











100 FREE SECURITY **TOOLS FOR ETHICAL** HACKERS AND **FORENSIC** INVESTIGATORS



For ethical hackers and forensic investigators







For ethical hackers and forensic investigators

- **1. Autopsy** Open source digital forensics platform to analyze hard drives and smart phones https://www.autopsy.com
- **2. EnCase** Commercial computer forensics software for e-discovery and investigations by OpenText https://www.opentext.com/products-and-solutions/products/software/encase-platform
- **3. AccessData (FTK)** Forensic toolkit computer investigation software by AccessData https://accessdata.com/products-services/forensic-toolkit-ftk
- **4. X-Ways Forensics** Integrated computer forensics software by X-Ways Software Technology http://www.x-ways.net/forensics/
- **5. Sleuth Kit** Open source digital forensics tools for analyzing disk images and file systems https://www.sleuthkit.org
- **6. Volatility** Memory forensics framework to analyze volatile memory dumps and artifacts https://www.volatilityfoundation.org/
- **7. Wireshark** Network protocol analyzer useful for network forensics and traffic analysis https://www.wireshark.org
- **8. Cellebrite UFED** Commercial mobile forensic software to extract data from phones and tablets https://www.cellebrite.com/en/ufed-ultimate/
- 9. Email Collector Tool to collect and analyze email data during investigations https://www.accessdata.com/products-services/e-discovery/email-examination/ftk-email-collector
- **10. Forensics (DFF)** Digital forensics framework, an open source platform for investigations https://github.com/arxsys/dff
- **11. Magnet AXIOM** Commercial digital investigations platform from Magnet Forensics https://www.magnetforensics.com/products/magnet-axiom/
- **12. Oxygen Detective** Cloud extraction tool for investigations involving cloud services https://www.oxygenforensic.com/en/oxygen-detective
- **13. OSForensics** Specialized forensics tools for Microsoft systems from PassMark https://www.osforensics.com/
- **14. NetworkMiner** Open source network forensic analyzer useful for investigating traffic http://www.netresec.com/?page=NetworkMiner
- **15. RegRipper** Tool to parse Windows registry files and dig for useful data https://github.com/keydet89/RegRipper3.0
- **16. Bulk Extractor Scans disk images and e**xtract interesting bits of data https://github.com/simsong /bulk_extractor
- 17. Ghiro Web site screenshots and analysis for forensic investigations http://www.getghiro.org/
- **18. Scalpel** File carver which recovers files based on headers and footers http://www.digitalforensicssolutions.com/Scalpel/
- 19. HxD Hex editor useful for analyzing raw disk and memory dumps https://mh-nexus.de/en/hxd/
- **20. TestDisk** Data recovery tool, useful when file systems get corrupted https://www.cgsecurity.org/wiki/TestDisk
- **21. PhotoRec** Recovery tool specifically focused on photos and media files https://www.cgsecurity.org/wiki/PhotoRec
- 22. CAINE Italian GNU/Linux live distribution with many forensics tools https://www.caine-live.net
- **23. Axiom Cyber** Commercial digital forensics and incident response platform

https://axiomcyber.com/axiom-cyber/

- **24. Belkasoft Evidence** Commercial all-in-one forensics solution for Windows, mobile etc https://belkasoft.com/evidence
- 25. Fibratus Tool to explore and trace Windows kernel activity and data

https://www.jpcert.or.jp/english/pub/sr/ir_research.html

- **26. Autopsy Browser** GUI interface for autopsy digital forensics platform https://www.autopsy.com/browser/
- 27. Kali Linux Penetration testing Linux distribution with many useful security tools https://www.kali.org
- 28. DEFT Linux distribution configured specifically for computer forensics http://www.deftlinux.net
- **29. Volatility Framework** Advanced memory forensics framework with plugins and APIs https://www.volatilityfoundation.org/
- 30. PyFlag Legacy Australian forensic and log analysis GUI platform http://www.pyflag.net

