

# APT32, SeaLotus, OceanLotus, APT-C-00, Canvas Cyclone, BISMUTH, Group G0050

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Enterprise [T1087](#) [.001 Account Discovery: Local Account](#)

[APT32](#) enumerated administrative users using the commands `net localgroup administrators`.<sup>[8]</sup>

Enterprise [T1583](#) [.001 Acquire Infrastructure: Domains](#)

[APT32](#) has set up and operated websites to gather information and deliver malware.<sup>[9]</sup>

[.006 Acquire Infrastructure: Web Services](#)

[APT32](#) has set up Dropbox, Amazon S3, and Google Drive to host malicious downloads.<sup>[9]</sup>

Enterprise [T1071](#) [.001 Application Layer Protocol: Web Protocols](#)

[APT32](#) has used JavaScript that communicates over HTTP or HTTPS to attacker controlled domains to download additional frameworks. The group has also used downloaded encrypted payloads over HTTP.<sup>[2][8]</sup>

[.003 Application Layer Protocol: Mail Protocols](#)

[APT32](#) has used email for C2 via an Office macro.<sup>[4][8]</sup>

Enterprise [T1560](#) [Archive Collected Data](#)

[APT32](#)'s backdoor has used LZMA compression and RC4 encryption before exfiltration.<sup>[5]</sup>

Enterprise [T1547](#) [.001 Boot or Logon Autostart Execution: Registry Run Keys / Startup Folder](#)

[APT32](#) established persistence using Registry Run keys, both to execute PowerShell and VBS scripts as well as to execute their backdoor directly.<sup>[4][8][5]</sup>

Enterprise [T1059](#) [Command and Scripting Interpreter](#)

[APT32](#) has used COM scriptlets to download Cobalt Strike beacons.<sup>[8]</sup>

[.001 PowerShell](#)

[APT32](#) has used PowerShell-based tools, PowerShell one-liners, and shellcode loaders for execution.<sup>[1][4][8]</sup>

[.003 Windows Command Shell](#)

[APT32](#) has used cmd.exe for execution.<sup>[8]</sup>

### [.005 Visual Basic](#)

[APT32](#) has used macros, COM scriptlets, and VBS scripts. <sup>[4][8]</sup>

### [.007 JavaScript](#)

[APT32](#) has used JavaScript for drive-by downloads and C2 communications. <sup>[8][9]</sup>

Enterprise [T1543 .003 Create or Modify System Process: Windows Service](#)

[APT32](#) modified Windows Services to ensure PowerShell scripts were loaded on the system. [APT32](#) also creates a Windows service to establish persistence. <sup>[3][8][5]</sup>

Enterprise [T1189 Drive-by Compromise](#)

[APT32](#) has infected victims by tricking them into visiting compromised watering hole websites. <sup>[3][9]</sup>

Enterprise [T1585 .001 Establish Accounts: Social Media Accounts](#)

[APT32](#) has set up Facebook pages in tandem with fake websites. <sup>[9]</sup>

Enterprise [T1048 .003 Exfiltration Over Alternative Protocol: Exfiltration Over Unencrypted Non-C2 Protocol](#)

[APT32](#)'s backdoor can exfiltrate data by encoding it in the subdomain field of DNS packets. <sup>[5]</sup>

Enterprise [T1041 Exfiltration Over C2 Channel](#)

[APT32](#)'s backdoor has exfiltrated data using the already opened channel with its C&C server. <sup>[5]</sup>

Enterprise [T1203 Exploitation for Client Execution](#)

[APT32](#) has used RTF document that includes an exploit to execute malicious code. (CVE-2017-11882) <sup>[5]</sup>

Enterprise [T1068 Exploitation for Privilege Escalation](#)

[APT32](#) has used CVE-2016-7255 to escalate privileges. <sup>[1]</sup>

Enterprise [T1083 File and Directory Discovery](#)

[APT32](#)'s backdoor possesses the capability to list files and directories on a machine. <sup>[5]</sup>

