School of Computing
IT8003 Digital Forensics and Investigation

Practical 1B: Create Case and Process Evidence

Introduction

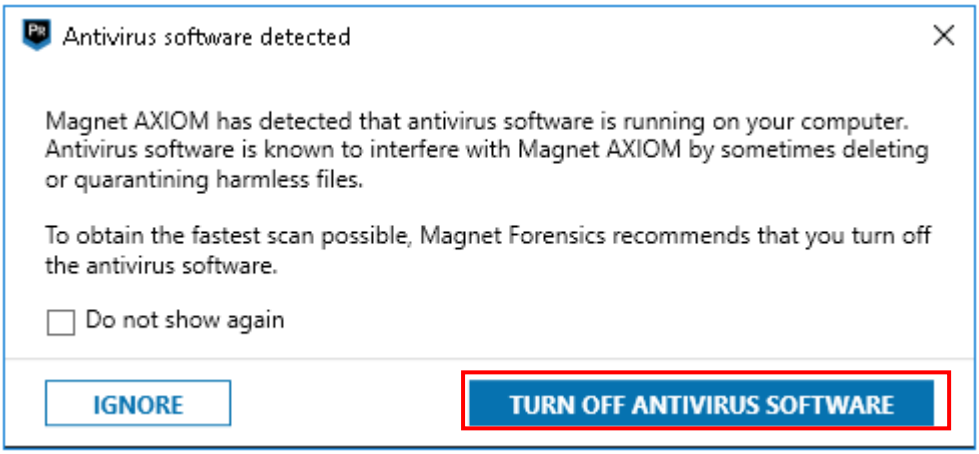
In Digital Forensics, once you have acquired the data of the subject's device in a forensically sound manner. The next step before doing your analysis is to do a working copy of the original copy that you had acquired from. There after you will want to process the working copy with a forensic software to verify your working copy, extract/crave and begin to perform your analysis.

Learning Objective

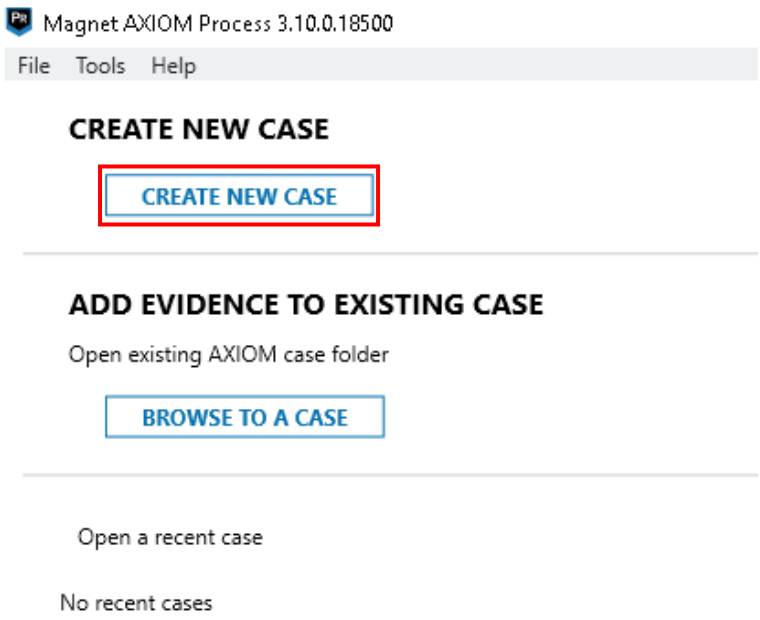
In this Practical, students will be able to process the acquire data called image files (. E01 - an encase proprietary format). Creating a case file and process it to verify image file (. E01) to ensure that the acquired image is a bit-for-bit copy of the original copy by generating a hash value within AXIOM Process.

