

ELITE TECH INTERN INTERNSHIP DOCUMENTATION

TASK1: FILE INTEGRITY CHACKER.

- INTEGRITY: It is the part of CIA TRAIID which is designed to guide the policies for information security within the organization. Ensuring data is not modified either in transit or at storage. This can be achieved my using Hashing
- Hashing is the transformation of string of characters into fixed length of value or key that represents the original string

Examples: ABCDEFG 2ECDDE398067540867136D is the hash value of the string

- Hashing is one way it is not possibly get data back from the Hash value.
- Hashing is used to ensure the integrity of the data.
- There are many ways to calculate the Hash value
- MD5 HASH: 32 BIT HEXADECIMAL CHARACTERS STRING
- SHA1 HASH: 40 BIT HEXADECIMAL CHARACTERS STRING
- SHA 256 HASH: 64BIT HEXADECIMAL CHARACTERS STRING
- SHA 512 HASH: 128 HEXADECIMAL CHARACTERS STRING

TOOLS USED TO CHECK THE INTEGRITY OF THE FILE

1. HASH MY FILES
2. HASH CAL
3. VIRUS TOTAL
4. HASH TOOL
5. HASH PAD USED BY MICROSOFT
6. FTKIMAGER/AUTOSPY These two are the forensic tools used for examining Digital evidence and they can also generate and compare hashes of file system images.

Hash value of two files will not be the same.

Hash value of the file changes even if we add a small space or comma, or string or a line

Hash value will be different for same file with different file extension i.e., DOC, PDF.

If two different files having the same hash value then the file is corrupted

Or these can also occur because of the collision which means two files used SHA1 hashing algorithm.

It is always recommended to use updated hash algorithms always it is recommended to use SHA 512 Hashing.

I am attaching some of the practical observations of file hashes in different algorithms using hash my files and virus total

HashMyFiles							
File Edit View Options Help							
Filename	MD5	SHA1	CRC32	SHA-256	SHA-512	SHA-384	Full
TCS internship docum...	b924a95cfb702130c5792809790199ea	c9316af01f70caa1f3bf3cdbc29ad8100f1c40d3	46b01e70	fa722593b40b9f6e0ffc56e746dd786946a07a...	e81cd99b7f4de14ef39777227364ad0b3a188...	f3a3720f07cee4153ae8c97bea211ba799ab61...	C:\N
1 file(s)							
NirSoft Freeware. https://www.nirsoft.net							

MD5, SHA1, CRC32, SHA256, SHA512, SHA384 OF A FILE WITH THE EXTENSION OF .PDF

HashMyFiles							
File Edit View Options Help							
Filename	MD5	SHA1	CRC32	SHA-256	SHA-512	SHA-384	Full
TCS internship docum...	b924a95cfb702130c5792809790199ea	c9316af01f70caa1f3bf3cdbc29ad8100f1c40d3	46b01e70	fa722593b40b9f6e0ffc56e746dd786946a07a...	e81cd99b7f4de14ef39777227364ad0b3a188...	f3a3720f07cee4153ae8c97bea211ba799ab61...	C:\N
TCS internship docum...	e9fcb057c3338fa9dd8371b732738ab	e330dd5060ed2db1e5ed186abf928486643de...	8a376892	62bad83338a287704b52af3404732df098bc...	641d5bf408da835b131fd7554b8f7e8d0ed3...	b9d61bcb40e152710b0ffa7aeff1097125e828...	C:\N
2 file(s)							
NirSoft Freeware. https://www.nirsoft.net							

MD5, SHA1, CRC32, SHA256, SHA512, SHA384 OF A FILE WITH THE EXTENSION OF .PDF AND .DOC

Hash values of the files using virus total tool with different extensions.