Enterprise [T1222 .002 File and Directory Permissions Modification: Linux and Mac File and Directory Permissions Modification](#)

[APT32](#)'s macOS backdoor changes the permission of the file it wants to execute to 755. <sup>[10]</sup>

Enterprise [T1589 Gather Victim Identity Information](#)

[APT32](#) has conducted targeted surveillance against activists and bloggers. <sup>[6]</sup>

### [.002 Email Addresses](#)

[APT32](#) has collected e-mail addresses for activists and bloggers in order to target them with spyware. [\[6\]](#)

Enterprise [T1564 .001 Hide Artifacts: Hidden Files and Directories](#)

[APT32](#)'s macOS backdoor hides the clientID file via a chflags function. [\[10\]](#)

### [.003 Hide Artifacts: Hidden Window](#)

[APT32](#) has used the WindowStyle parameter to conceal [PowerShell](#) windows. [\[1\]](#) [\[8\]](#)

### [.004 Hide Artifacts: NTFS File Attributes](#)

[APT32](#) used NTFS alternate data streams to hide their payloads. [\[8\]](#)

Enterprise [T1574 .001 Hijack Execution Flow: DLL](#)

[APT32](#) ran legitimately-signed executables from Symantec and McAfee which load a malicious DLL. The group also side-loads its backdoor by dropping a library and a legitimate, signed executable (AcroTranscoder). [\[4\]](#)[\[8\]](#)[\[5\]](#)

Enterprise [T1070 .001 Indicator Removal: Clear Windows Event Logs](#)

[APT32](#) has cleared select event log entries. [\[1\]](#)

### [.004 Indicator Removal: File Deletion](#)

[APT32](#)'s macOS backdoor can receive a "delete" command. [\[10\]](#)

### [.006 Indicator Removal: Timestomp](#)

[APT32](#) has used scheduled task raw XML with a backdated timestamp of June 2, 2016. The group has also set the creation time of the files dropped by the second stage of the exploit to match the creation time of kernel32.dll. Additionally, [APT32](#) has used a random value to modify the timestamp of the file storing the clientID. [\[1\]](#)[\[5\]](#)[\[10\]](#)

Enterprise [T1105 Ingress Tool Transfer](#)

[APT32](#) has added JavaScript to victim websites to download additional frameworks that profile and compromise website visitors. [\[2\]](#)

Enterprise [T1056 .001 Input Capture: Keylogging](#)

[APT32](#) has abused the PasswordChangeNotify to monitor for and capture account password changes. [\[8\]](#)

Enterprise [T1570 Lateral Tool Transfer](#)

[APT32](#) has deployed tools after moving laterally using administrative accounts. [\[8\]](#)

Enterprise [T1036 Masquerading](#)

[APT32](#) has disguised a Cobalt Strike beacon as a Flash Installer. <sup>[8]</sup>

#### [.003 Rename Legitimate Utilities](#)

[APT32](#) has moved and renamed pubprn.vbs to a .txt file to avoid detection. <sup>[11]</sup>

#### [.004 Masquerade Task or Service](#)

[APT32](#) has used hidden or non-printing characters to help masquerade service names, such as appending a Unicode no-break space character to a legitimate service name. [APT32](#) has also impersonated the legitimate Flash installer file name "install\_flashplayer.exe". <sup>[1]</sup>

#### [.005 Match Legitimate Resource Name or Location](#)

[APT32](#) has renamed a NetCat binary to kb-10233.exe to masquerade as a Windows update. [APT32](#) has also renamed a Cobalt Strike beacon payload to install\_flashplayers.exe. <sup>[8][9]</sup>

Enterprise [T1112 Modify Registry](#).

[APT32](#)'s backdoor has modified the Windows Registry to store the backdoor's configuration. <sup>[5]</sup>

Enterprise [T1046 Network Service Discovery](#).