Exercise 1. Creating a Case using Magnet Axiom and Processing Case Evidence

1. Run "**AXIOM Process**"
2. Click "**Turn Off Antivirus software**" when prompted to turn off the anit-virus

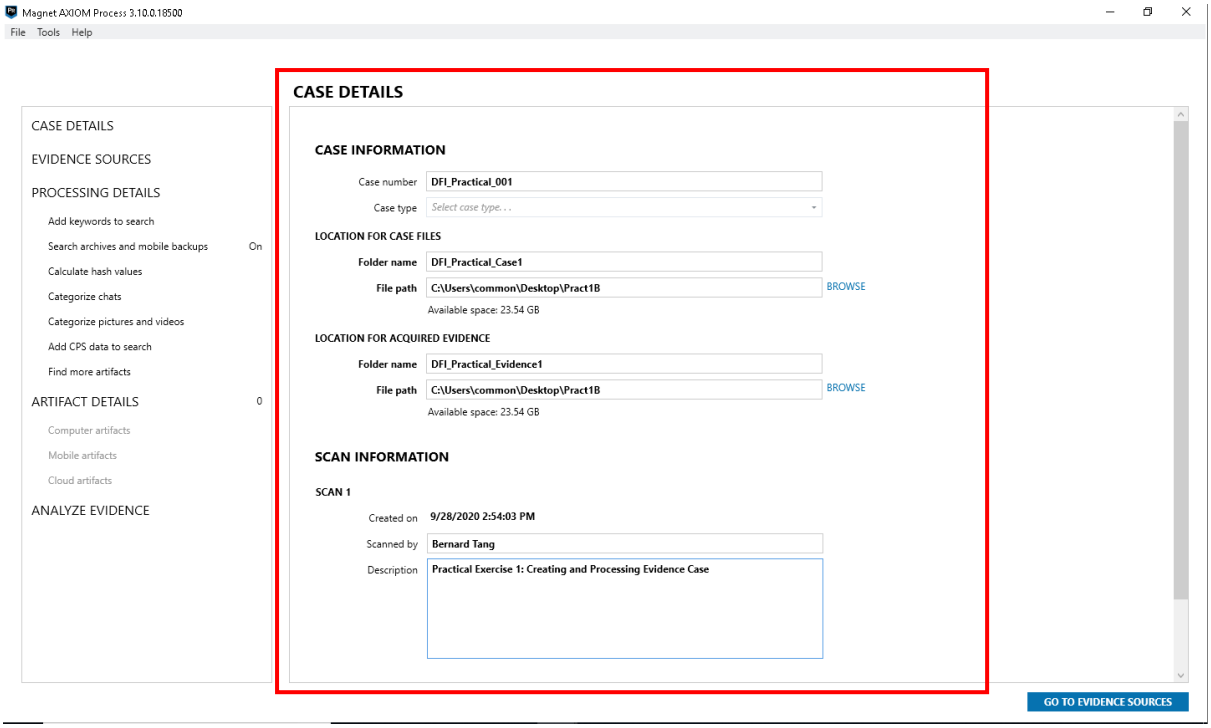


3. Click on "**Create New Case**"

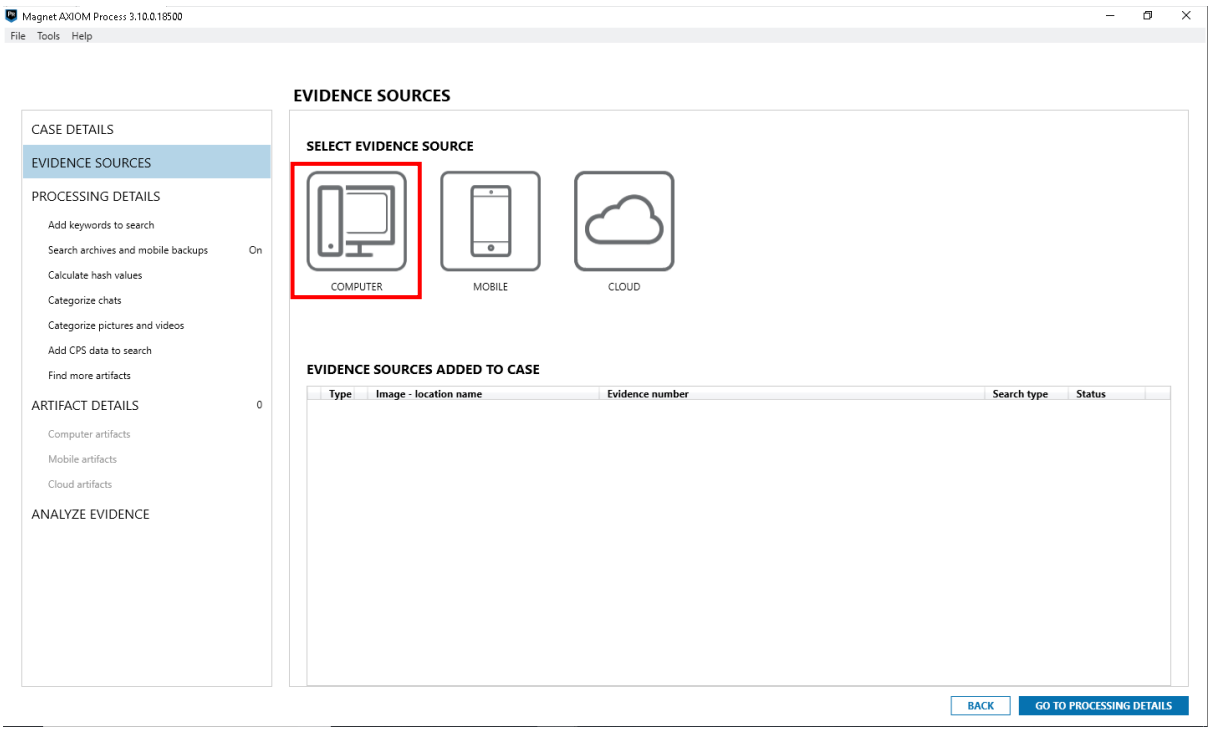

Magnet AXIOM Process 3.10.0.18500
File
Tools
Help
CREATE NEW CASE
CREATE NEW CASE
ADD EVIDENCE TO EXISTING CASE
Open existing AXIOM case folder
BROWSE TO A CASE
Open a recent case
No recent cases

4. Fill in the following:

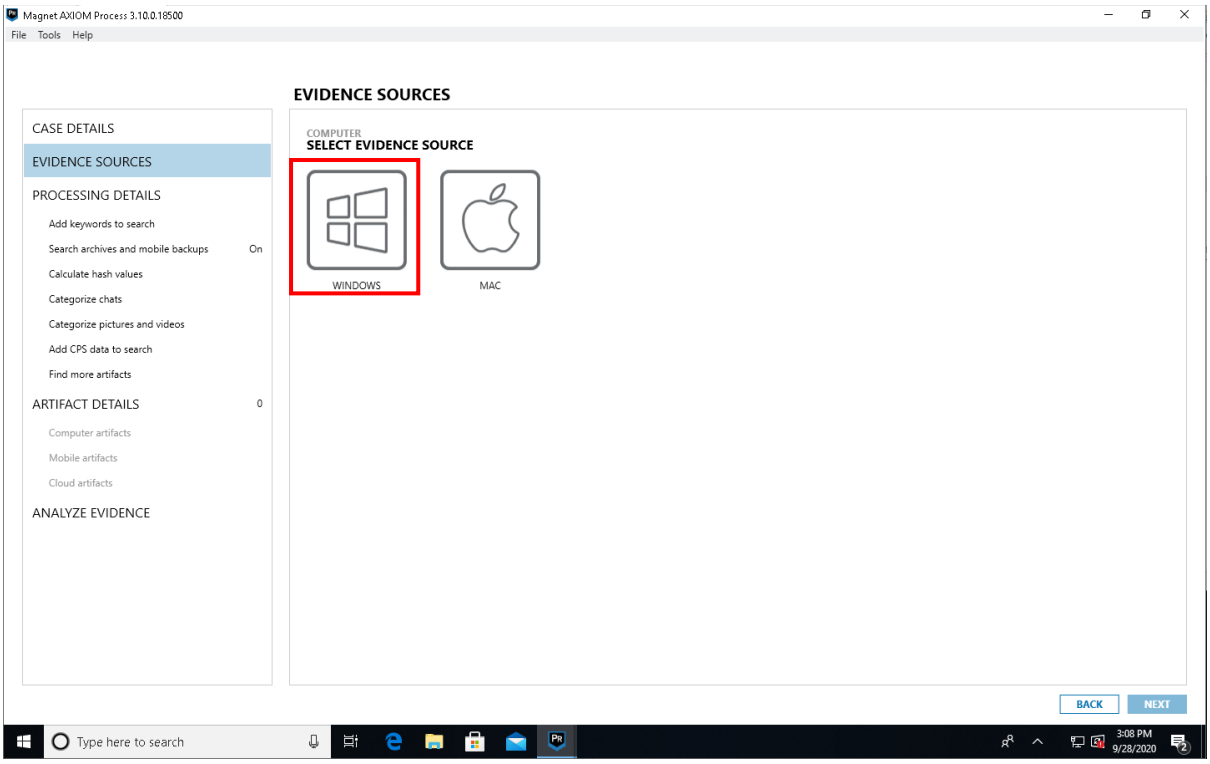
Text Field	Output	Description
Case Information		
Case Name	DFI_Practical_001	In Digital forensics, the case name is usually generated by the Forensic Investigator. An organization usually will have its standard naming convention for a forensic case. The forensic investigator will refer to the organization's standard to generate the case name.
Location for Case File		
Folder Name	DFI_Practical_Case1	This location for case files is where AXIOM saves the main database of the processed case along with supporting files. This database contains all of the artifacts that were located during processing. When working in AXIOM, the majority of information that you view is being pulled from the database in this location.
File Path	<Desired Path of Storing the Case>	The defined the full path where the case is stored in.
Location for Acquired Evidence		
Folder Name	DFI_Practical_Evidence1	This location is where AXIOM saves the forensic image that was extracted from the item of evidence (e.g., the hard drive or the cell phone). This forensic image contains all data that was able to be extracted, and it is significantly larger than the main case database.
File Path	<Desired Path of Storing the Case>	The defined the full path where the acquired evidence is stored in.
Scan Information		
Scanned By	<Name_StudentID>	The name of the forensic investigation
Description	Practical Exercise 1: Creating and Processing Evidence	Description of the forensic investigation. Usually includes the acquire evidence's specifications such as hard disk brand, model, size and serial number.



