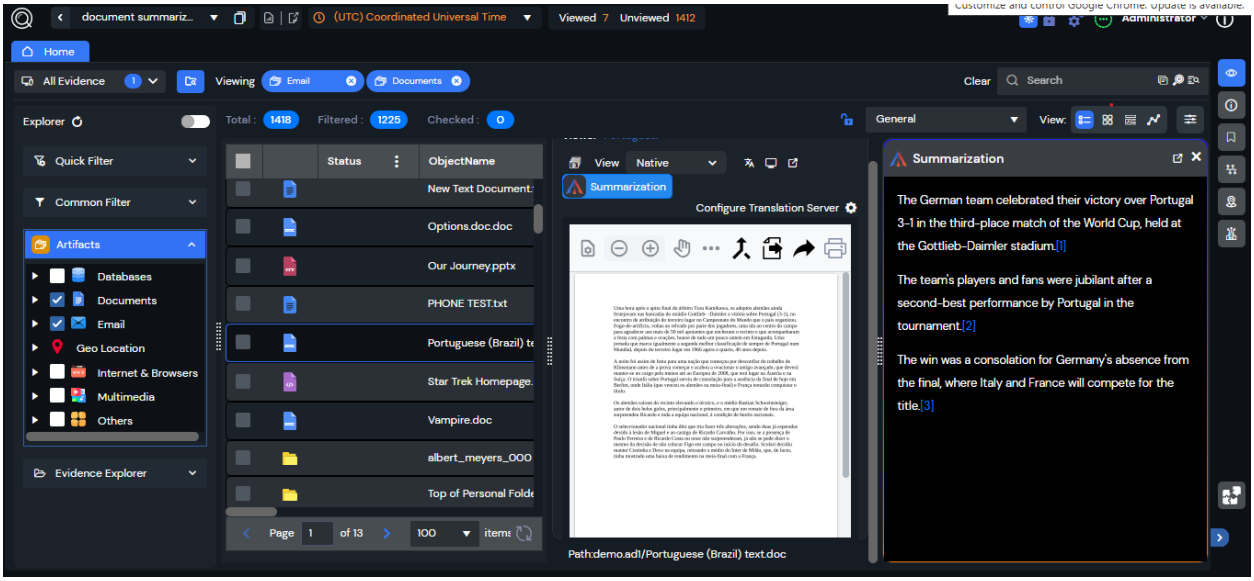
While viewing the Email, Document, or Chat Conversation in the Viewer Panel of Review page, the **AI Summarization** icon will be displayed. You can click on the button to perform any one of the below provided actions:

- If summarization is not already processed for the selected file, the **AI Summarization** pop-up will be displayed, prompting you to perform the summarization. You can click on **Yes** to proceed or **No** to cancel it.



© Exterro, Inc. All rights reserved.

- If the summarization has already been processed, the **Summarization** pane will be displayed containing the summarized content.



© Exterro, Inc. All rights reserved.

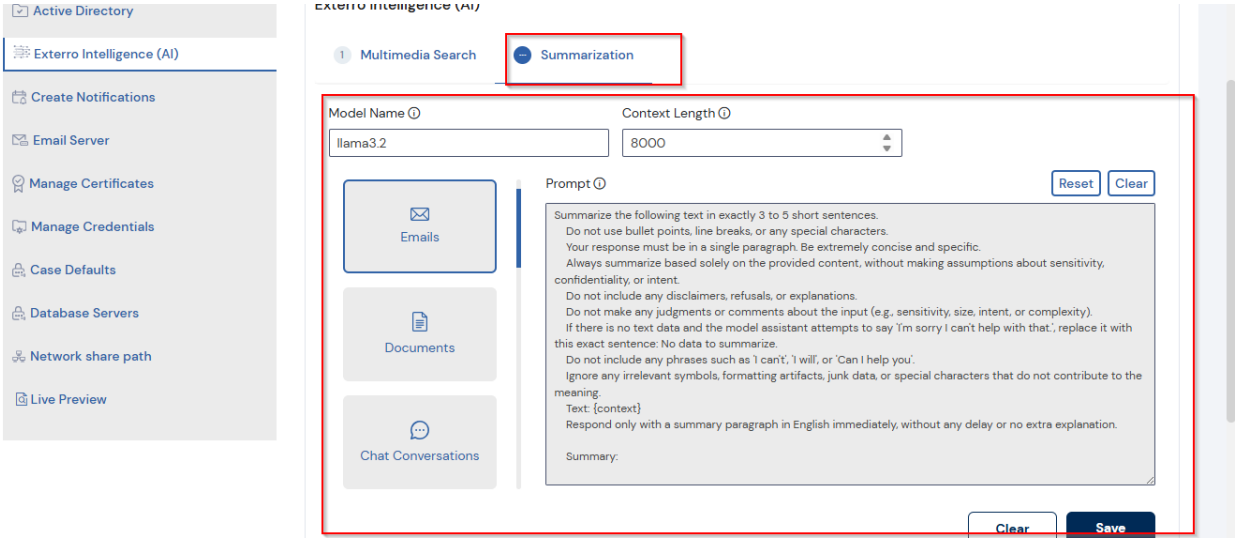
3.2.4 Summarization Prompts

You can configure the below fields to determine how the overall summarization process should be performed for the Email, Chat, and Documents:

Location: *Administration > System Management > Configuration > Exterro Intelligence > Summarization*

- **Model Name** – The AI model intended to perform the summarization.
- **Context Length** – The maximum number of characters that can be utilized while generating the summary.
- **Prompt** – You can meticulously describe and instruct the application on how the summarization should be performed (such as, what all information is expected in the summary, how the summary should be presented, etc.)

  You can set up different Prompt instruction sets for each file type by choosing the required file type from the left pane.



© Exterro, Inc. All rights reserved.

Notes:

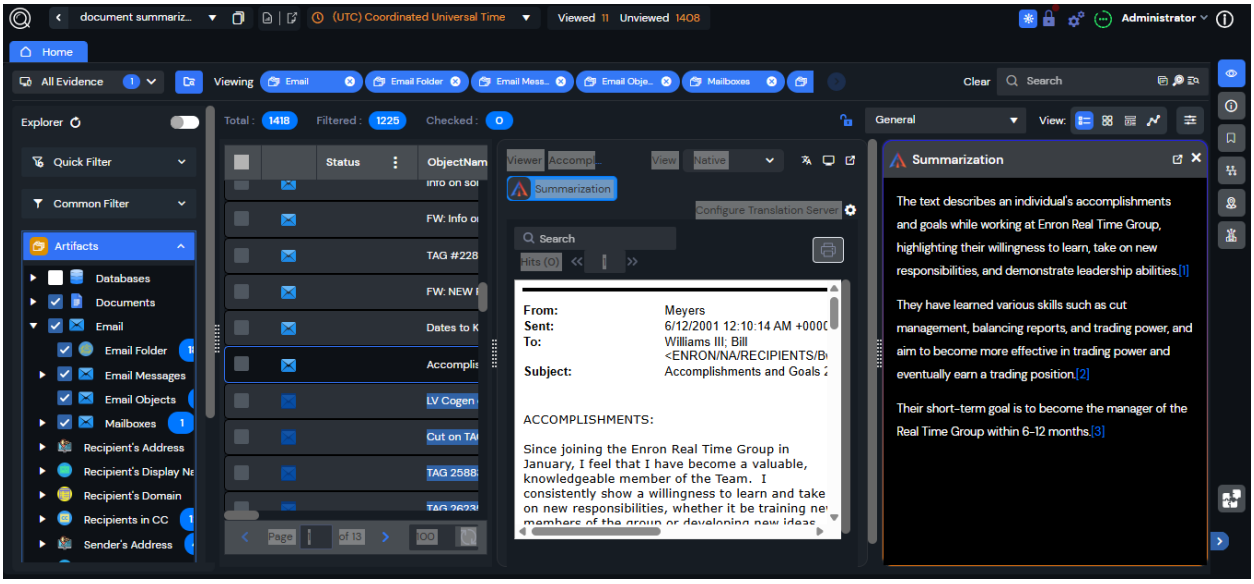
- *By default, these fields are pre-configured by the AI server. However, you can modify them as needed to suit specific summarization requirements for each data type.*
- *You are recommended to be cautious while making any modifications to the default prompts section. The default prompts provided by Exterro are designed to provide the best summary results, and modifying the prompts will not always give accurate results based on the modification.*
- *If you have modified the prompts and want to restore the default prompts provided by Exterro, you can click on the* ***Reset*** *button.*
- *The AI Server code relies on the "Text: {context}" section of the default prompts. If it's removed from the prompt, the content of the records being summarized will not be sent to the AI Server. As a result, the* ***Summarization failed: Input data is either contextually sparse or contains high noise levels*** *message will be displayed.*