For ethical hackers and forensic investigators

31. Plaso (log2timeline) - Extract timestamps from various logs and aggregate timeline https://plaso.readthedocs.io/en/latest/sources/user/log2timeline.html 32. TSK (The Sleuth Kit) - File system and disk analysis tools originally focussed on NTFS https://www.sleuthkit.org/sleuthkit/ 33. Redline - Host investigations and malware analysis tool by FireEye https://www.fireeye.com/services/freeware/redline.html 34. Snort - Open source intrusion detection and network monitoring system https://www.snort.org 35. Tcpdump - Capture and analyze network traffic on Unix-like systems https://www.tcpdump.org 36. Ngrep - Search within network traffic payloads like grep for text streams http://ngrep.sourceforge.net/ **37.** dcfldd - Disk cloning and forensics tool, version of dd with hashing https://dcfldd.sourceforge.net/ 38. Wireshark - Network traffic analyzer useful for network forensics https://www.wireshark.org 39. SIFT (SANS) - Ubuntu-based distribution for forensic analysis https://digitalforensics.sans.org/community/downloads **40. Paladin** - USB image mounted as virtual drive with write-protection https://sumuri.com/software/paladin/ 41. CAINE Live - Self-contained bootable forensic environment https://www.caine-live.net/page5/page5.html 42. XRY (XAMN) - Commercial mobile forensic software to analyze phones https://msab.com/xry/ **43. BlackLight** - Powerful Windows-based forensics analysis platform https://www.blackbagtech.com/blacklight.html 44. WinHex - Hex editor, particularly helpful for low-level analyzing raw data https://www.xways.net/winhex/ 45. Access FTK Imager - Disk and volume imaging software from AccessDatahttps://accessdata.com/productdownload 46. DC3DD - Improved version of dd for forensics, handles errors better https://github.com/Defense-Cyber-Crime-Center/DC3-DD 47. Raptor - Validation tool to verify integrity of forensic copies http://forensic.rampar.net/ 48. EnCase Imager - Disk imaging tool from Guidance Software https://www.guidancesoftware.com/encase-49. Guymager - Open source disk cloning and imaging tool for Linux https://guymager.sourceforge.io 50. Scalpel - File carver recovering files based on header/footer signatures http://www.digitalforensicssolutions.com/Scalpel/ 51. Extundelete - Used to recover deleted files from mountable images http://extundelete.sourceforge.net/ 52. Xplico - Network forensics tool that rebuilds sessions from traffic http://www.xplico.org/ 53. Foremost - File carving utility to recover files using header/footer_definitions_ http://foremost.sourceforge.net 54. Hunchback - High speed packet capture and transmission tool https://hunchback.sourceforge.net/ 55. Autopsy Tools - Plugins and tools used alongside Autopsy forensics GUL https://www.autopsy.com/extend-autopsy/ 56. OSForensics Imager - Hardware write block tool for connecting devices https://www.osforensics.com/tools/write-blockers.html 57. Dislocker - Decrypts Bitlocker encrypted volumes with mounted filesystem https://github.com/Aorimn/dislocker 58. Bulk Extractor - Extract forensically interesting information from disk images https://github.com/simsong/bulk extractor 59. SANS SIFT - Ubuntu-derived distro for digital forensic analysis https://digitalforensics.sans.org/community/downloads 60. Live View - Volatile memory analysis tool for Windows systems http://liveview.sourceforge.net/ 61. LRR - Tool for viewing Windows artifacts including LNK files https://github.com/EricZimmerman/LinkRunner 62. NTFS-3G - Open source cross-platform NTFS driver with write support https://www.tuxera.com/community/open-source-ntfs-3g/ 63. WindowsSCOPE - Registry analysis tool for dumped SYSTEM/SAM/SECURITY hives http://www.windowsscope.com/