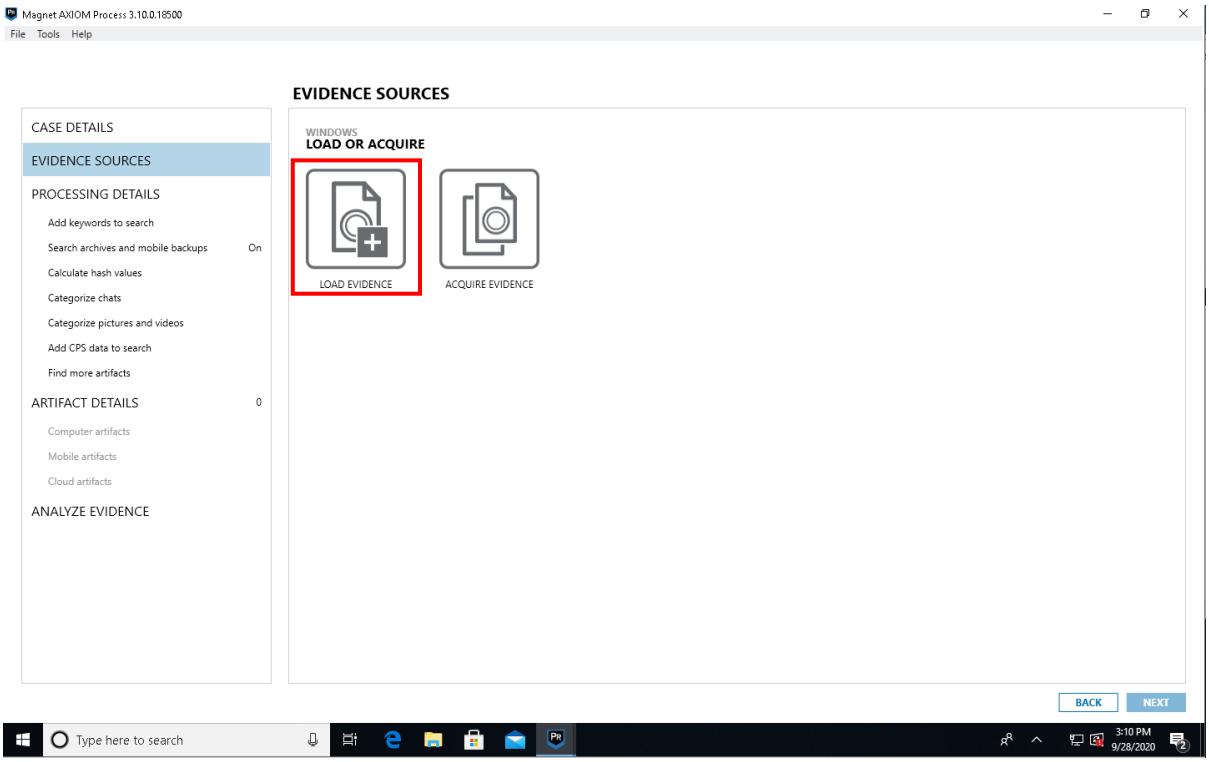
5. Upon complete of filling in the information, click on "**Go to Evidence Source**" at the bottom left of the AXIOM Process interface to proceed on adding the acquired evidence hard disk to the case.
6. To add the acquired evidence, click on "**Computer**" within the Evidence Source tab



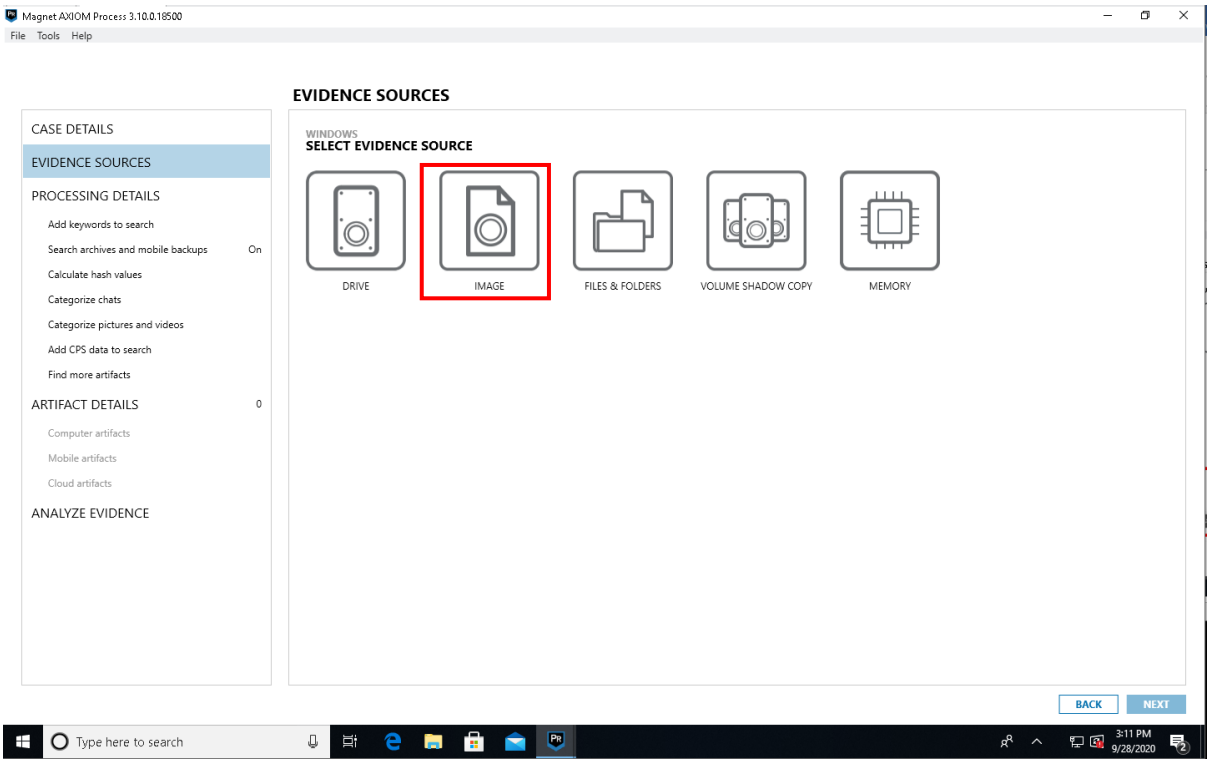
7. Click on "**Window**"



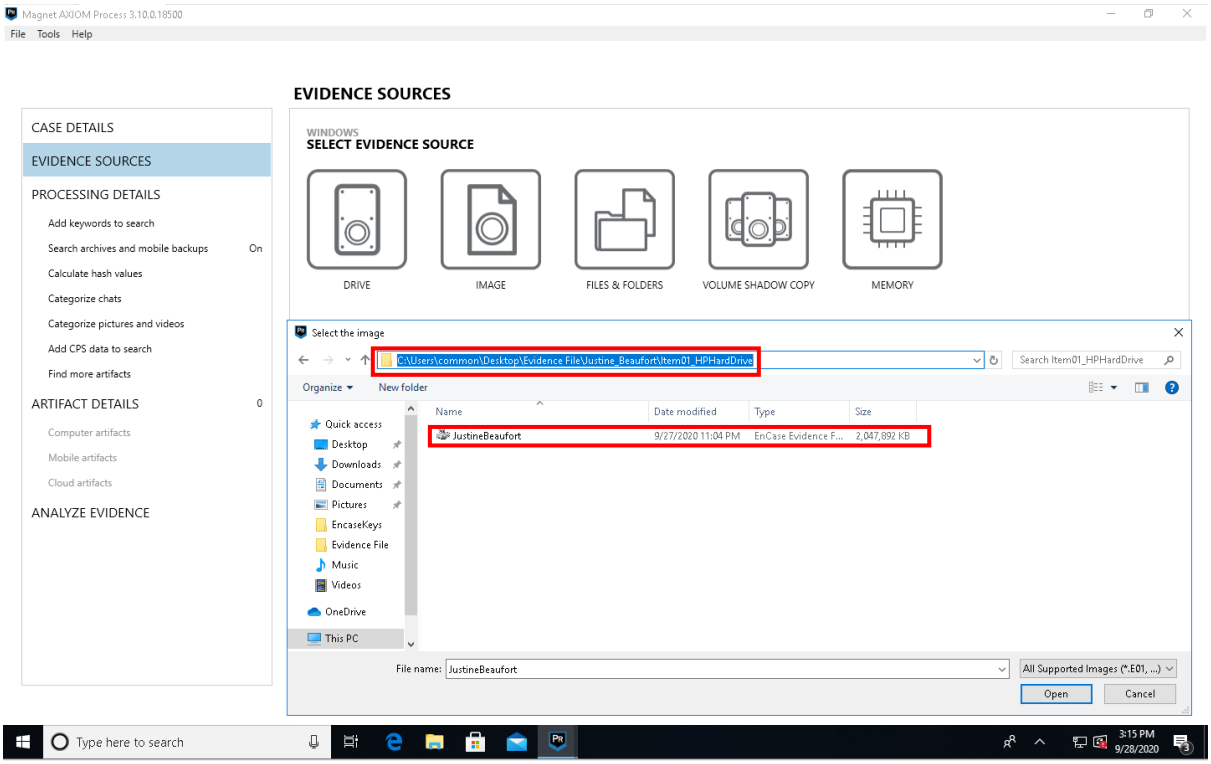
8. Click on "**Load Evidence**"



