BASIS TECHNOLOGY

Correlating Autopsy Cases

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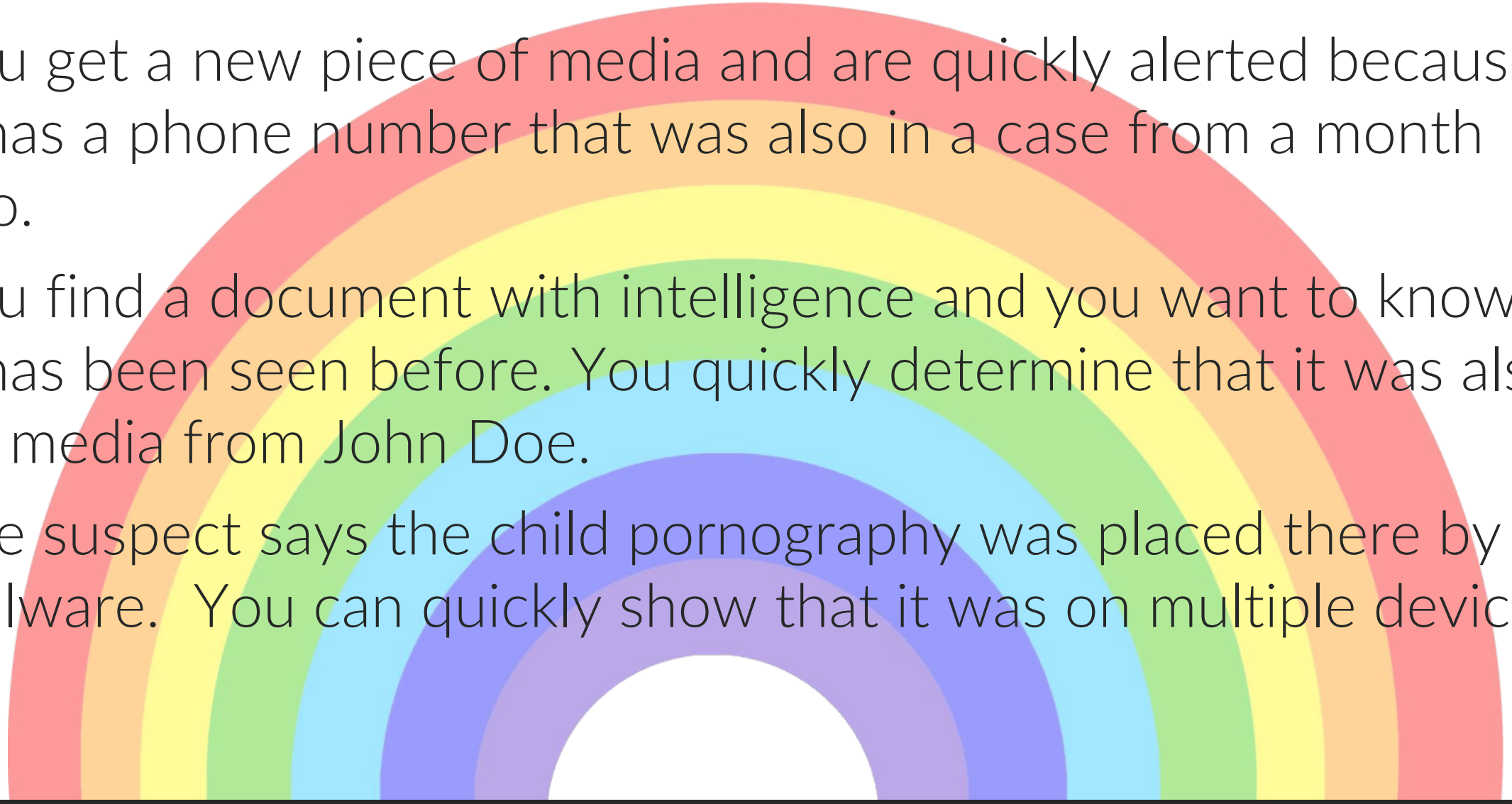
OSDFCon 2017

Imagine This World.....



- You get a new piece of media and are quickly alerted because it has a phone number that was also in a case from a month ago.
- You find a document with intelligence and you want to know if it has been seen before. You quickly determine that it was also on media from John Doe.
- The suspect says the child pornography was placed there by malware. You can quickly show that it was on multiple devices.

It’s Now Possible

If you aren't a 5-year old….

Before The 4.5.0 Release

- When you made a case, Autopsy created a database.
  - Single-user Cases: A SQLite database in the case folder.
  - Multi-user Cases: A new database on the PostgreSQL server.
- The database contains:
  - File system information (file metadata and names, partitions, etc.)
  - The Blackboard (web bookmarks, keyword hits, etc.)
- Does not contain file content or any data that spanned cases.