64. Volafax - Forensic system suited for investigations over remote areas

https://github.com/jipegit/FlaxVolafox

For ethical hackers and forensic investigators

- **65. Amcache Parser** Recovers data from Windows 10 Amcache.hve artifact file https://tzworks.net/prototype_page.php?proto_id=11
- 66. The Hive Web interface offering querying capabilities for hive files https://thehive-project.org
- **67. GRR Rapid Response** Incident response framework focused on remote live forensics https://github.com/google/grr
- **68. Rekall** Advanced forensic memory analysis framework powered by Python http://www.rekall-forensic.com/
- **69. DFF** Open source digital forensics framework and platform written in Python https://github.com/arxsys/dff
- **70. SSDeep** Fuzzy hashing tool used for malware clustering and piecewise comparisons https://ssdeep-project.github.io/ssdeep/index.html
- 71. KAPE Target acquisition tool focused on enterprise lines of business https://www.krollartifactparser.com/
- 72. USB Write Blocker Hardware ensuring write protection when imaging USB devices
- **73. AIL** Network and host monitoring system for identification of intrusions https://www.cert.org/incident-management/products-services/ail.cfm
- **74. Rifiuti2** Analyzes Windows Recycle Bin INFO2 files and recovers filenames https://github.com/abelcheung/rifiuti2
- 75. VolDiff Compares memory images and highlights differences for analysis https://github.com/aim4r/VolDiff
- 76. WinAudit Scans Windows systems and reports changes from baseline http://www.winaudit.com/
- **77. hfind** Carves unallocated space and extracts hidden/deleted data into files https://www.mcafee.com/enterprise/en-us/downloads/free-tools/hfind.html
- **78. Yara** Pattern matching tool aimed at malware researchers
- 79. Checkm8 Jailbreaking tool extracting data from passcode locked iOS devices https://checkm8.info/
- **80. Olefile** Python package for parsing OLE and Office documents https://github.com/decalage2/olefile
- 81. Pyew Python tool for malware analysis static and dynamic https://github.com/joxeankoret/pyew
- 82. E01 Examiner Software utility for mounting EnCase evidence file formats https://e01examiner.com/
- 83. USBDeview Handy Windows tool listing all USB devices ever connected https://www.nirsoft.net/utils/usb_devices_view.html
- **84. Autopsy iPhone** Autopsy module adds iOS analysis functionality https://sleuthkit.org/autopsy/plugins.php
- **85. DC3-MWCP -** Collection of tools for forensic enterprise analysis from DC3 https://www.dc3.mil/software-catalog /
- **86. X-Ways Imager** Disc imaging tool to create forensic images, integrated into X-Ways Forensics http://www.x-ways.net/imager/index-m.html
- **87. Memoryze** Memory acquisition and analysis tool for Windows systems

https://www.fireeye.com/services/freeware/memoryze.html

- **88. EVTExtract** Automated parsing modules for Windows event log records https://evtxtract.readthedocs.io/en/latest/
- 89. Speedit Detection and analysis of spyware, keyloggers, trojans etchttps://www.komodia.com/speedit-sdk
- **90. SniffPass** Sniffs passwords and other sensitive information from a <u>network</u>

http://www.komodia.com/sniffpass

- 91. Nmap Network scanning and host discovery tool helpful for reconnaissance https://nmap.org/
- 92. OSINT Framework Gathering publicly available online data regarding targets https://osintframework.com/
- 93. Recon-ng Web based open source reconnaissance framework https://github.com/lanmaster53/recon-ng
- **94. OSINT-SPY** Performs extensive reconnaissance using 300+ OSINT data sources

https://github.com/SharadKumar97/OSINT-SPY

- 95. Shodan Search engine for Internet connected devices https://www.shodan.io
- 96. Maltego Link analysis and data mining for gathering information https://www.maltego.com/
- 97. SpiderFoot OSINT automation tool gathering threat intelligence data https://www.spiderfoot.net/
- **98. Metagoofil** Extract metadata of public documents from a target website

https://github.com/laramies/metagoofil

- **99. TheHarvester** Gather emails, names, URLs from different public sources https://github.com/laramies/theHarvester
- **100. Creepy** Geolocation OSINT tool to extract target location information from social media profiles https://www.geocreepy.com/

For ethical hackers and forensic investigators

Here are those same 100 resources, grouped by function.