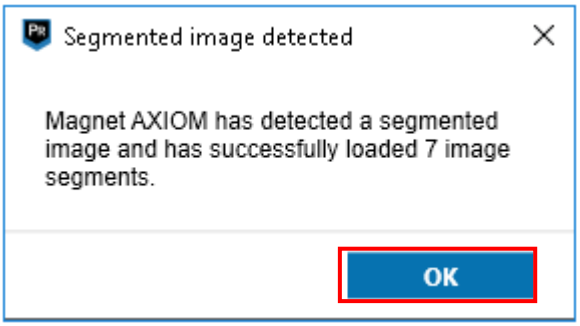
9. Click on "**Image**"



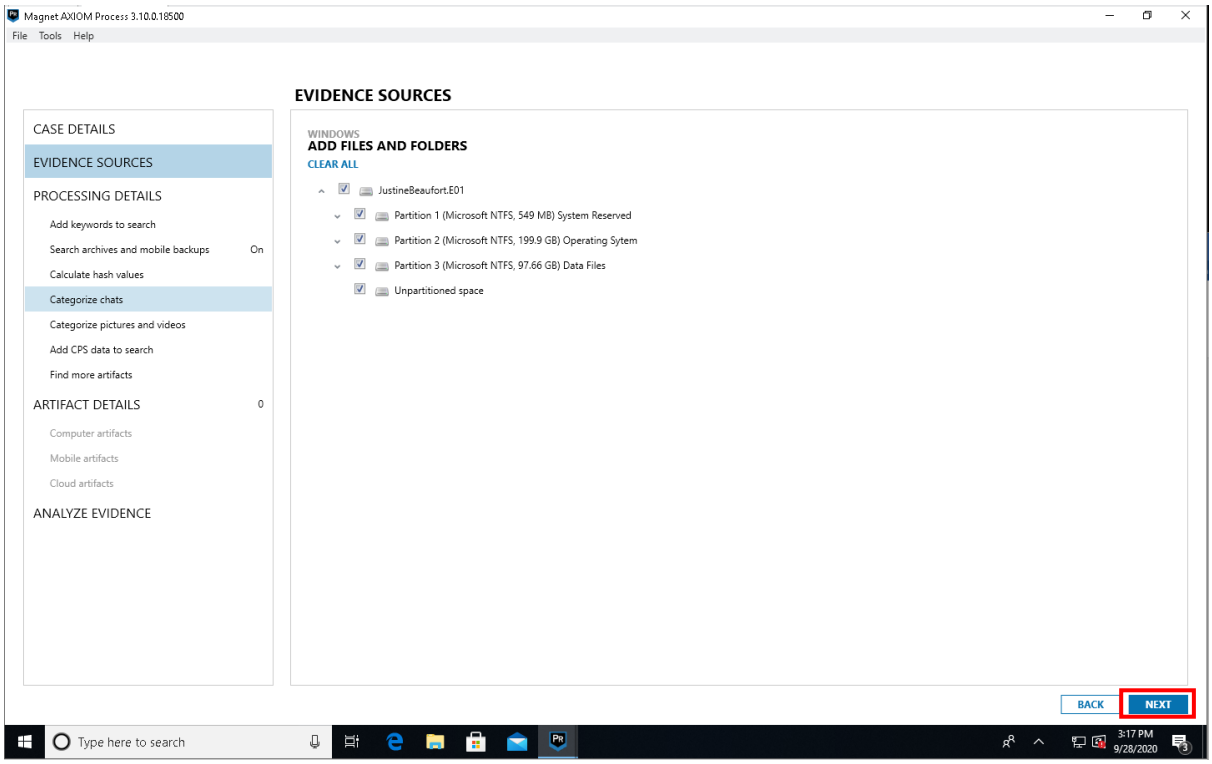
10. Browse to "**C:\Users\common\Desktop\Evidence File\Justine_Beaufort\Item01_HPHardDrive**"