© Exterro, Inc. All rights reserved.

3.3 Supported Content Types

3.3.1 Email Summarization

- Summarizes both short and long email threads.

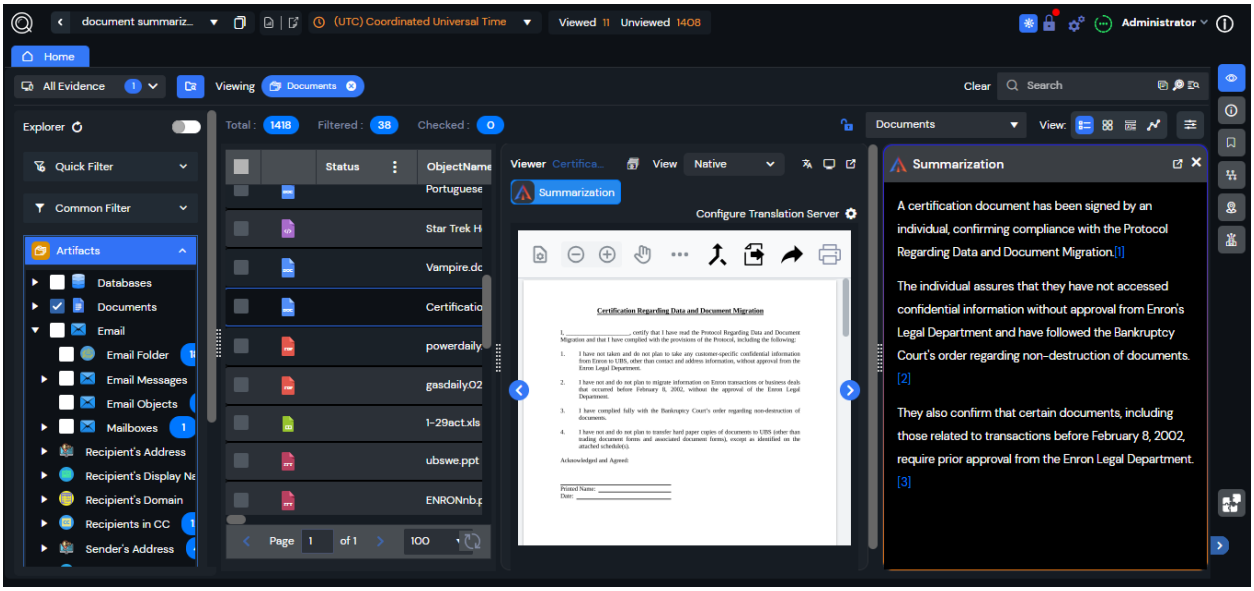


Note: *Once summarization Job is triggered for emails, it cannot be triggered again.*

© Exterro, Inc. All rights reserved.

3.3.2 Document Summarization

- Condenses lengthy documents into core summaries.

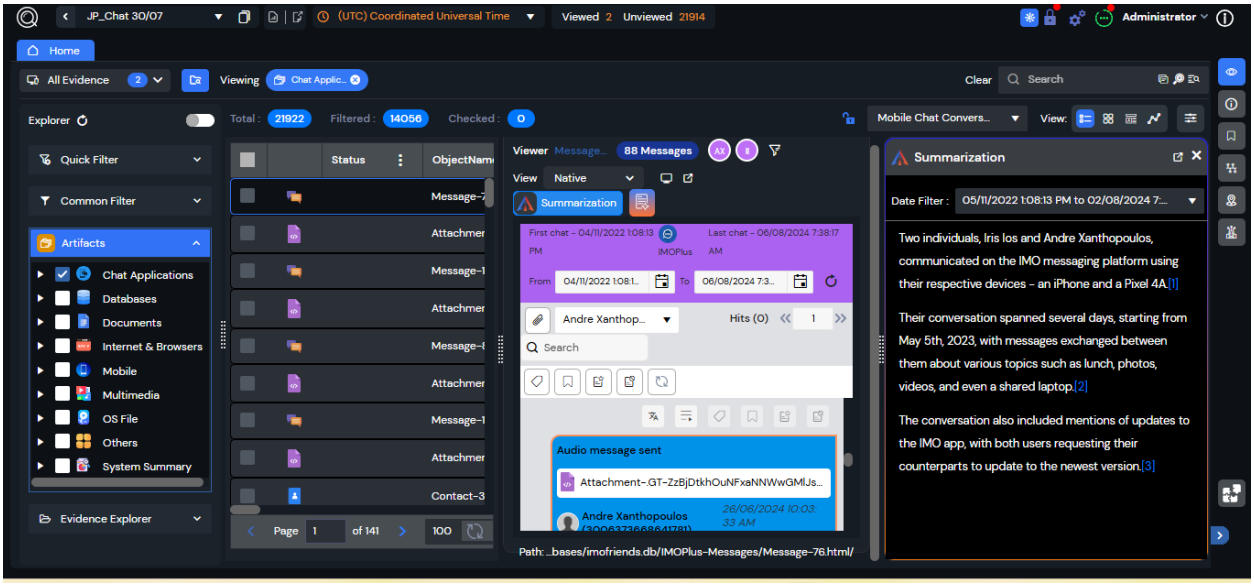


Note: *The summarization can be triggered only once for documents.*

© Exterro, Inc. All rights reserved.