Digital Forensics Frameworks:

- **1. Autopsy** Open source digital forensics platform to analyze hard drives and smart phones https://www.autopsy.com
- **10. Forensics (DFF)** Digital forensics framework, an open source platform for investigations https://github.com/arxsys/dff
- **22. CAINE** Italian GNU/Linux live distribution with many forensics tools https://www.caine-live.net
- **26. Autopsy Browser** GUI interface for autopsy digital forensics platform https://www.autopsy.com/browser/
- **27. Kali Linux** Penetration testing Linux distribution with many useful security tools https://www.kali.org
- **28. DEFT** Linux distribution configured specifically for computer forensics http://www.deftlinux.net
- **29. Volatility Framework** Advanced memory forensics framework with plugins and APIs https://www.volatilityfoundation.org/
- **39. SIFT (SANS)** Ubuntu-based distribution for forensic analysis

https://digital-forensics.sans.org/community/downloads

41. CAINE Live - Self-contained bootable forensic environment

https://www.caine-live.net/page5/page5.html

59. SANS SIFT - Ubuntu-derived distro for digital forensic analysis

https://digital-forensics.sans.org/community/downloads

68. Rekall - Advanced forensic memory analysis framework powered by Python http://www.rekall-forensic.com/

Disk Forensics:

- **2. EnCase** Commercial computer forensics software for e-discovery and investigations by OpenText https://www.opentext.com/products-and-solutions/products/software/encase-platform
- **3.** AccessData (FTK) Forensic toolkit computer investigation software by AccessData https://accessdata.com/products-services/forensic-toolkit-ftk
- **4. X-Ways Forensics** Integrated computer forensics software by X-Ways Software Technology http://www.x-ways.net/forensics/
- **5. Sleuth Kit** Open source digital forensics tools for analyzing disk images and file systems https://www.sleuthkit.org
- **30. PyFlag** Legacy Australian forensic and log analysis GUI platform http://www.pyflag.net
- **32. TSK (The Sleuth Kit)** File system and disk analysis tools originally focussed on NTFS https://www.sleuthkit.org/sleuthkit/
- 42. XRY (XAMN) Commercial mobile forensic software to analyze phones https://msab.com/xry/
- **43. BlackLight** Powerful Windows-based forensics analysis platform

https://www.blackbagtech.com/blacklight.html

- 44. WinHex Hex editor, particularly helpful for low-level analyzing raw data https://www.x-ways.net/winhex/
- **45. Access FTK Imager** Disk and volume imaging software from AccessData https://accessdata.com/product-download
- **46. DC3DD** Improved version of dd for forensics, handles errors better https://github.com/Defense-Cyber-Crime-Center/DC3-DD
- **47. Raptor** Validation tool to verify integrity of forensic copies http://forensic.rampar.net/
- **48. EnCase Imager** Disk imaging tool from Guidance Software https://www.guidancesoftware.com/encase-imager
- 49. Guymager Open source disk cloning and imaging tool for Linux https://guymager.sourceforge.io

For ethical hackers and forensic investigators

Memory Forensics:

6. Volatility - Memory forensics framework to analyze volatile memory dumps and artifacts https://www.volatilityfoundation.org/

29. Volatility Framework - Advanced memory forensics framework with plugins and APIs https://www.volatilityfoundation.org/

60. Live View - Volatile memory analysis tool for Windows systems http://liveview.sourceforge.net/

68. Rekall - Advanced forensic memory analysis framework powered by Python http://www.rekall-forensic.com/

<u>75. VolDiff</u> - Compares memory images and highlights differences for analysis https://github.com/aim4r/VolDiff

87. Memoryze - Memory acquisition and analysis tool for Windows systems https://www.fireeye.com/services/freeware/memoryze.html

Carving Tools:

16. Bulk Extractor - Scans disk images and extract interesting bits of data https://github.com/simsong/bulk extractor

18. Scalpel - File carver which recovers files based on headers and footers http://www.digitalforensicssolutions.com/Scalpel/

50. Scalpel - File carver recovering files based on header/footer signatures http://www.digitalforensicssolutions.com/Scalpel/

- 51. Extundelete Used to recover deleted files from mountable images http://extundelete.sourceforge.net/
- **52. Xplico** Network forensics tool that rebuilds sessions from traffic http://www.xplico.org/
- **53. Foremost** File carving utility to recover files using header/footer definitions http://foremost.sourceforge.net