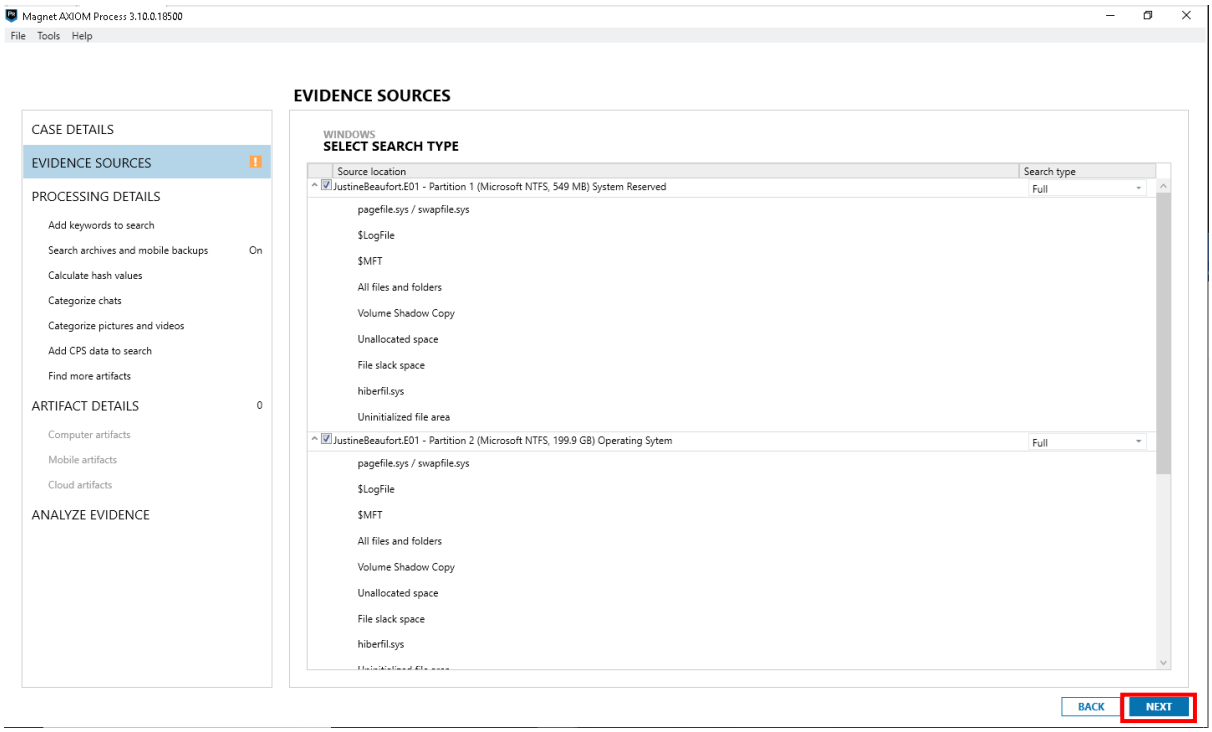
11. Click "**Ok**", when



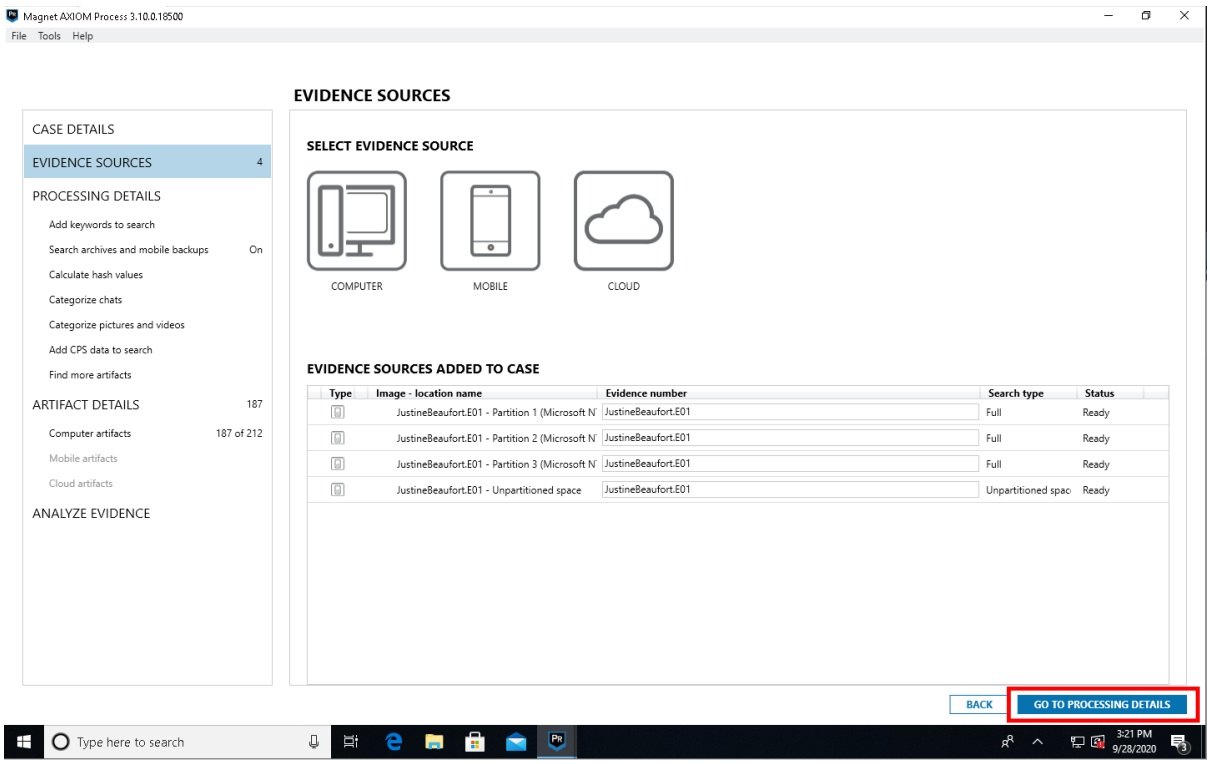
12. Click "**Next**"



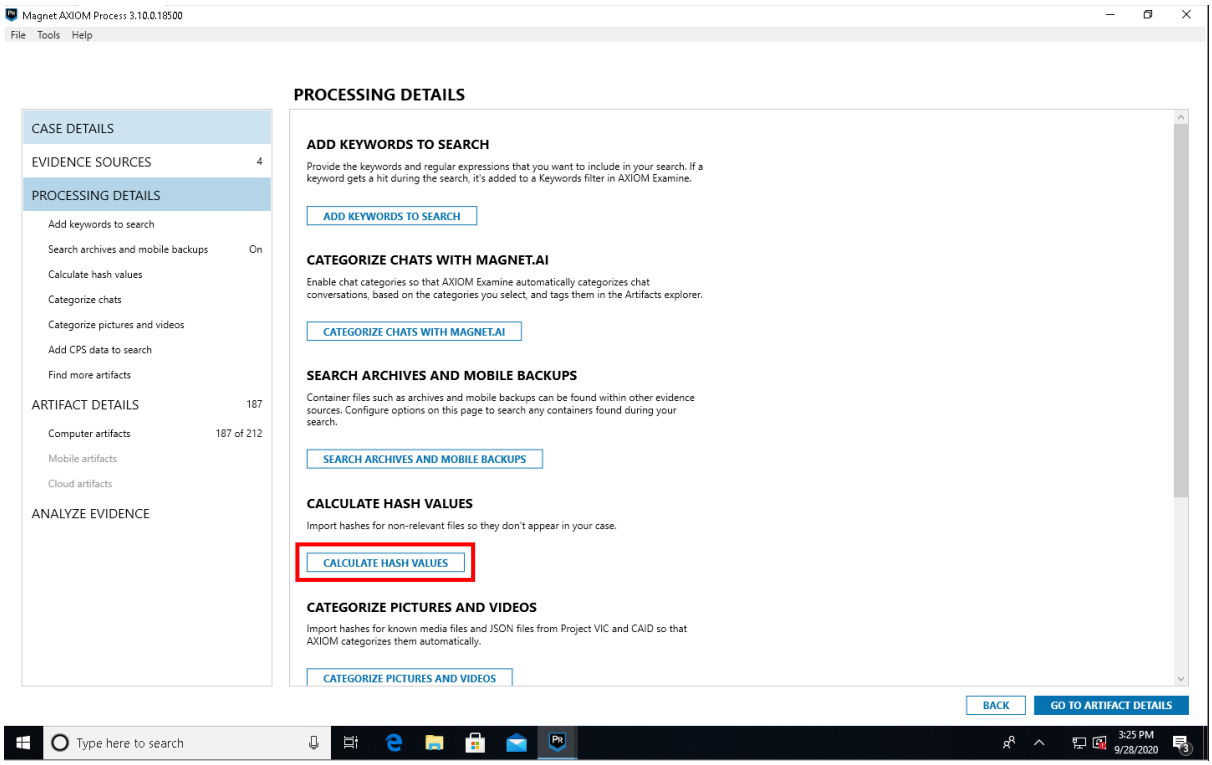
13. Leave the setting as it is and click "**Next**"