3.3.3 Chat Summarization

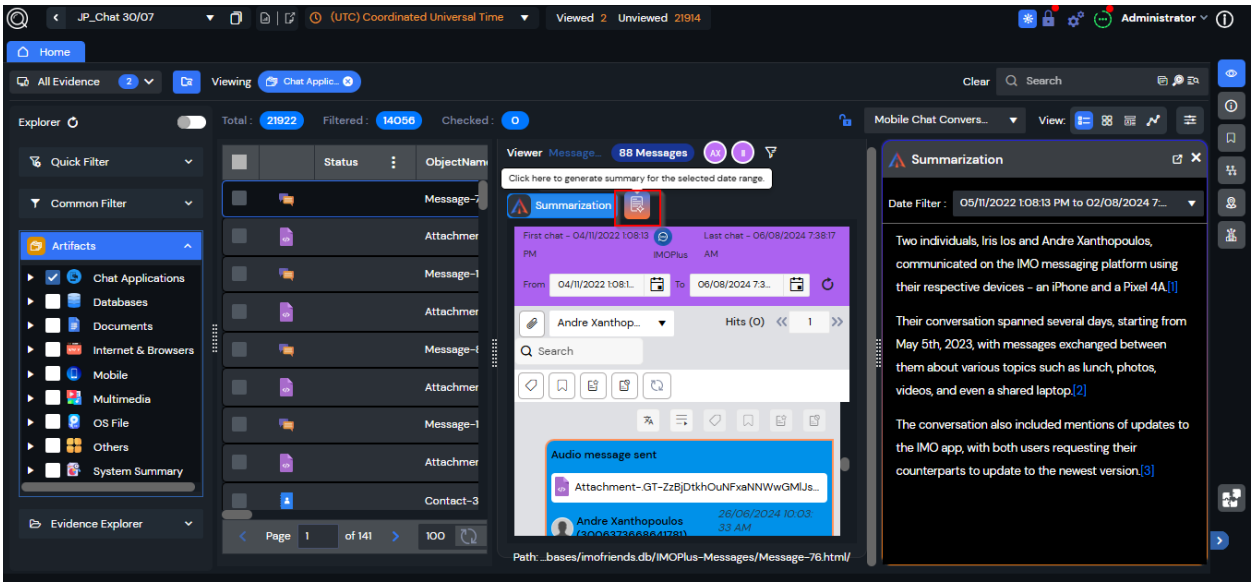
- Supports both one-on-one and group conversations.
- Currently supports text-based chats only (non-media content).



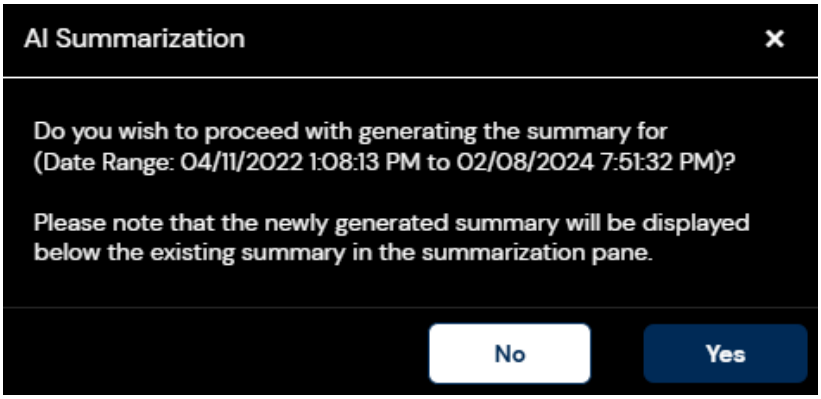
© Exterro, Inc. All rights reserved.

3.3.3.1 Additional Feature

For chat conversations, an additional Regenerate button is displayed against the **Summarization** icon to generate summaries for different date ranges.

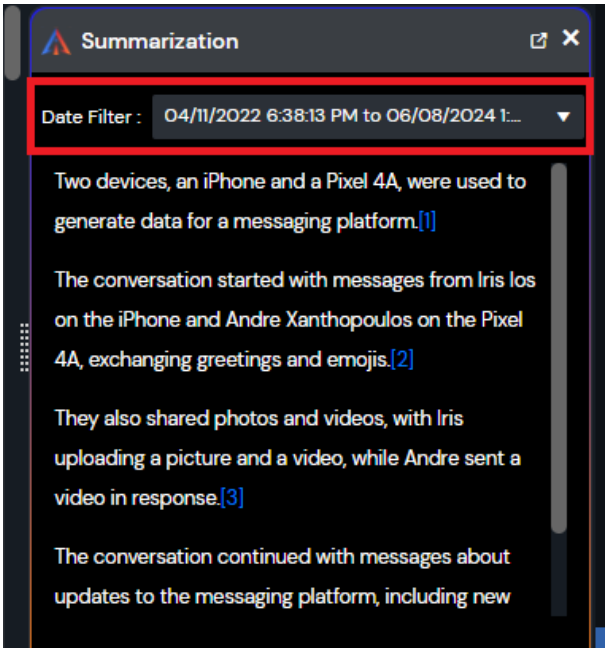


You can configure different date filters in the chat viewer and click on to generate summary containing only the chats within that specific date range.

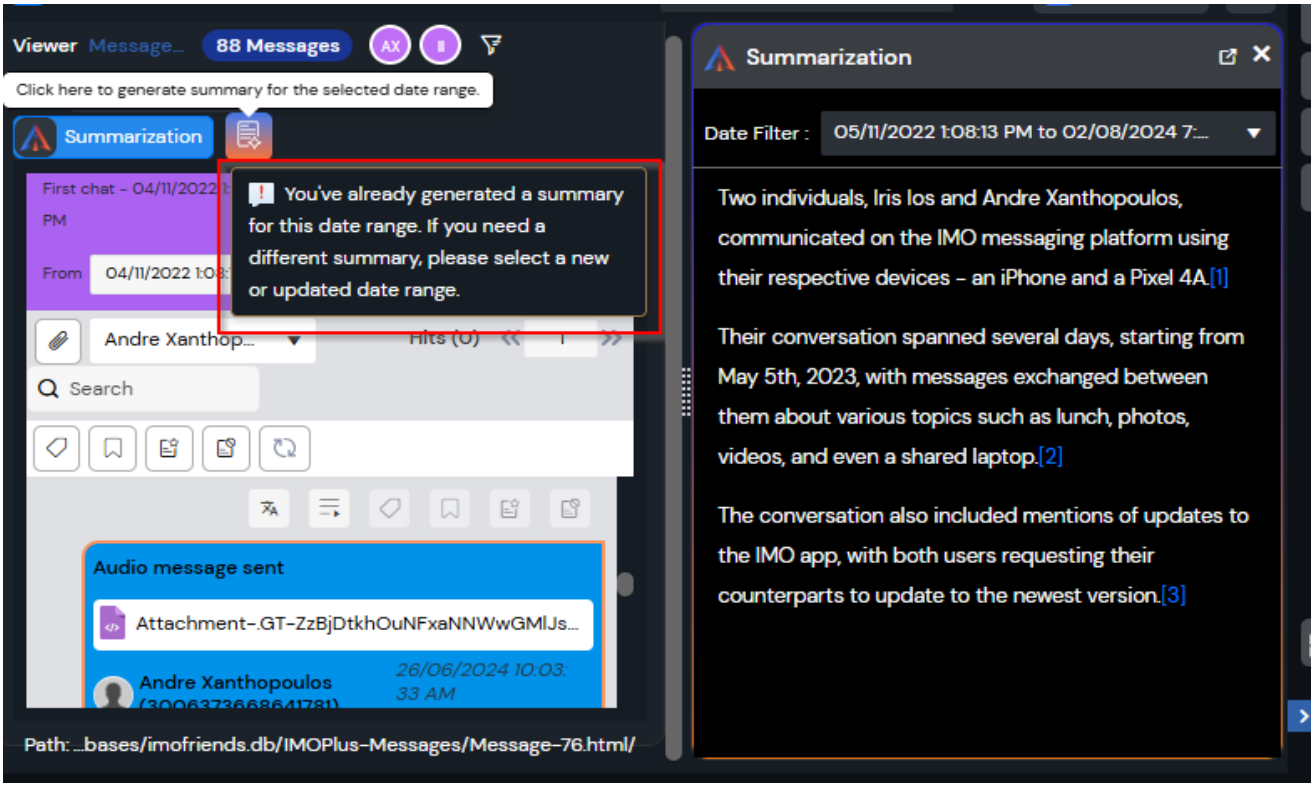


© Exterro, Inc. All rights reserved.