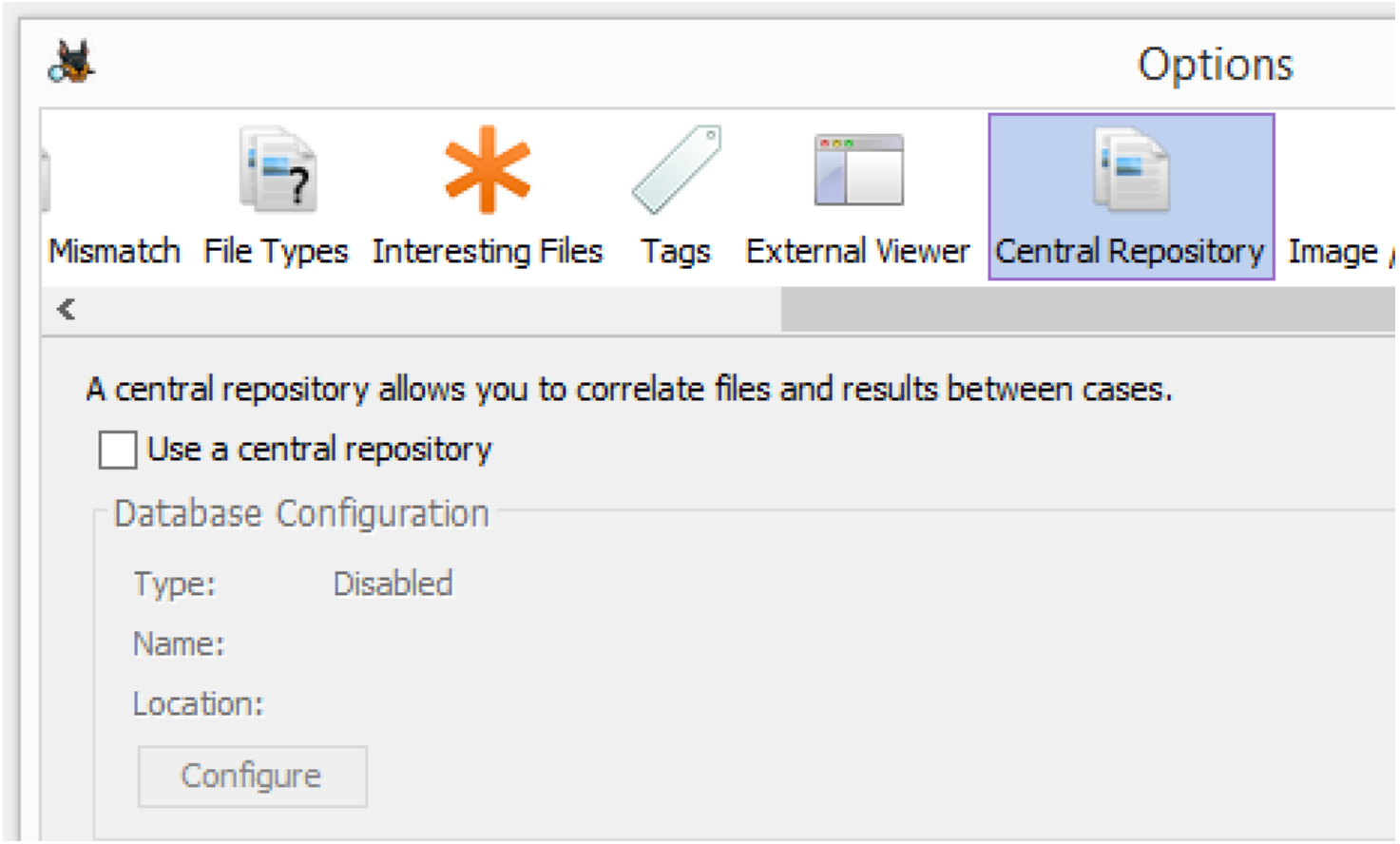
- This makes it easy to scale because the databases stay small.

Now (as of 4.5.0)

- Autopsy still maintains a single database per case.
- It can now maintain a non-case-specific database.
  - We call it the central repository.
- Can be used for:
  - Correlation
  - Hash Databases
  - ….

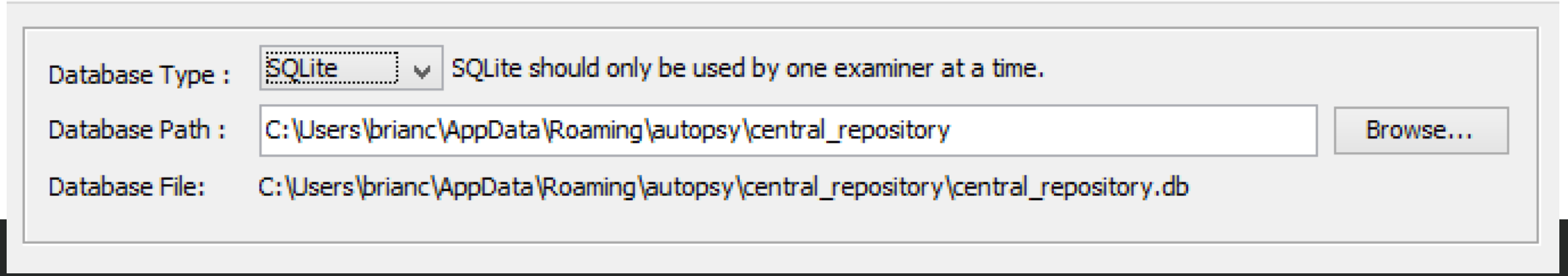
Configuration: Enabling It

- Step 1: Enable It!
  - Tools -> Options -> Central Repository panel.