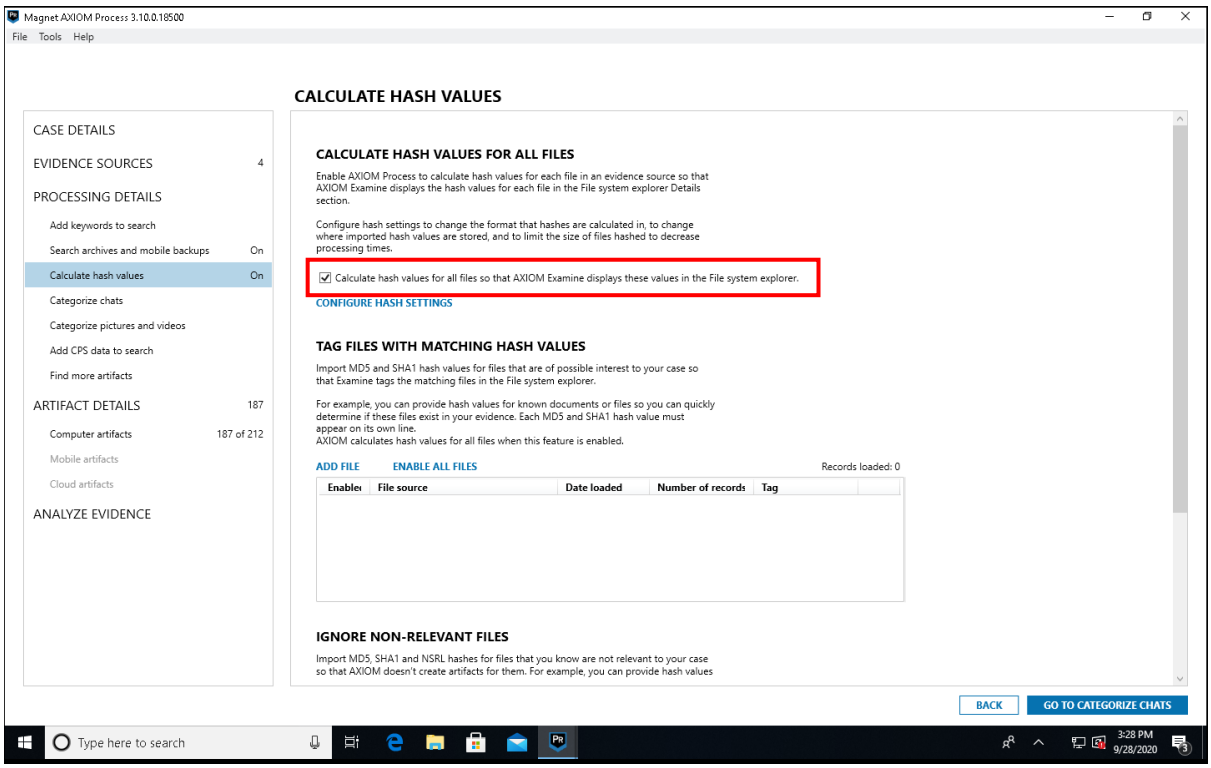
14. Leave the setting as it is and click "**Go to Processing Details**"



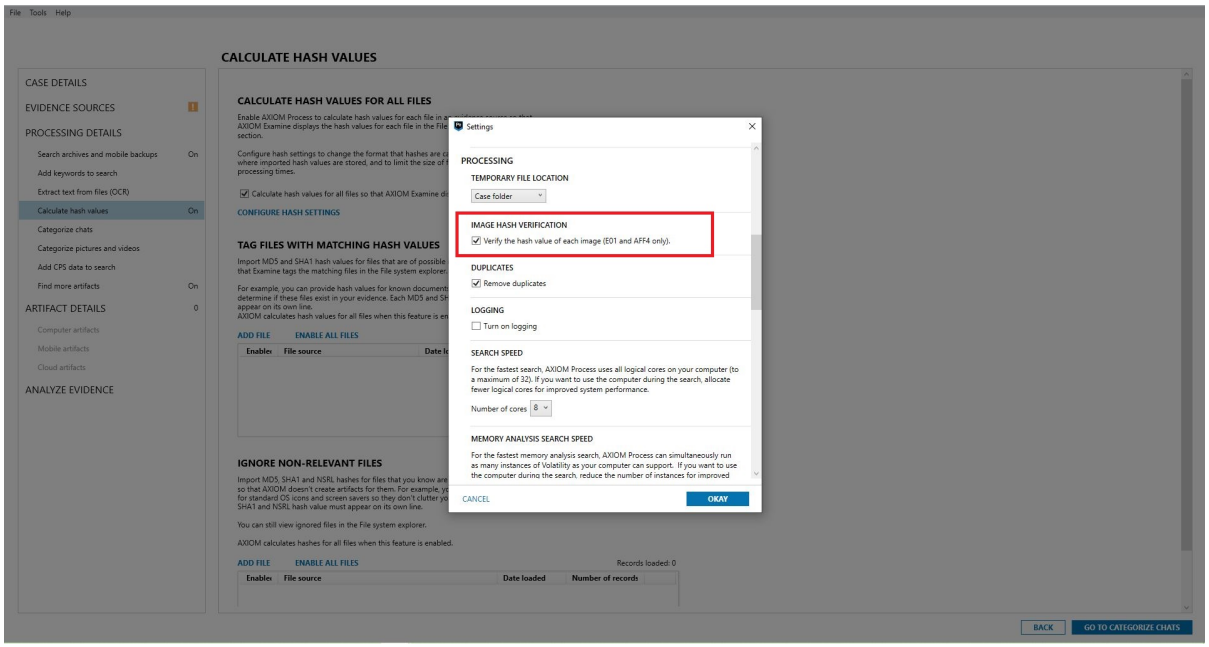
15. We are required to calculate and computer the hash of every file for this practical as Digital Forensic emphasize on the hash to ensure the accuracy of the evidence. With that in mind, Click on "**Calculate Hash Values**"



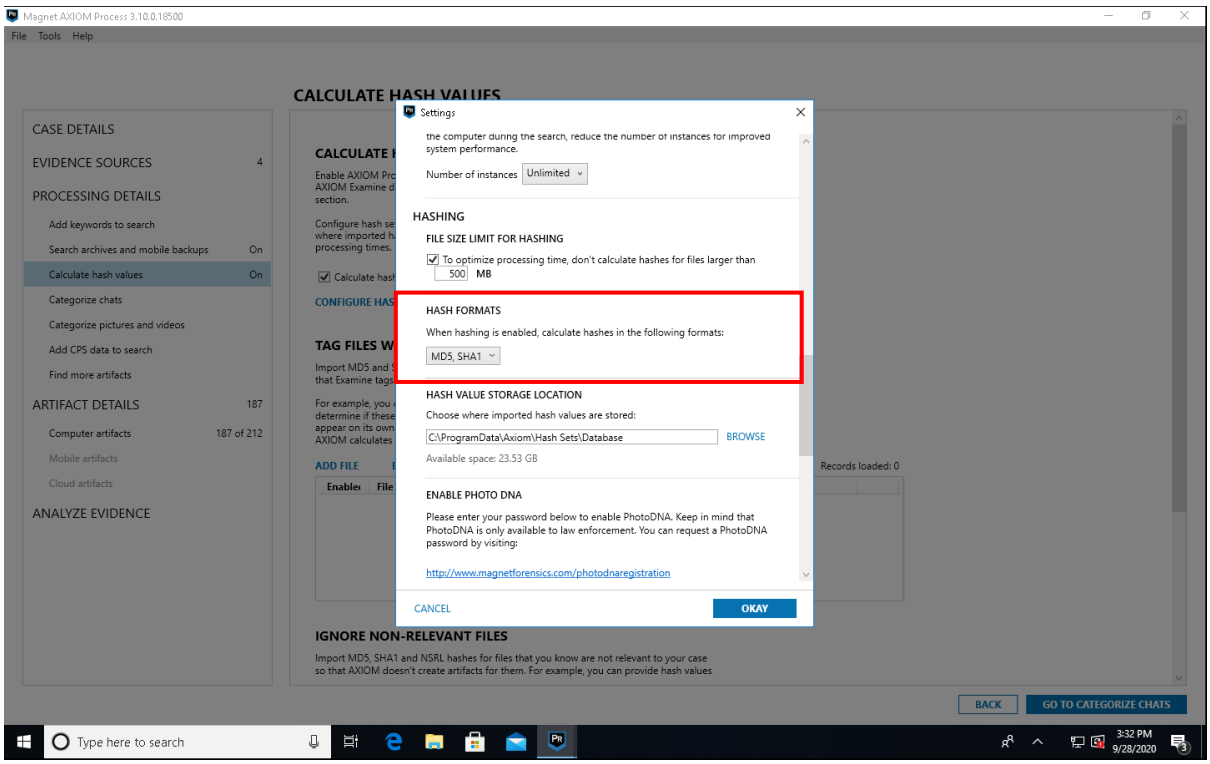
16. Select the "**Calculate hash values for all files so that AXIOM Examine displays these values in the File system Explorer**"