62badd83338a287704b52af3404732df098bc894375f0cef5360462c7e788593

0
/ 65
Community Score

No security vendors flagged this file as malicious

Reanalyze Similar More

62badd83338a287704b52af3404732df098bc894375f0cef5360462c7e788593
TCS internship document task 2.docx
docx

Size
39.95 KB

Last Analysis Date
1 minute ago

DOCX

DETECTIONDETAILSRELATIONSBEHAVIORCOMMUNITY

Join our Community and enjoy additional community insights and crowdsourced detections, plus an API key to automate checks.

Security vendors' analysis

Acronis (Static ML)	Undetected	AhnLab-V3	Undetected
Alibaba	Undetected	AliCloud	Undetected
ALYac	Undetected	Antiy-AVL	Undetected
Arcabit	Undetected	Avast	Undetected
Avast-Mobile	Undetected	AVG	Undetected

Hash value of the file with the extension .docx

how to get file hashes - Google

VirusTotal - File - 62badd83338a287704b52af3404732df098bc894375f0cef5360462c7e788593

virustotal.com/gui/file/62badd83338a287704b52af3404732df098bc894375f0cef5360462c7e788593/details

62badd83338a287704b52af3404732df098bc894375f0cef5360462c7e788593

TCS internship document task 2.docx

39.95 KB1 minute agoDOCX

Community Score

DETECTIONDETAILSRELATIONSBEHAVIORCOMMUNITY

Join our Community and enjoy additional community insights and crowdsourced detections, plus an API key to automate checks.

Basic properties

MD5	e9fcb057c5338fa6fd6371b722738ab
SHA-1	e330dd5060ed2db1e5ed186abf928466643debb5
SHA-256	62badd83338a287704b52af3404732df098bc894375f0cef5360462c7e788593
Vhash	1ca19d7e57f6bbd1ca69858cf39ba7e3
SSDEEP	768:eiIN4wMcN+dtDFXs5fLiINDDAZ9orZ9MJZUJ2Q105MqF4QjPIX1yr:/X4Ly5FBw9nD81yxSXL1M
TLSH	T11F03E03DE014F85AC48580BBD0D0181F304E18BD709D76F3E96A6EA7E845F72B8D09A
File type	Office Open XML Document
Magic	Microsoft Word 2007+
Trid	Word Microsoft Office Open XML Format document (52.2%) Open Packaging Conventions container (38.8%) ZIP compressed archive (8.8%)
Magika	DOCX
File size	39.95 KB (40905 bytes)

History

Creation Time	2023-04-18 04:52:00 UTC
First Submission	2025-04-05 10:28:15 UTC
Last Submission	2025-04-05 10:28:15 UTC
Last Analysis	2025-04-05 10:28:15 UTC