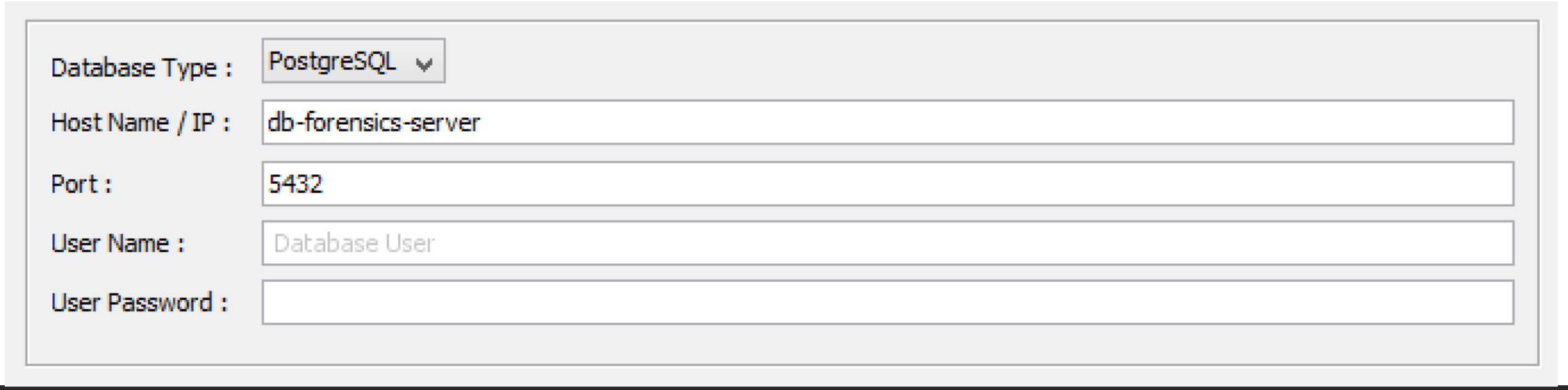
Configuration: Database Type

- Two types are supported.
- SQLite:
  - Database is stored in a folder.
  - Default location is in AppData.
  - Requires no other installations.
  - BUT, can be used by only one user at a time. Do not put on a network share and have multiple examiners using it at the same time.

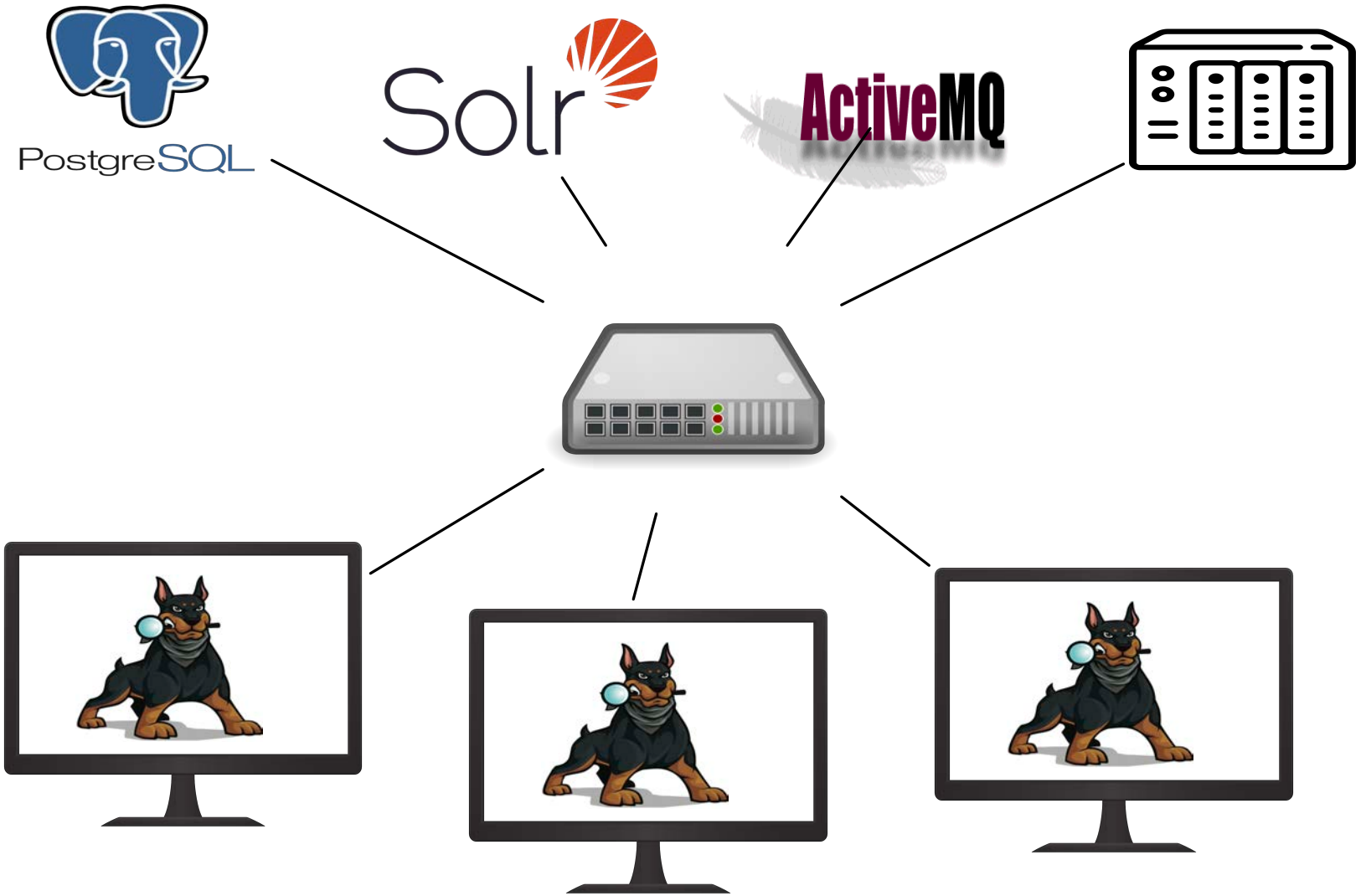


Configuration: Database Type (PostgreSQL)

- PostgreSQL
  - Database is stored on a server
  - Can be used by multiple users at a time.
  - You must install and configure the PostgreSQL server.
  - Can use the same server for multi-user cases.