All versions (date ranges) of the summaries will be displayed in the **Summarization** pane, and you can select the required version from the drop-down to view the corresponding details.



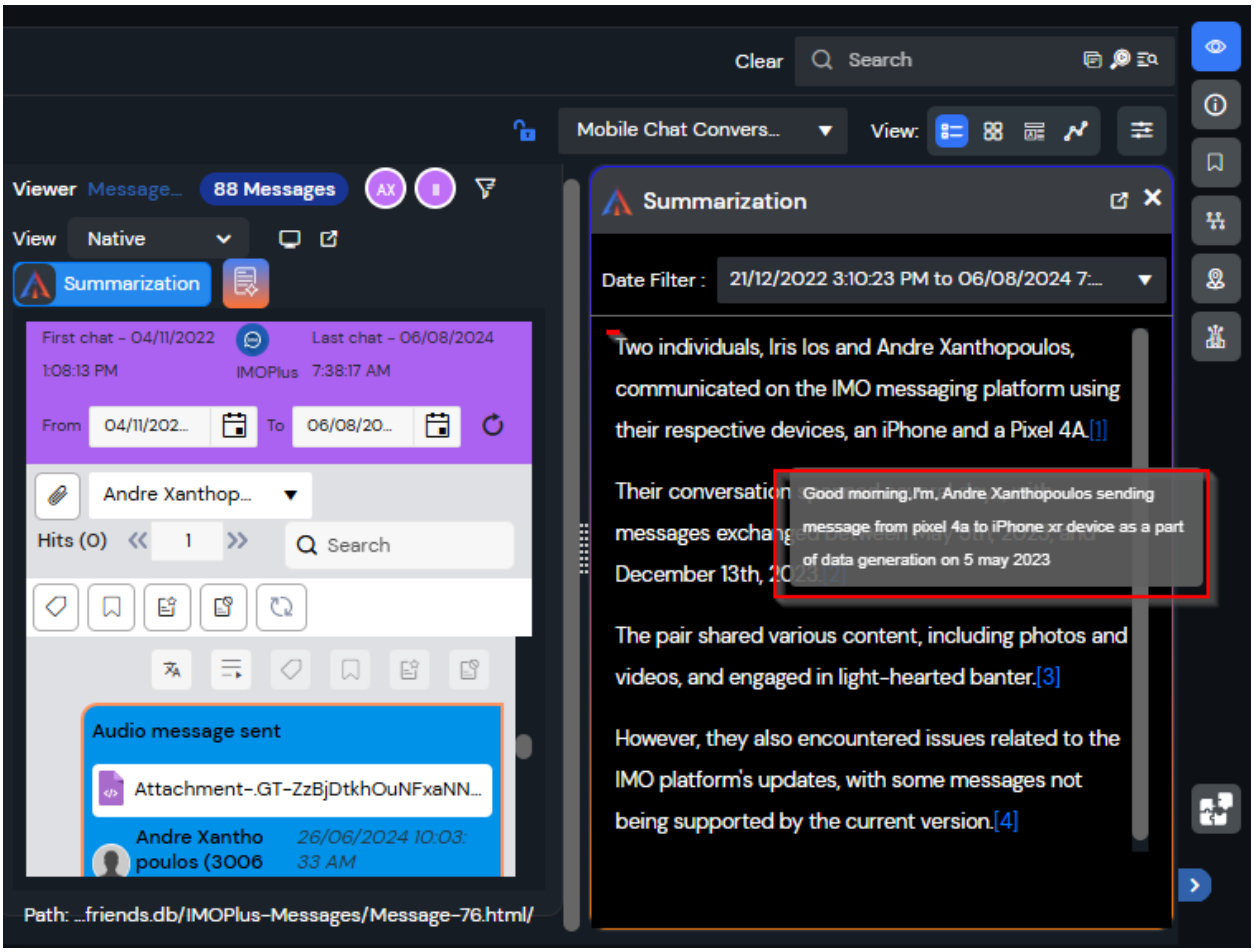
Note: *You cannot generate multiple summaries for the same date range.*



© Exterro, Inc. All rights reserved.

3.4 Summarization Pane

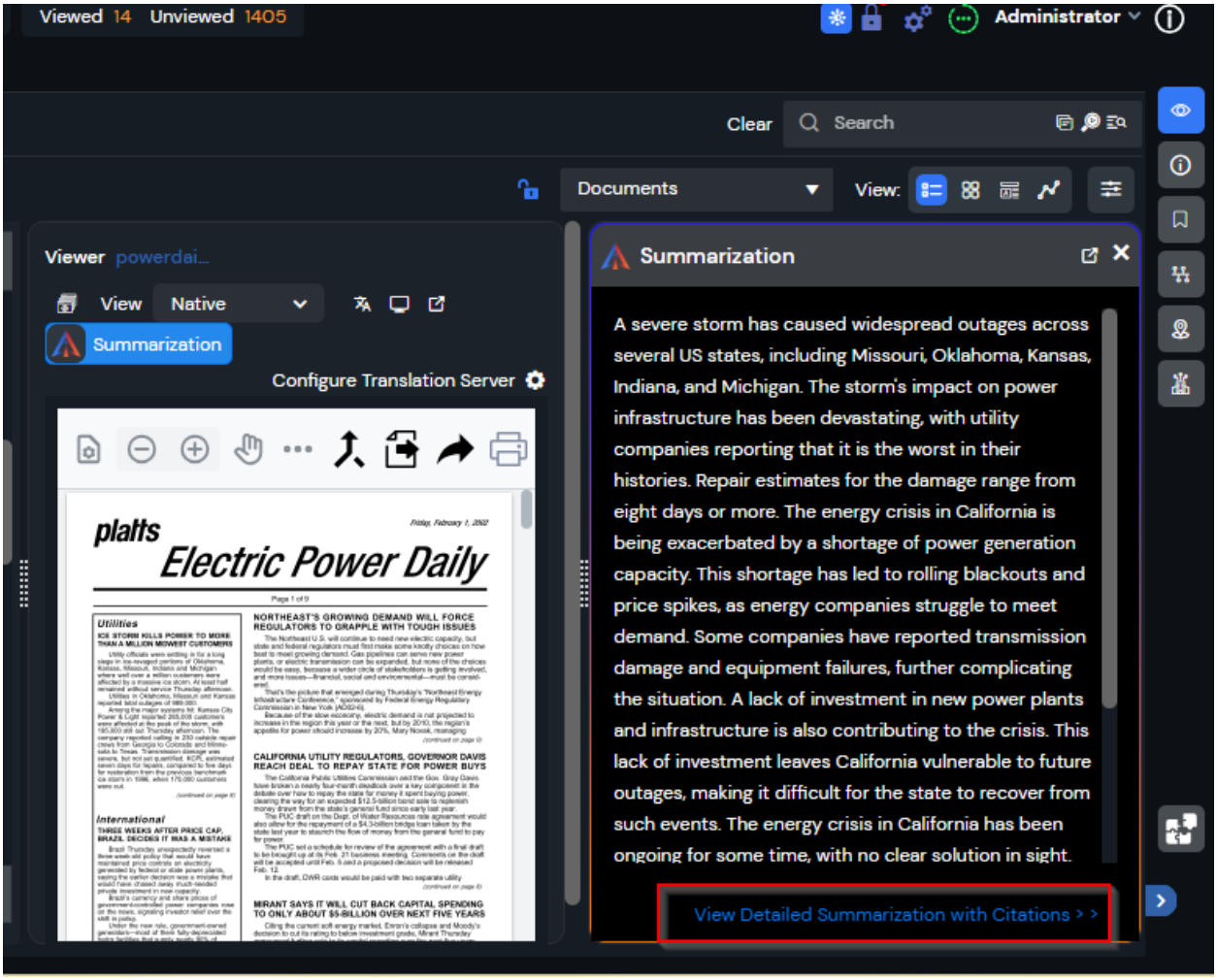
The **Summarization** pane allows you to review summarized content with inline citations, ensuring full transparency and traceability to the original source material. Hovering over a citation displays the exact source text for quick context verification.