55. Autopsy Tools - Plugins and tools used alongside Autopsy forensics GUI https://www.autopsy.com/extend-autopsy/

57. Dislocker - Decrypts Bitlocker encrypted volumes with mounted filesystem https://github.com/Aorimn/dislocker

58. Bulk Extractor - Extract forensically interesting information from disk images https://github.com/simsong/bulk_extractor

77. hfind - Carves unallocated space and extracts hidden/deleted data into files https://www.mcafee.com/enterprise/en-us/downloads/free-tools/hfind.html

Network Monitoring:

- **7. Wireshark** Network protocol analyzer useful for network forensics and traffic analysis https://www.wireshark.org
- **14. NetworkMiner** Open source network forensic analyzer useful for investigating traffic http://www.netresec.com/?page=NetworkMiner
- 34. Snort Open source intrusion detection and network monitoring system https://www.snort.org
- 35. Tcpdump Capture and analyze network traffic on Unix-like systems https://www.tcpdump.org
- **36. Ngrep** Search within network traffic payloads like grep for text streams http://ngrep.sourceforge.net/
- **38. Wireshark** Network traffic analyzer useful for network forensics https://www.wireshark.org
- 54. Hunchback High speed packet capture and transmission tool https://hunchback.sourceforge.net/
- **73. AIL** Network and host monitoring system for identification of intrusions https://www.cert.org/incident-management/products-services/ail.cfm

For ethical hackers and forensic investigators

Windows Artifact Analysis:

15. RegRipper - Tool to parse Windows registry files and dig for useful data https://github.com/keydet89/RegRipper3.0

25. Fibratus - Tool to explore and trace Windows kernel activity and data

https://www.jpcert.or.jp/english/pub/sr/ir research.html

61. LRR - Tool for viewing Windows artifacts including LNK files

https://github.com/EricZimmerman/LinkRunner

62. NTFS-3G - Open source cross-platform NTFS driver with write support

https://www.tuxera.com/community/open-source-ntfs-3g/

63. WindowsSCOPE - Registry analysis tool for dumped SYSTEM/SAM/SECURITY hives

http://www.windowsscope.com/

65. Amcache Parser - Recovers data from Windows 10 Amcache.hve artifact file https://tzworks.net/prototype_page.php?proto_id=11

66. The Hive - Web interface offering querying capabilities for hive files https://thehive-project.org

74. Rifiuti2 - Analyzes Windows Recycle Bin INFO2 files and recovers filenames

https://github.com/abelcheung/rifiuti2

76. WinAudit - Scans Windows systems and reports changes from baseline http://www.winaudit.com/

83. USBDeview - Handy Windows tool listing all USB devices ever connected

https://www.nirsoft.net/utils/usb_devices_view.html

85. DC3-MWCP - Collection of tools for forensic enterprise analysis from DC3 https://www.dc3.mil/software-catalog/

88. EVTExtract - Automated parsing modules for Windows event log records https://evtxtract.readthedocs.io/en/latest/

Hex Editors:

19. HxD - Hex editor useful for analyzing raw disk and memory dumps https://mh-nexus.de/en/hxd/

44. WinHex - Hex editor, particularly helpful for low-level analyzing raw data https://www.x-

ways.net/winhex/

Data Extraction Tools:

- <u>8. Cellebrite UFED Commercial mobile forensic</u> software to extract data from phones and tablets https://www.cellebrite.com/en/ufed-ultimate/
- 9. Email Collector Tool to collect and analyze email data during investigations

https://www.accessdata.com/products-services/e-discovery/email-examination/ftk-email-collector