Multi-user Cases



Picking a Type

- If you are a single-person shop, stick with SQLite.
- If there are multiple people in your lab, setup PostgreSQL.
  - It's fairly easy.
  - Follow the instructions in the Autopsy docs.

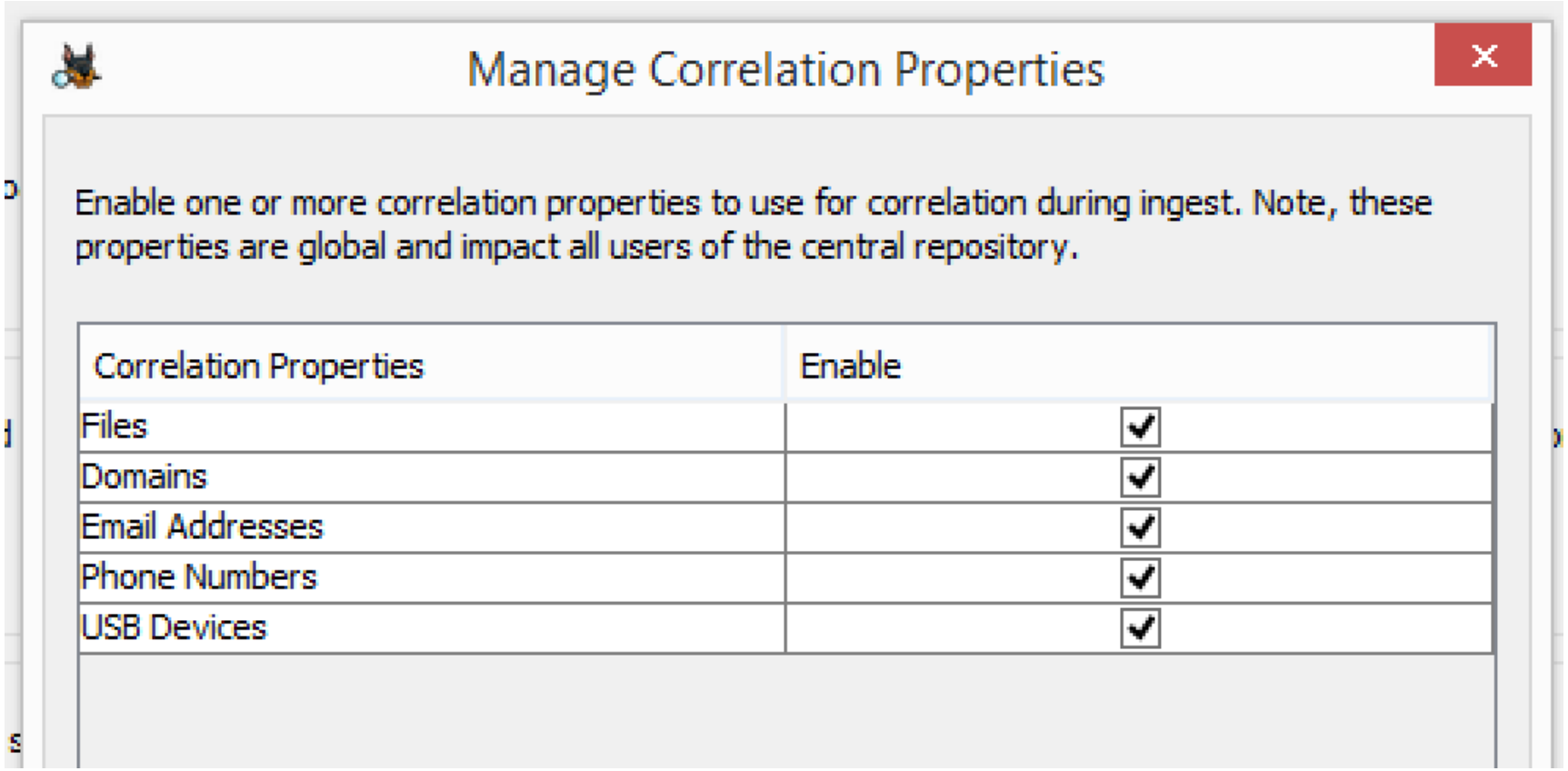
Now What?
Basic Correlation

Basic Correlation

- What: Allows you to find links with previous cases
- How:
  - Information about each file, phone number, etc. is stored in the central repo when a data source is “ingested”.
  - When you select an item, you can see its other occurrences.

Correlation Setup

- You can refine what types of “properties” to correlate.
- In the Options panel.