Clicking on a citation navigates to the Native View of the document, automatically highlighting the corresponding source text for easy identification.

© Exterro, Inc. All rights reserved.

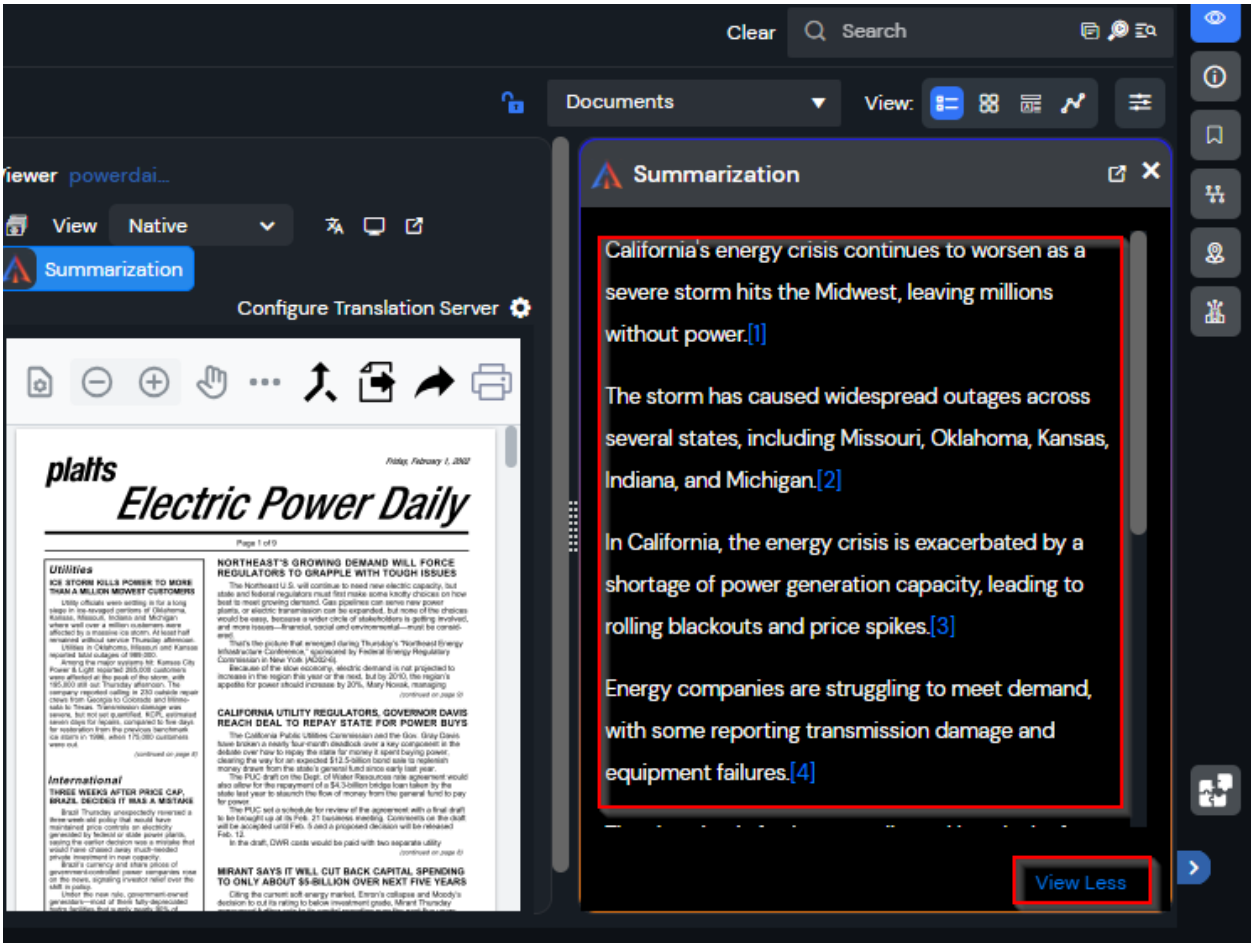
A **View Detailed Summarization with Citation** link is displayed at the bottom of the **Summarization** pane only when a consolidated summary is available.



Clicking the link expands the section to display the full segmented summaries along with corresponding citations.

© Exterro, Inc. All rights reserved.

A **View Less** link is displayed while viewing the segmented summaries; clicking it will collapse the section back to the consolidated final summary.

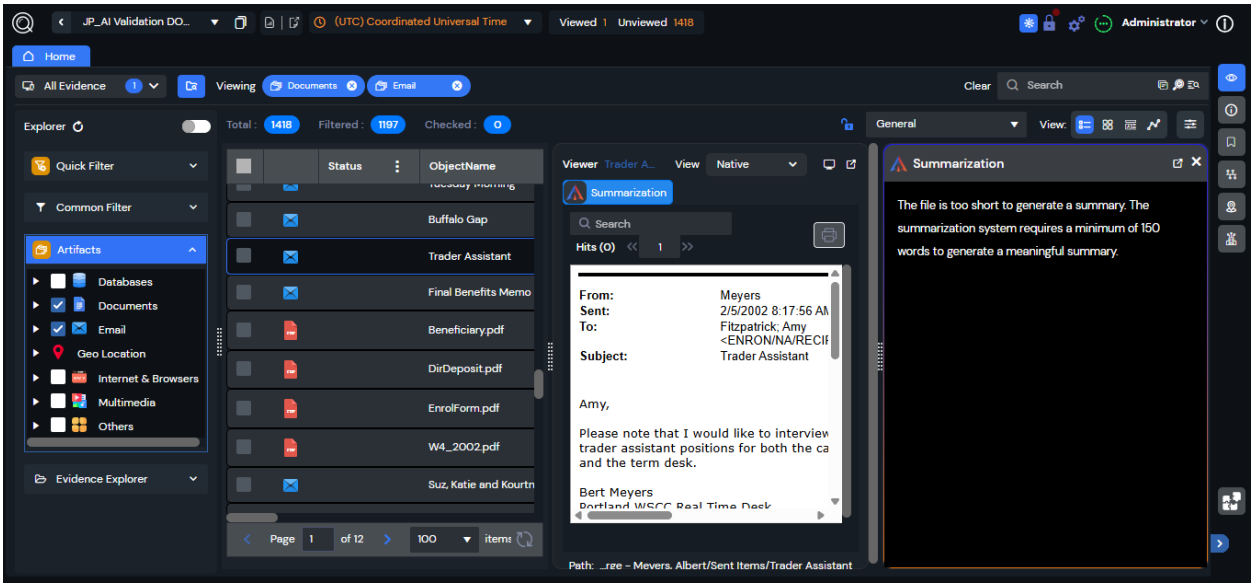


Limitations:

- No result is displayed in the Native Viewer of Review page when you click on the citations in the Summarization during the following scenarios:
  - The cited phrase is split between two pages of the file.
  - More than one space is inserted between some words in the cited phrase.
  - Sporadically, for document file types, clicking on the citations will direct you to the page where the cited phrase exists, but not the exact position. However, the cited phrase will be highlighted on the page.
  - The cited phrase is not part of the first 100 chats in the chat conversations.