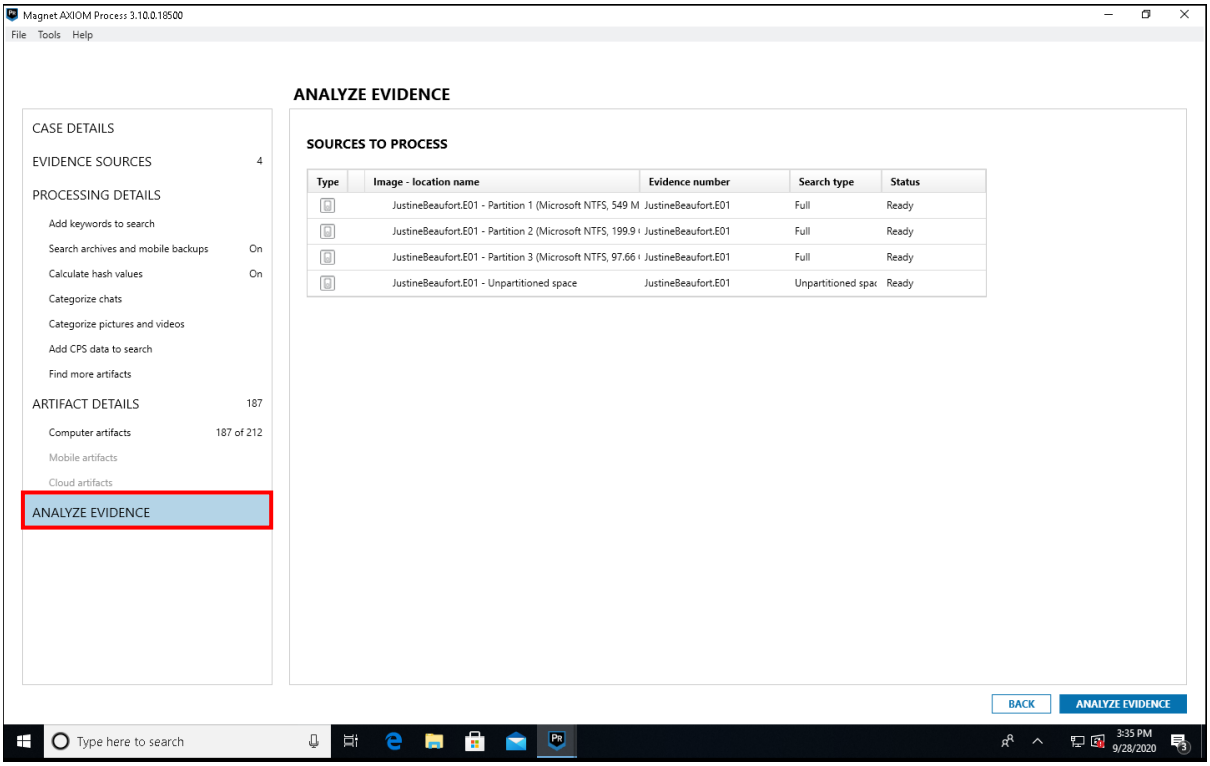
17. Click on "**Configure Hash Settings**", a window settings will pop up, scroll down the window settings to "**PROCESSING**" and ensure the check box is tick on "**IMAGE HASH VERIFCATION**" (*Gives **"JustineBeaufort.E01"** image file a verification hash*)



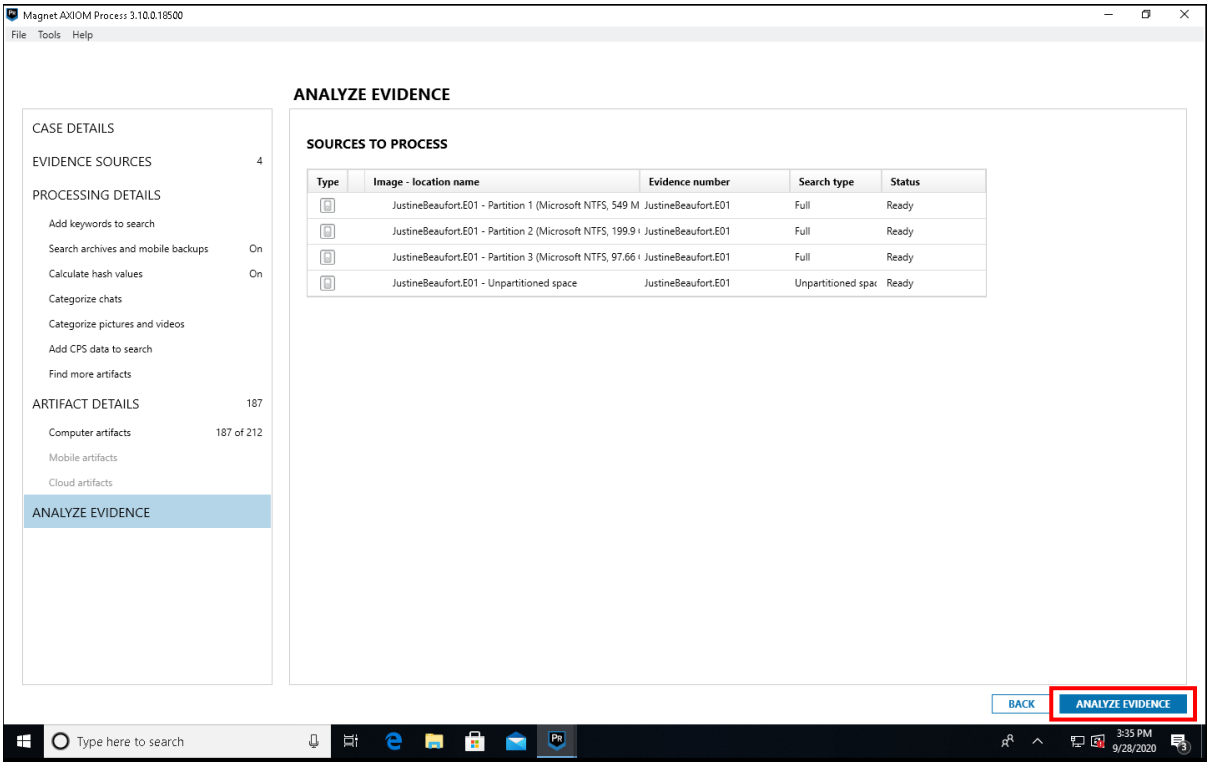
18. Click on "**Configure Hash Settings**", scroll down to "**Hash Formats**" change the options to "**MD5, SHA1**" and then click on "**Okay**"