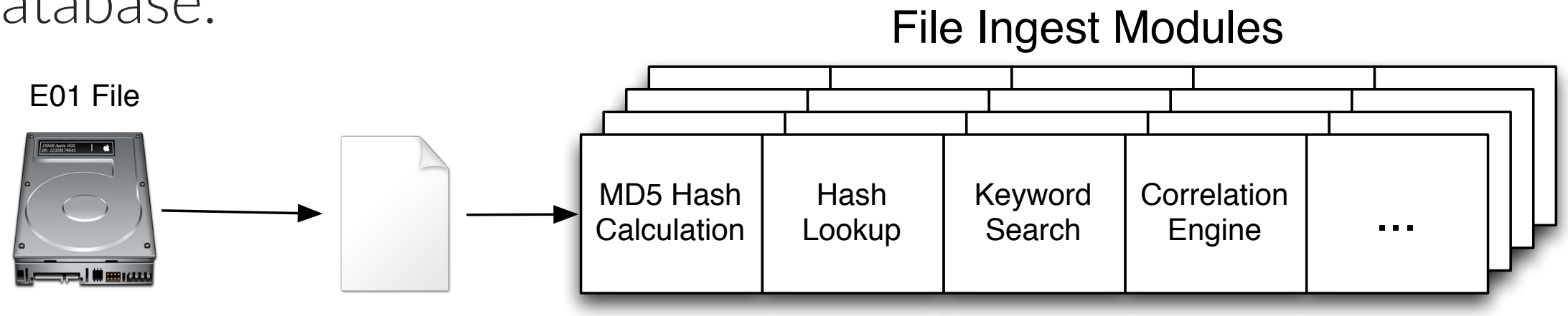


Correlation Properties

- File: The MD5 and path for each file.
- Domain: From web artifact URLs and keyword hits.
- Email Addresses: From email messages and keyword hits.
- Phone Numbers: From messages, contact books, call logs, and keyword hits.
- USB Devices: From the devices plugged in (based on the registry).

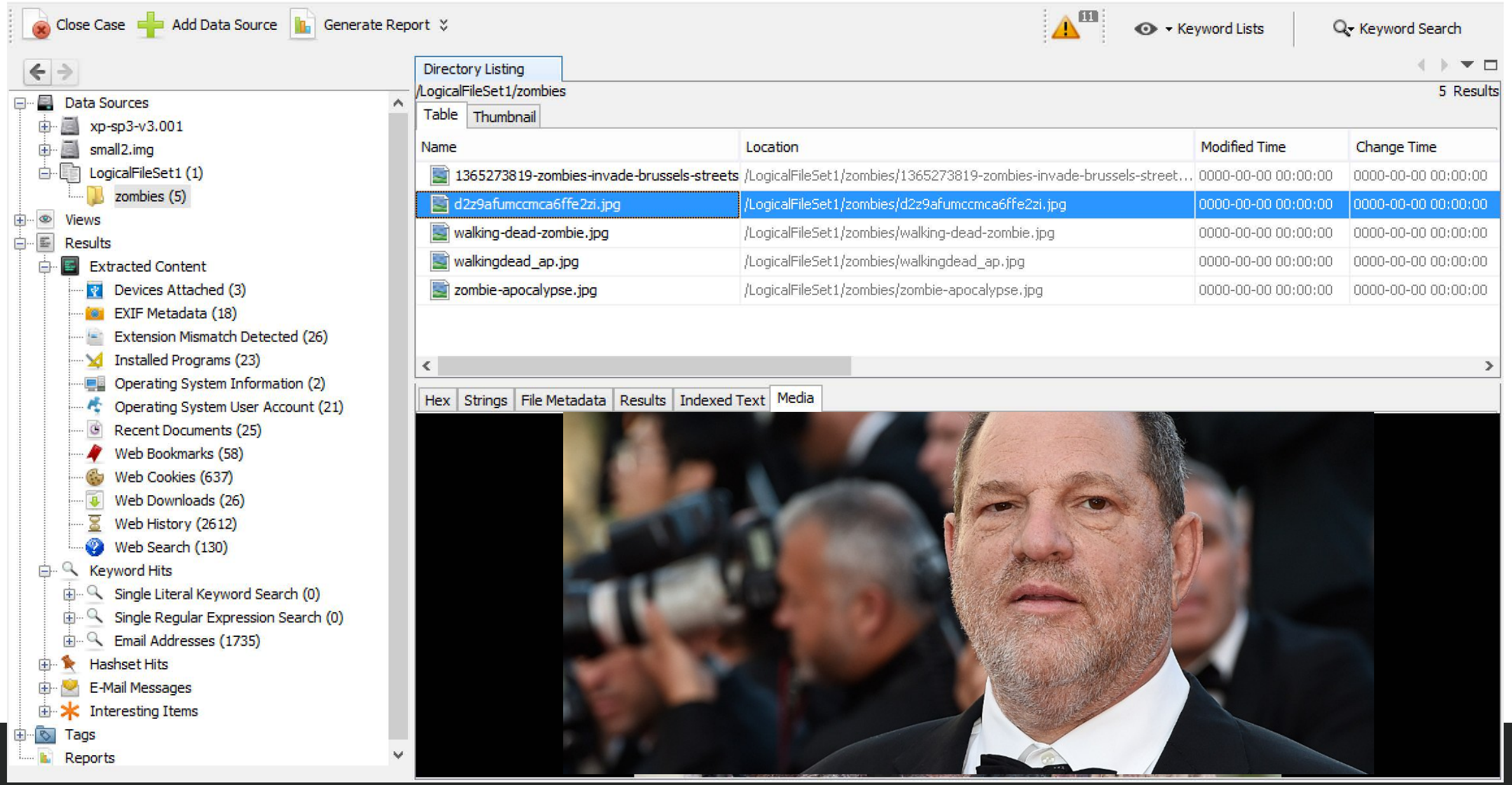
Properties are Saved During Ingest

- Hash, Keyword Search, Email, etc. modules must be enabled to extract data.
- Correlation Engine ingest module will save that data to the database.