11. Magnet AXIOM - Commercial digital investigations platform from Magnet Forensics

https://www.magnetforensics.com/products/magnet-axiom/

- **12. Oxygen Detective** Cloud extraction tool for investigations involving cloud services https://www.oxygen-forensic.com/en/oxygen-detective
- **13. OSForensics** Specialized forensics tools for Microsoft systems from PassMark https://www.osforensics.com/
- **23. Axiom Cyber** Commercial digital forensics and incident response platform https://axiomcyber.com/axiom-cyber/
- **24. Belkasoft Evidence** Commercial all-in-one forensics solution for Windows, mobile etc https://belkasoft.com/evidence
- **31. Plaso (log2timeline)** Extract timestamps from various logs and aggregate timeline https://plaso.readthedocs.io/en/latest/sources/user/log2timeline.html
- **33. Redline** Host investigations and malware analysis tool by FireEye

https://www.fireeye.com/services/freeware/redline.html

37. dcfldd - Disk cloning and forensics tool, version of dd with hashing https://dcfldd.sourceforge.net/

For ethical hackers and forensic investigators

Data Extraction Tools (continued):

40. Paladin - USB image mounted as virtual drive with write-protection https://sumuri.com/software/paladin/

56. OSForensics Imager - Hardware write block tool for connecting devices

https://www.osforensics.com/tools/write-blockers.html

64. Volafax - Forensic system suited for investigations over remote areas https://github.com/jipegit/FlaxVolafox

67. GRR Rapid Response - Incident response framework focused on remote live forensics https://github.com/google/grr

69. DFF - Open source digital forensics framework and platform written in Python https://github.com/arxsys/dff

70. SSDeep - Fuzzy hashing tool used for malware clustering and piecewise comparisons https://ssdeep-project.github.io/ssdeep/index.html

71. KAPE - Target acquisition tool focused on enterprise lines of business https://www.krollartifactparser.com/

79. Checkm8 - Jailbreaking tool extracting data from passcode locked iOS devices https://checkm8.info/ **80. Olefile** - Python package for parsing OLE and Office documents https://github.com/decalage2/olefile

84. Autopsy - iPhone - Autopsy module adds iOS analysis functionality

https://sleuthkit.org/autopsy/plugins.php

Data Recovery Tools:

20. TestDisk - Data recovery tool, useful when file systems get corrupted https://www.cgsecurity.org/wiki/TestDisk

21. PhotoRec - Recovery tool specifically focused on photos and media files https://www.cgsecurity.org/wiki/PhotoRec

Specialized Tools:

- 17. Ghiro Web site screenshots and analysis for forensic investigations http://www.getghiro.org/
- 81. Pyew Python tool for malware analysis static and dynamic https://github.com/joxeankoret/pyew
- 82. E01 Examiner Software utility for mounting EnCase evidence file formats https://e01examiner.com/
- **86. X-Ways Imager** Disc imaging tool to create forensic images, integrated into X-Ways Forensics http://www.x-ways.net/imager/index-m.html
- **89. Speedit** Detection and analysis of spyware, keyloggers, trojans etchttps://www.komodia.com/speedit-sdk
- **90. SniffPass** Sniffs passwords and other sensitive information from a network http://www.komodia.com/sniffpass

OSINT Tools:

- 91. Nmap Network scanning and host discovery tool helpful for reconnaissance https://nmap.org/
- **92. OSINT Framework** Gathering publicly available online data regarding targets https://osintframework.com/
- 93. Recon-ng Web based open source reconnaissance framework https://github.com/lanmaster53/recon-ng
- **94. OSINT-SPY** Performs extensive reconnaissance using 300+ OSINT data sources https://github.com/SharadKumar97/OSINT-SPY
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- 96. Maltego Link analysis and data mining for gathering information https://www.maltego.com/
- 97. SpiderFoot OSINT automation tool gathering threat intelligence data https://www.spiderfoot.net/
- 98. Metagoofil Extract metadata of public documents from a target website

https://github.com/laramies/metagoofil

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OSINT Tools (continued):

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- 95. Shodan Search engine for Internet connected devices https://www.shodan.io
- **96. Maltego** Link analysis and data mining for gathering information https://www.maltego.com/
- 97. SpiderFoot OSINT automation tool gathering threat intelligence data https://www.spiderfoot.net/
- **98. Metagoofil** Extract metadata of public documents from a target website https://github.com/laramies/metagoofil
- **99. TheHarvester** Gather emails, names, URLs from different public sources https://github.com/laramies/theHarvester
- **100. Creepy** Geolocation OSINT tool to extract target location information from social media profiles https://www.geocreepy.com/















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