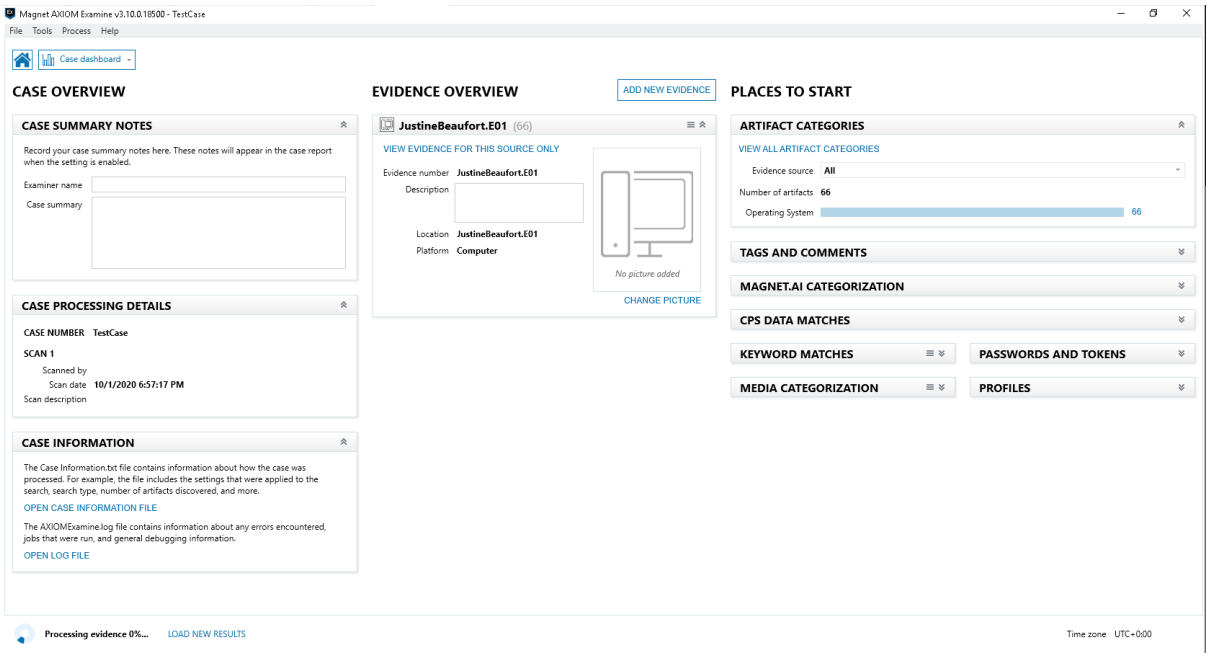
19. After all the configurations were selected you may skip all the other configurations and move on to "**Analyze Evidence**" on the left panel of the interface.

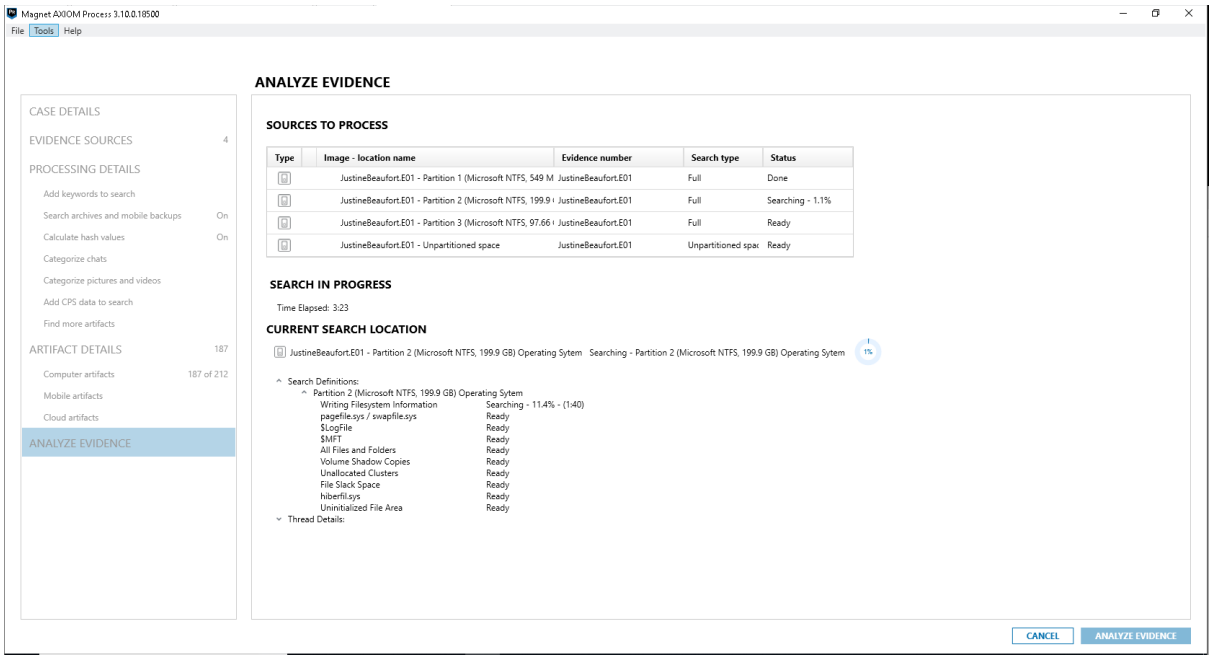


20. Click on "Analyze Evidence" on the bottom right of the AXIOM Process interface to process the evidence



21. Magnet AXIOM Process will now initiate the processing of the evidence. At the same time, Magnet AXIOM Examine application will start, you will notice that there will be 2 application.



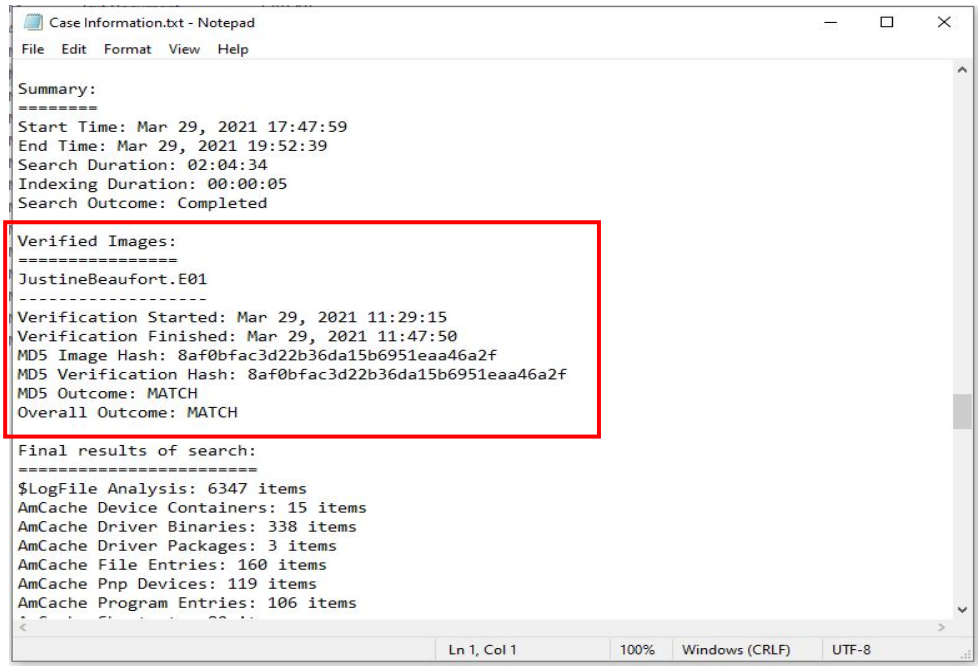


22. The process of analyzing and processing the evidence would take up to 3 hours to complete. You may skip this process, close all AXIOM application, and proceed on to Practical 2 exercises.

23. Assuming that processing is completed. Mentioned in the earlier section (4.) of this practical. Navigate and locate the text file "**Case Information.txt**".
    a. Location for Case File
        i. Folder Name: DFI_Practical_Case1
        ii. File Path: <Your Preferred Path> where you had created for this

exercise

24. Scroll Down to "**Verified Images**". You will be able to see the verification hash matches the acquired image file (. E01). Thus, verify that a forensic image was captured successfully (*bit-for-bit copy*).



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