- NOTE: If you don't enable the initial modules, the data won't be saved.

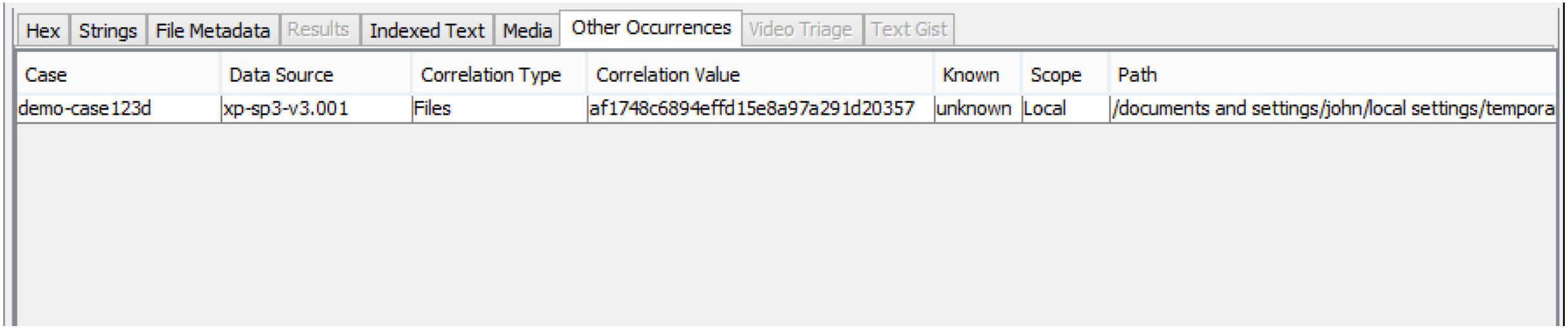
Seeing Correlations: Basic Autopsy Layout



“Other Occurrences” Tab

- The lower right tab will show you which data sources this item also occurred in.
- If the selected item has:
  - A file associated with it, MD5 will be used.
  - An email (such as contact book or message), it will be searched.
  - ….
- Occurrences are shown both within the current case and other cases.