© Exterro, Inc. All rights reserved.

Note: *The summarization system requires a minimum of 150 words to generate meaningful summaries. If the file is too short and contains less than 150 words, the following message is displayed in the* ***Summarization*** *pane.*



Note: *AI Summarization cannot be performed if the information in the files is contextually sparse or contains high levels of noise (Example: raw HTML tags, malformed URLs, repeated line breaks, or irrelevant characters). This is due to the fact that the model's ability to identify and prioritize key information is reduced when text contains a high level of unstructured or corrupted content*

© Exterro, Inc. All rights reserved.

3.5 Adding a New Ollama Model

By default, the AI Text Summarization feature in FTK Central uses the Llama 3.2 AI model, which is automatically available when installing the AI Server.

However, you can also add the required AI model from Ollama application to perform the summarization.

Notes:

- *Only the models available on Ollama platform are supported by the Text Summarization feature in FTK Central.*
- *Adding new AI models is applicable only when the AI server is installed in a GPU.*
- *If AI Servers are distributed across multiple GPUs, the models should be installed in all the AI Servers*

You can download the new AI model using any one of the following methods:

© Exterro, Inc. All rights reserved.

3.5.1 Method 1 – Same User Account used for Both Machine and AI server

This method should be used when both the machine and server use the same user account. In this case, both the AI server and the Ollama service will be installed in the same user account.

Steps:

1. Download the required Ollama model.
2. Open Command Prompt and run the below command:

   ollama pull <model_name>

3. The model will be downloaded to the below location:

   C:\Users\{user_name}\.ollama

4. Configure the newly downloaded AI model's name in the **Model Name** field of **Exterro Intelligence (AI) section** in FTK Central.

   Navigation: *Administration -> System Management -> Configuration -> Exterro Intelligence (AI) -> Summarization section*

© Exterro, Inc. All rights reserved.

3.5.2 Method 2 – Different User Accounts used for Machine and AI Server

This method should be used when the machine and server use different user accounts. In this case, the Ollama service and models are installed based on the machine's user account and not for the service user account.

To make new models available for the service login user, follow these steps:

Step 1: Download the Model

1. Open the Command Prompt and run the below command:

   ollama pull <model_name>

2. The model will be downloaded to the below location:

   C:\Users\{user_name}\.ollama

Step 2: Copy Model Files

1. Navigate to the below location:

   C:\Users\{user_name}\.ollama\models\blobs

2. Copy all files present in the above folder.
3. Remove all the files present in the below location and paste the copied files into it:

   C:\Program Files\AccessData\tf\tfdata\ollama_models\models\blobs

© Exterro, Inc. All rights reserved.

Step 3: Copy Model Manifest

1. Navigate to the below location:

   C:\Users\{user_name}\.ollama\models\manifests\registry.ollama.ai\library\<new_model_name>

2. Copy the folder of the newly downloaded model.
3. Paste it into the below location:

   C:\ProgramFiles\AccessData\tf\tfdata\ollama_models\models\manifests\registry.ollama.ai\library

Step 4: Restart the AI Server

1. Restart the AI server.
2. The newly downloaded model will be available for the active service user.

Note: *It is recommended to wait until the AI server has fully restarted before starting a summarization job, as it takes some time to load the newly added AI model.*

Step 5: Configuring the Exterro Intelligence (AI) section in FTK Central

5. Configure the newly downloaded AI model's name in the **Model Name** field of **Exterro Intelligence (AI) section** in FTK Central.

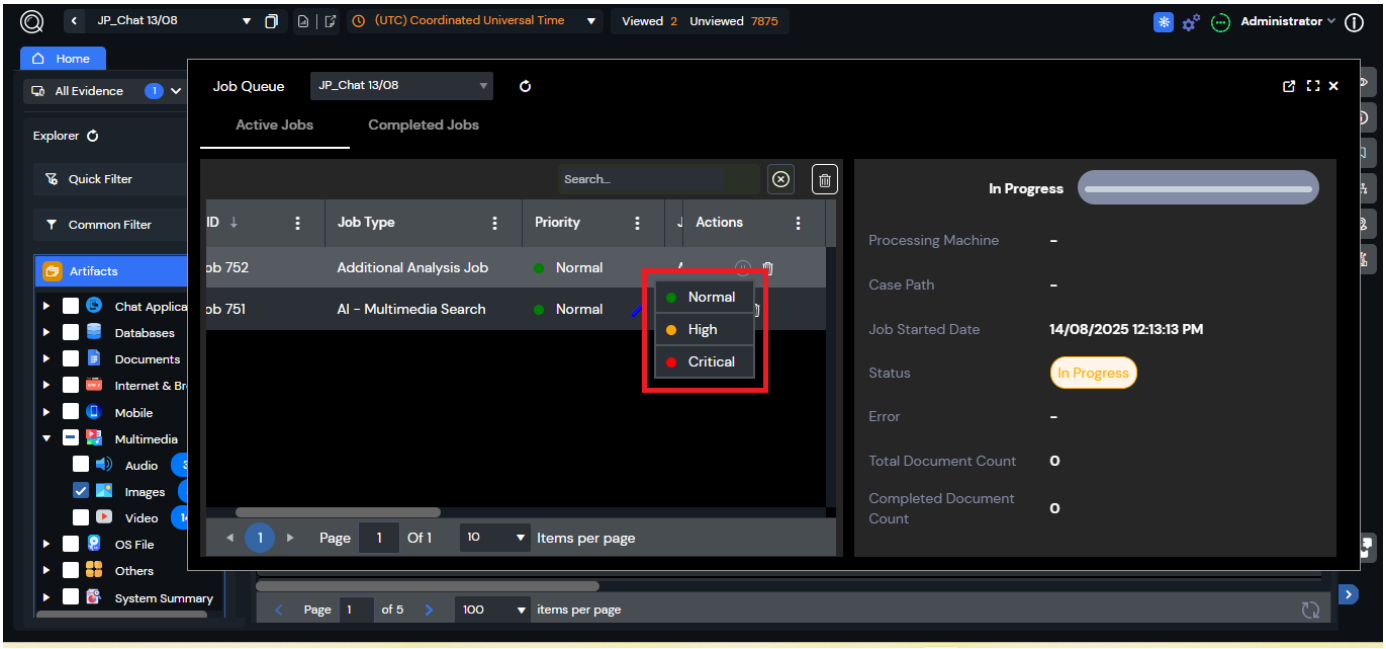
   Navigation: *Administration -> System Management -> Configuration -> Exterro Intelligence (AI) -> Summarization section*

© Exterro, Inc. All rights reserved.