Details of the file along with hash values with the extension.docx

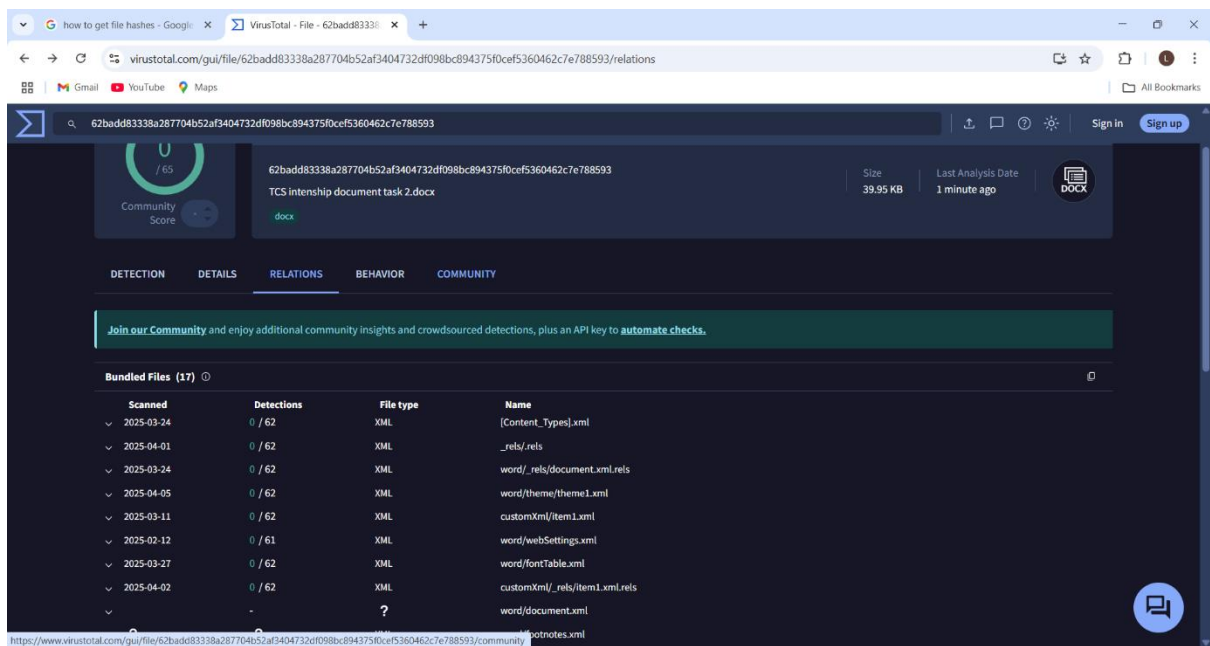


Image showing relations of the file

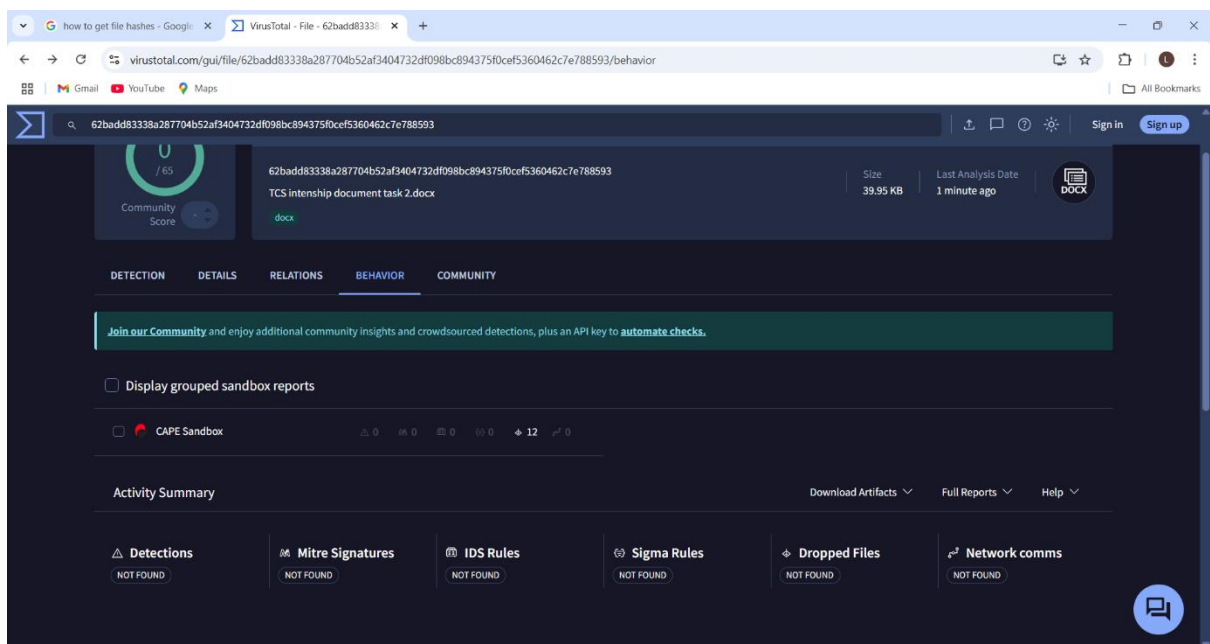


Image showing behaviour of the file

Filename	MD5	SHA1	CRC32	SHA-256	SHA-512	SHA-384	Full
TCS_intenship_docum... a12528925192d08e0117ef5d93fcae		494272204e688d095ada1d5033e449b526e63...	d8e6ccad	04d95cce8120881fc3b27177141ba790a86df...	18aa747978487be522c655e60cf24bbefdbb...	8558a913a622b1f89c9a134efac5a2956e7d1...	C:\