“Other Occurrences” Tabs



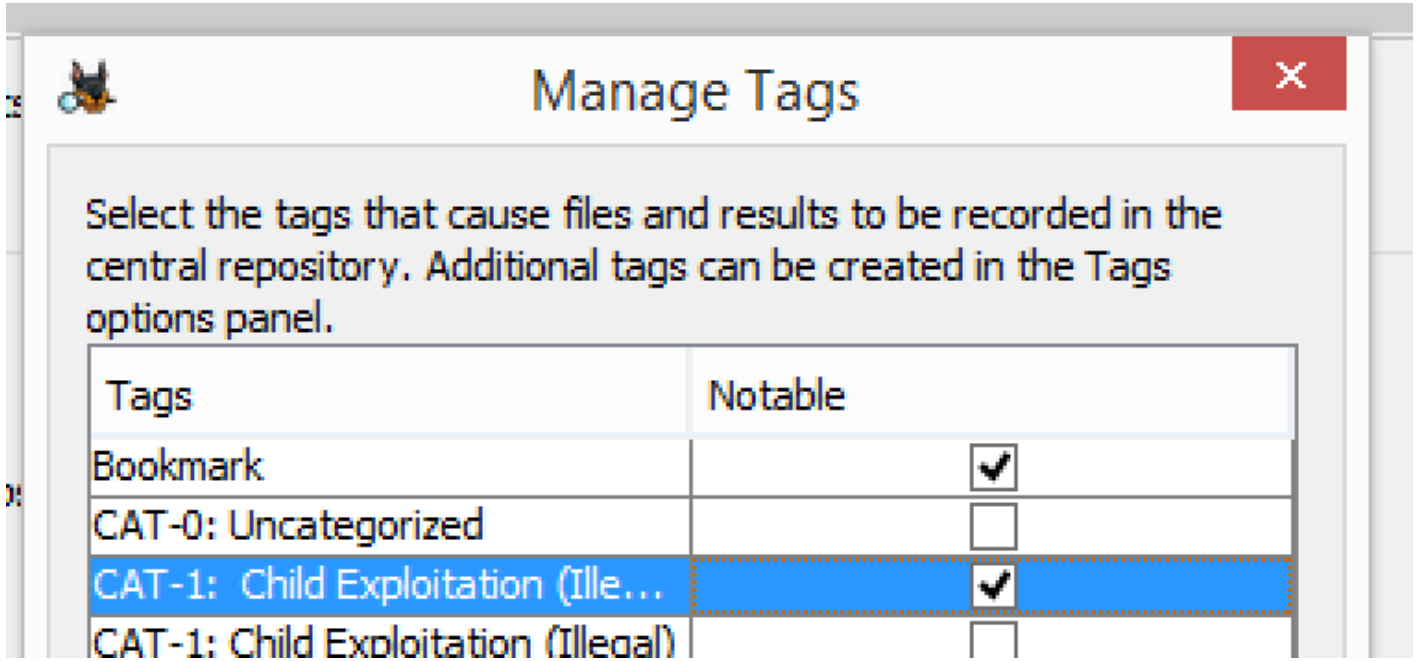
Now What?
Previously “Bad” / Notable

Previously Notable: Basics

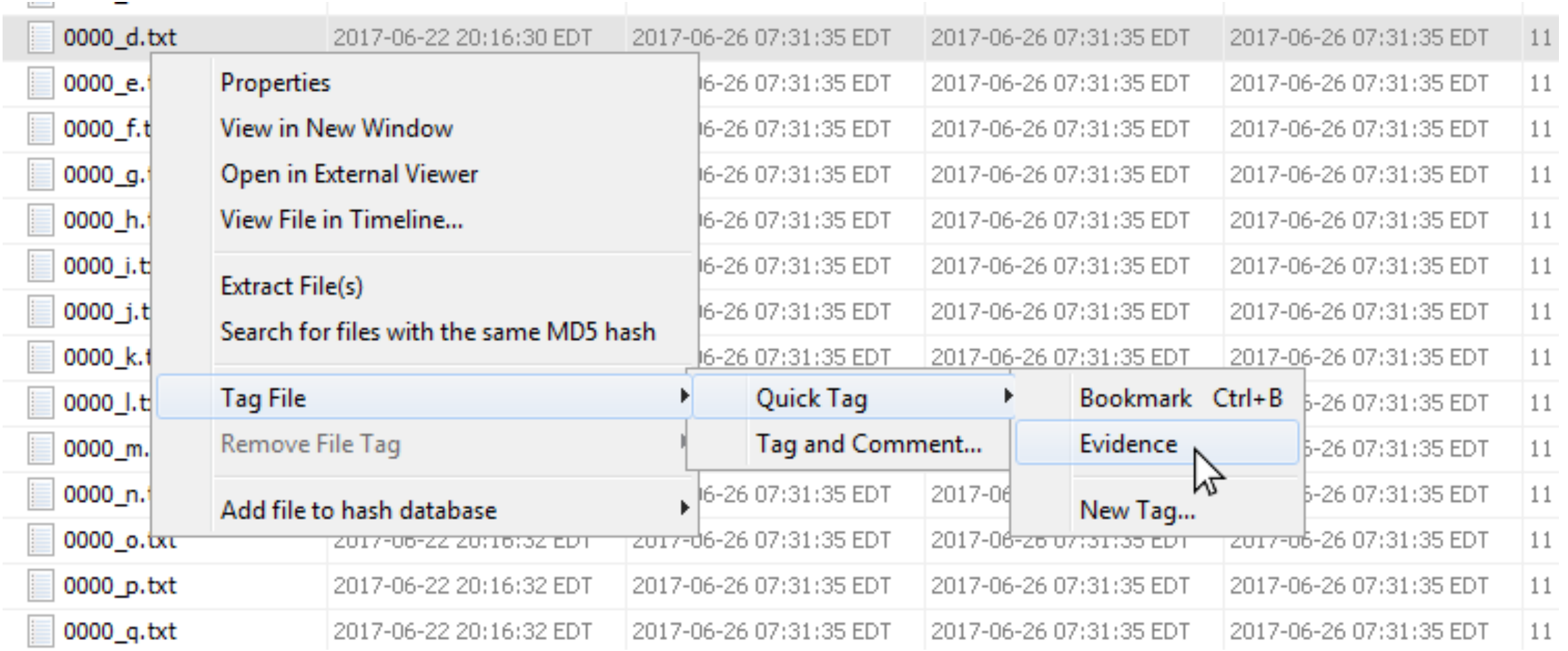
- What: Allows you to see if a previous case considered an item to be notable.
- How:
  - When a user tags an item as notable, that gets saved in the central repository.
  - When it is seen again, it gets flagged.

Previously Notable: Setup

- You need to configure which tag names are associated with “notable”.
- “Manage Tags” in the Options panel.



Previously Notable: Tagging a File



Previously Notable: What Gets Stored

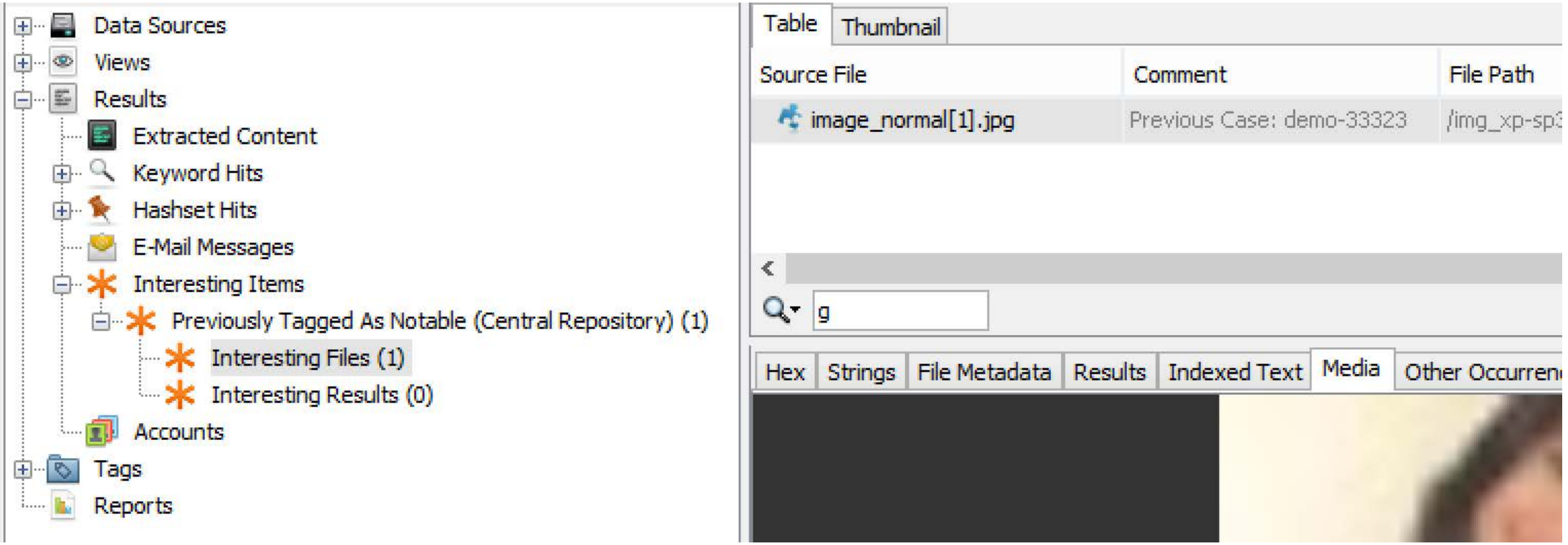
- The instance of the item gets stored as being "notable"
  - An instance is an occurrence at a specific 'path' and 'case'.
- NOTE: There could be other occurrences of that file, email, etc. They will not be marked as "notable".