4 Job Queue

Upon initiating the multimedia search or summarization process, the corresponding job will be created in the Job Queue of FTK Central to monitor its status. Moreover, you can set the priority for all the AI jobs (before it is completed) to define the precedence. You can set the priority of an AI job by following the steps below:

1. Click on from the FTK Central application
2. Click on the **Edit** icon in the **Priority** column against the required job.
3. Select any one of the following priority options based on the corresponding description:
    - **Critical:** The highest priority and should have precedence over all other AI jobs.
    - **High:** High priority and will be executed after the **Critical** jobs are done. These jobs have precedence over the Normal AI jobs.
    - **Normal:** The default priority and will be processed after all the **Critical** and **High** priority jobs are completed.



© Exterro, Inc. All rights reserved.

Notes:

- *All the AI jobs will be processed sequentially in the above-mentioned order.*
- *Initially, all the jobs will be assigned with the **Normal** priority.*
- *Only users with all case-level permissions can change the AI jobs' priority*
- *When two jobs are set with the same priority, they will be processed sequentially based on their Job IDs*
- *For AI jobs initiated from the FTK Enterprise application, the priority cannot be set in the FTK Central job queue.*

© Exterro, Inc. All rights reserved.

5 Benchmark Metrics

5.1 Multimedia Summarization (MMS) Metrics

This section benchmarks the AI engine's performance when processing multimedia datasets. Key performance factors include the number of AI servers, object volume, thread count, and job concurrency.

5.1.1 GPU Metrics

5.1.1.1 Metrics Captured

- **AI Servers**: Number of AI processing nodes
- **No. of Objects and Document Count**: Volume of input data
- **Threads**: Degree of parallel processing
- **Job Time**: Total processing time (HH:MM:SS)

5.1.1.2 MMS Job Time – (3) AI Servers

No. of Objects	Document Counts	Threads	Job Time (AI Multimedia) (HH:MM:SS)
10K	10,000	6	00:15:26
		4	00:18:25
		3	00:21:32
50K	50,055	6	01:04:00
		3	01:47:00
100K	100,692	6	02:04:00
		3	03:28:00

© Exterro, Inc. All rights reserved.

5.1.1.3 MMS Job Time – (6) AI Servers

No. of Objects	Document Counts	Threads	Job Time (AI Multimedia) (HH:MM:SS)
10K	10,000	12	00:15:00
		6	00:14:00
50K	50,055	12	01:04:00
		6	01:05:00
100K	100,692	12	02:08:00
		6	02:14:00

5.1.2 CPU Metrics

No. of Objects	Job Time (AI Multimedia) (HH:MM:SS)
10K	09:26:03

© Exterro, Inc. All rights reserved.

5.2 Text Summarization Metrics

This section evaluates the AI engine's performance on document summarization tasks. Metrics vary based on the number of AI servers and input volume.

5.2.1 GPU Metrics

5.2.1.1 Metrics Captured

- **AI Servers**: Number of AI processing nodes
- **Objects and Document Count**: Input volume
- **Files Processed**: Total files handled during the job
- **Job Time**: Total processing time (HH:MM:SS)

5.2.1.2 Job Time – (6) AI Servers

Objects	Document Counts	Files Processed	Job Time (AI Summarization) (HH:MM:SS)
10K	8,440	8,420	01:39:00
50K	58,844	58,812	05:56:00
100K	116,151	115,130	12:52:00

© Exterro, Inc. All rights reserved.

5.2.1.3 Job Time – (3) AI Servers

Objects	Document Counts	Files Processed	Job Time (AI Summarization) (HH:MM:SS)
10K	8,440	8,420	03:34:00
50K	58,844	58,812	11:52:00
100K	110,355	109,435	22:57:00

5.2.1.4 Job Time – (1) AI Server

Objects	Document Counts	Files Processed	Job Time (AI Summarization) (HH:MM:SS)
10K	8,440	8,420	08:00:00
50K	58,844	58,812	45:27:00
100K	110,355	109,435	68:04:00

© Exterro, Inc. All rights reserved.

5.2.2 GPU vs CPU Metrics

A quick metrics-based guide comparing how CPU and GPU handle the same forensic document - **NIST Special Publication 800-86**—in terms of time, output, and depth.

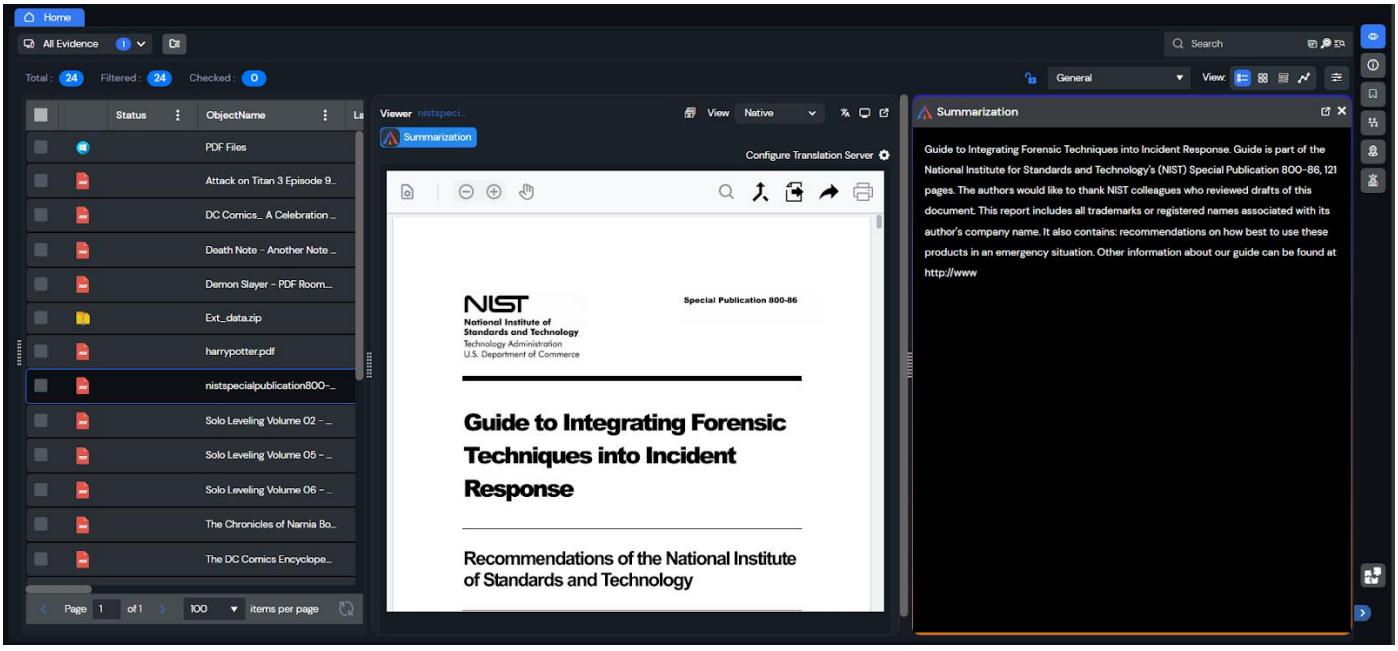
- **Time Taken**

Hardware	Time Taken
CPU	1 minute 4 sec
GPU	1 minute 46 sec

The GPU outperforms the CPU in analytical depth and output quality, highlighting its superior processing capability.