Image showing change in the Hash value of the file by changing the text of the file

OBSERVE CHANGES IN THE HASH VALUE OF THE FILES

Now I will represent some practical observations of changes in the hash values of the file by comparing them with original hash value of the file

Filename	MD5	SHA1	CRC32	SHA-256	SHA-512	SHA-384	Full
s1.txt	7012acbb1d394b20567dffbf0992b677	ea7b8499509da0261a19e48a8631e5a506f0de...	85892ae0	cfce4e2952591e79a0dea165a952dba4f099d3...	c93b972a8979412ce14614da57e4902ce982f...	162c28aa278d179846c04fa2a1808bd5c96ac...	C:\
s2.txt	c1005563918e88a2b79f9f1e913890ba	c004907c471b6b5b432d8254c27bda484cedb...	aa7598ef	e6a78b6b6c5abbe83271cc15c27cc17b652cb...	4bbd2af140c9ab0c889298220be9dc7cc765e3...	d3aa137859be28af34020ef1ea1525ba20fa71...	C:\
s3.txt	3a1e4ef379fefcc22461a99b2c7755	3bf1916de4f703c4c7445023a46a8b3be465...	ea8c2ab5	94ca46a210b2b0b0b41c1e1a7b6f726425...	523e4eac464535ef0b0e14dea53a9f96b044...	13ac235c568a2289ea099bdac9d9026e977f...	C:\
s4.txt	b356c53bc0883523f1a81052a77fe16	79d107eab6f016f34f79f633a13b7d0af33afa	89b4b7c0	66e338abf814577b3b1a2c1e0bde48c4a3b...	d5afdf9a5dfb239ad6553414bdc3044721539e...	b641e64d1a497c42b6ff7a1ee56672100adb...	C:\
s5.txt	1c9f102cf74477516c97da28a226f0	6483f797831681ac4ccbd1091e7511e837ad5...	b1d1d5d4	322c95ed5f63b1567da07a3b7a1ccca8245be...	c4fa59e051d406fea70766948e11b0b2b040...	b392b35e30e79042f11dec095b96921eb31a18...	C:\

Image represents the hash values of the files and let us compare produced hash values with the original hash values of the respective files.

S1 - 7012acbb1d394b20567dffbf0992b677 file using MD5 hashing algorithm and it is unchanged
obtained hash value of the file is: 7012acbb1d394b20567dffbf0992b677

S2 - 60e8b78478be471c0c0d77ca73dc5b78 file using MD5 hashing algorithm and it is changed to c1005563918e88d2b79f391e9138906a

S3 - 3a1adefe379faefcc22e61a69b2c7f55 file using MD5 hashing algorithm and it is not changed 3a1adefe379faefcc22e61a69b2c7f55

S4 - 2c7994821e197168a87a96ecaf4bba5e file using MD5 hashing Algorithm and it is changed to b356c53bcb083522fd1a81052a7ffe16

S5 - d75caddc88f98fc6b01c5d6399838e3c file using MD5 hashing Algorithm and it is changed to 1c9f102cf7447f77516c97dd28a226f0

Comparing hash value of the files using virus total tool

Now I am representing my observations of changes in the hash values of the files by comparing them with the original hash values of the file. And the change in the hash values of the files is observed. And the changes has recorded same as hash my files tool. Detailed images of the observations are represented below. In this document, I am also representing the hash value of a URL analysed by using virus total tool by analysing the changes in the hash value of the malicious URL I obtained from phish Tank website



screenshots of virustotal hashvalues.pdf

Above pdf has all the hash observations using virus total tool

Standards measure to guarantee integrity include

- Cryptographic checksums
- Using file permissions
- Uninterrupted power supplies
- Data backups