- If you untag the file, its "notable" status will be removed from the central repository.

Previously Notable: Getting Results

- Enable the Correlation Engine ingest module (just like for the correlation feature).
- It will query the central repository for previous notable occurrences of the item.
- If any are found, an “Interesting Item” artifact will be created.
- You can find it in the tree and an inbox message will be created.

Previously Notable: Seeing Results

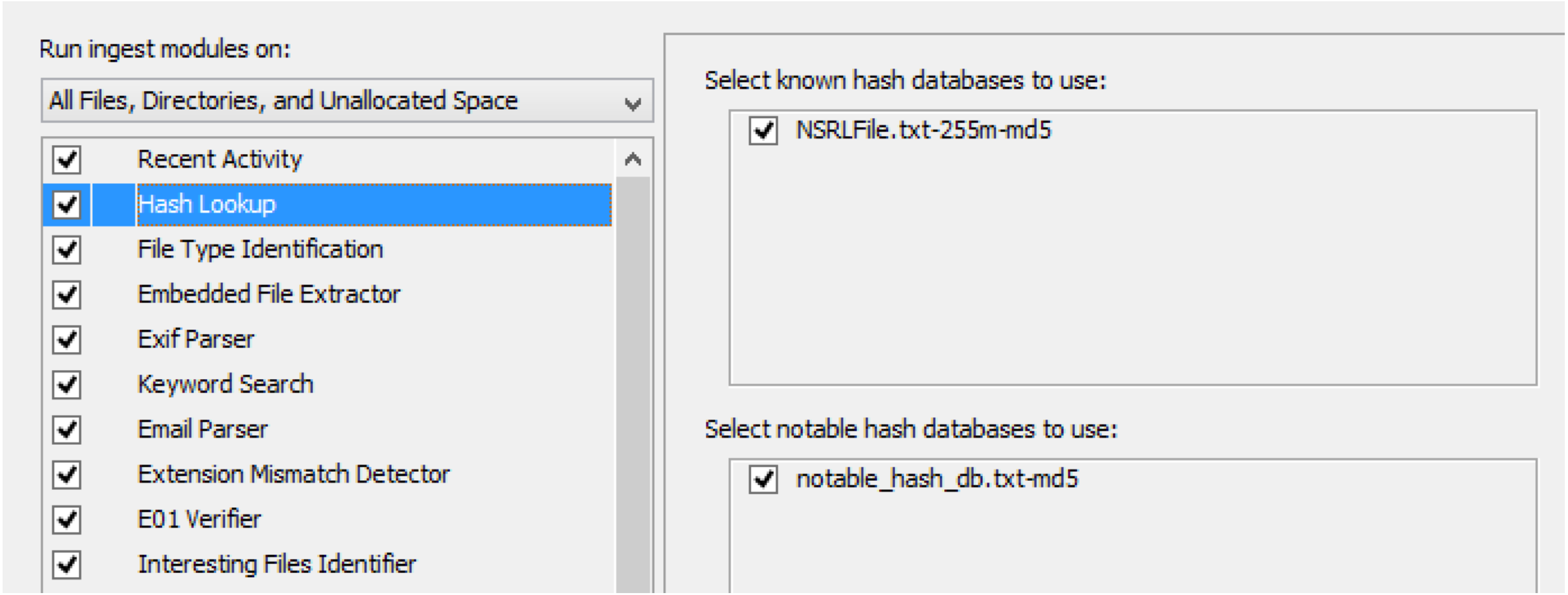


The Future:
Tighter Integration

Central Hash Database

- The January release (4.6.0) will use the repository for hash databases.
- NSRL and notable hashsets can be shared in multi-user cases.
- Users will be able to:
  - Import and create hashsets into the central repo
  - Pick which hashsets to use

Hash Configuration Same as Local DBs



Easier Tag Management

- With 4.5.0, you need to configure tags as ‘notable’ separate from where you define tags.
- The 4.6.0 release will force you to decide what a tag name means when you create it.

Summary

- Central Repository allows for more complex analytics.
- See if an item has been seen before
- See if an item has been previously marked as notable
- Easier hash database management

- It's all free and open source….

http://sleuthkit.org/autopsy/

Contact

BASIS TECHNOLOGY

Questions

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Schema

- Tables for:
  - Case information
  - Data source information
  - Each type of correlation property
- Correlation Properties Tables:
  - Case and data source identifiers
  - Value (MD5, email address, etc.)
  - Path
  - Known status (notable, etc.)
  - Comment