5.2.2.1 CPU Results (Summary)

Guide to Integrating Forensic Techniques into Incident Response. Guide is part of the National Institute for Standards and Technology's (NIST) Special Publication 800-86, 121 pages. The authors would like to thank NIST colleagues who reviewed drafts of this document. This report includes all trademarks or registered names associated with its author's company name. It also contains: recommendations on how best to use these products in an emergency situation. Other information about our guide can be found at http://www"



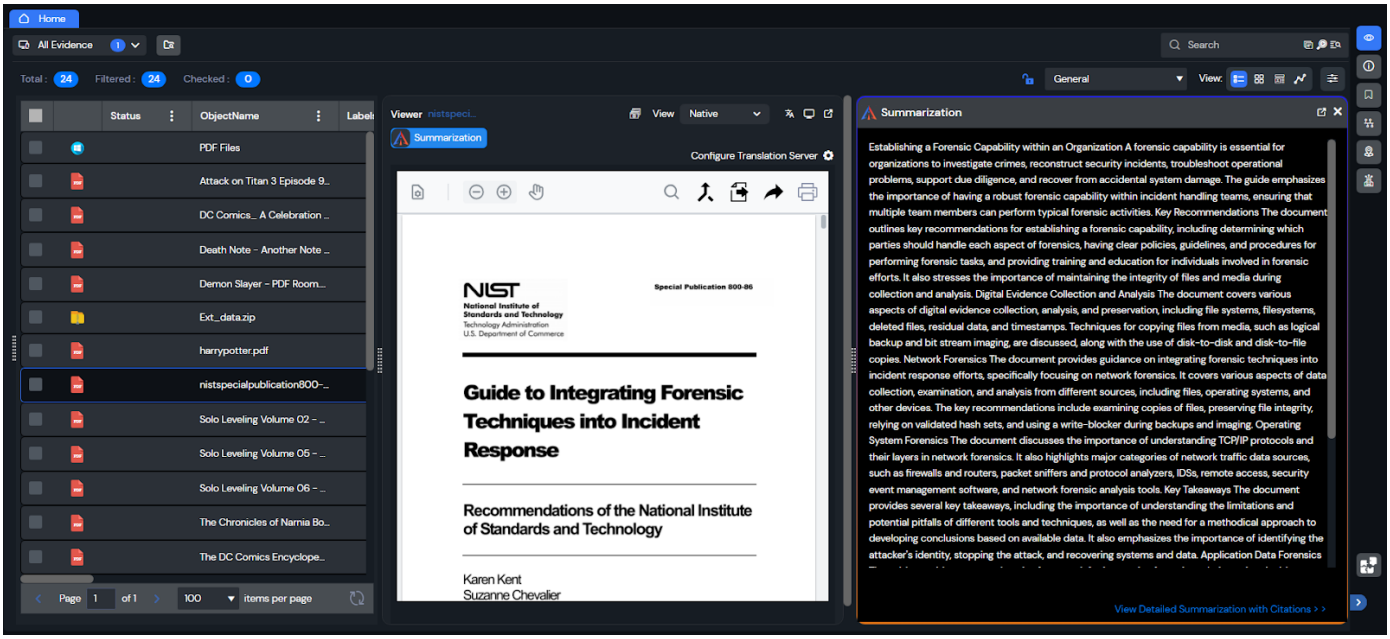
© Exterro, Inc. All rights reserved.

5.2.2.2 GPU Results (Summary)

Establishing a Forensic Capability within an Organization. A forensic capability is essential for organizations to investigate crimes, reconstruct security incidents, troubleshoot operational problems, support due diligence, and recover from accidental system damage. The guide emphasizes the importance of having a robust forensic capability within incident handling teams, ensuring that multiple team members can perform typical forensic activities. Key Recommendations. The document outlines key recommendations for establishing a forensic capability, including determining which parties should handle each aspect of forensics, having clear policies, guidelines, and procedures for performing forensic tasks, and providing training and education for individuals involved in forensic efforts. It also stresses the importance of maintaining the integrity of files and media during collection and analysis. Digital Evidence Collection and Analysis. The document covers various aspects of digital evidence collection, analysis, and preservation, including file systems, filesystems, deleted files, residual data, and timestamps. Techniques for copying files from media, such as logical backup and bit stream imaging, are discussed, along with the use of disk-to-disk and disk-to-file copies. Network Forensics. The document provides guidance on integrating forensic techniques into incident response efforts, specifically focusing on network forensics. It covers various aspects of data collection, examination, and analysis from different sources, including files, operating systems, and other devices. The key recommendations include examining copies of files, preserving file integrity, relying on validated hash sets, and using a write-blocker during backups and imaging.. Operating System Forensics. The document discusses the importance of understanding TCP/IP protocols and their layers in network forensics. It also highlights major categories of network traffic data sources, such as firewalls and routers, packet sniffers and protocol analyzers, IDSs, remote access, security event management software, and network forensic analysis tools. Key Takeaways. The document provides several key takeaways, including the importance of understanding the limitations and potential pitfalls of different tools and techniques, as well as the need for a methodical approach to developing conclusions based on available data. It also emphasizes the importance of identifying the attacker's identity, stopping the attack, and recovering systems and data. Application Data Forensics. The guide provides a comprehensive framework for integrating forensic techniques into incident response efforts, specifically focusing on applications and application-related data. It covers various aspects of collecting, examining, and analyzing application data from different sources such as file systems, volatile OS data, network traffic, and logs. Incident Response and Forensic Techniques. The document provides an overview of integrating forensic techniques into incident response, focusing on data acquisition, analysis, and preservation. It covers various aspects such as data concealment, memory management, and network forensic analysis tools. The guide also discusses incident

© Exterro, Inc. All rights reserved.

handling, including containment, exercises, and outsourcing, as well as information system life cycles and digital evidence management. Overall, the document provides a comprehensive framework for integrating forensic techniques into incident response efforts, emphasizing the importance of understanding the limitations and potential pitfalls of different tools and techniques.



© Exterro, Inc. All rights reserved.

Contact Exterro

If you have any questions, please refer to this document, or any other related materials provided to you by Exterro. For usage questions, please check with your organization's internal application administrator. Alternatively, you may contact your Exterro Training Manager or other Exterro account contact directly.

For technical difficulties, support is available through support@exterro.com.

Contact:

Exterro, Inc.

2175 NW Raleigh St., Suite 110

Portland, OR 97210.

Telephone: 503-501-5100

Toll Free: 1-877-EXTERRO (1-877-398-3776)

Fax: 1-866-408-7310

General E-mail:info@exterro.com

Website: www.exterro.com

Information in this document is subject to change without notice. No part of this document may be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose, without the express written permission of Exterro, Inc. The trademarks, service marks, logos or other intellectual property rights of Exterro, Inc and others used in this documentation ("Trademarks") are the property of Exterro, Inc and their respective owners. The furnishing of this document does not give you license to these patents, trademarks, copyrights or other intellectual property except as expressly provided in any written agreement from Exterro, Inc.

The United States export control laws and regulations, including the Export Administration Regulations of the U.S. Department of Commerce, and other applicable laws and regulations apply to this documentation which prohibits the export or re-export of content, products, services, and technology to certain countries and persons. You agree to comply with all export laws, regulations and restrictions of the United States and any foreign agency or authority and assume sole responsibility for any such unauthorized exportation.

You may not use this documentation if you are a competitor of Exterro, Inc, except with Exterro Inc's prior written consent. In addition, you may not use the documentation for purposes of evaluating its functionality, or for any other competitive purposes.

If you have any questions, please contact Customer Support by email at support@exterro.com.