[APT32](#) performed network scanning on the network to search for open ports, services, OS finger-printing, and other vulnerabilities. <sup>[8]</sup>

Enterprise [T1135 Network Share Discovery](#).

[APT32](#) used the `net view` command to show all shares available, including the administrative shares such as `C$` and `ADMIN$`. <sup>[8]</sup>

Enterprise [T1571 Non-Standard Port](#)

An [APT32](#) backdoor can use HTTP over a non-standard TCP port (e.g 14146) which is specified in the backdoor configuration. <sup>[5]</sup>

Enterprise [T1027 .010 Obfuscated Files or Information: Command Obfuscation](#)

[APT32](#) has used the `Invoke-Obfuscation` framework to obfuscate their PowerShell. <sup>[1][12][8]</sup>

#### [.011 Obfuscated Files or Information: Fileless Storage](#)

[APT32](#)'s backdoor has stored its configuration in a registry key. <sup>[5]</sup>

#### [.013 Obfuscated Files or Information: Encrypted/Encoded File](#)

[APT32](#) has performed code obfuscation, including encoding payloads using Base64 and using a framework called "Dont-Kill-My-Cat (DKMC)". [APT32](#) also encrypts the library used for network exfiltration with AES-256 in CBC

mode in their macOS backdoor. [\[1\]\[12\]\[3\]\[4\]\[8\]\[5\]\[10\]](#)

#### [.016 Obfuscated Files or Information: Junk Code Insertion](#)

[APT32](#) includes garbage code to mislead anti-malware software and researchers. [\[3\]\[5\]](#)

Enterprise [T1588 .002 Obtain Capabilities: Tool](#)

[APT32](#) has obtained and used tools such as [Mimikatz](#) and [Cobalt Strike](#), and a variety of other open-source tools from GitHub. [\[1\]\[4\]](#)

Enterprise [T1137 Office Application Startup](#)

[APT32](#) have replaced Microsoft Outlook's VbaProject.OTM file to install a backdoor macro for persistence. [\[4\]\[8\]](#)

Enterprise [T1003 OS Credential Dumping](#)

[APT32](#) used GetPassword\_x64 to harvest credentials. [\[4\]\[8\]](#)

#### [.001 LSASS Memory](#)

[APT32](#) used Mimikatz and customized versions of Windows Credential Dumper to harvest credentials. [\[4\]\[8\]](#)

Enterprise [T1566 .001 Phishing: Spearphishing Attachment](#)

[APT32](#) has sent spearphishing emails with a malicious executable disguised as a document or spreadsheet. [\[3\]\[4\]\[8\]\[5\]\[13\]\[6\]](#)

#### [.002 Phishing: Spearphishing Link](#)

[APT32](#) has sent spearphishing emails containing malicious links. [\[3\]\[4\]\[13\]\[9\]\[6\]](#)

Enterprise [T1598 .003 Phishing for Information: Spearphishing Link](#)

[APT32](#) has used malicious links to direct users to web pages designed to harvest credentials. [\[9\]](#)

Enterprise [T1055 Process Injection](#)

[APT32](#) malware has injected a Cobalt Strike beacon into Rundll32.exe. [\[8\]](#)

Enterprise [T1012 Query Registry](#)

[APT32](#)'s backdoor can query the Windows Registry to gather system information. [\[5\]](#)

Enterprise [T1021 .002 Remote Services: SMB/Windows Admin Shares](#)

[APT32](#) used [Net](#) to use Windows' hidden network shares to copy their tools to remote machines for execution. [\[8\]](#)

Enterprise [T1018 Remote System Discovery](#)

[APT32](#) has enumerated DC servers using the command `net group "Domain Controllers" /domain`. The group has also used the `ping` command.<sup>[8]</sup>

Enterprise [T1053 .005 Scheduled Task/Job: Scheduled Task](#)

[APT32](#) has used scheduled tasks to persist on victim systems.<sup>[1][4][8][5]</sup>

Enterprise [T1505 .003 Server Software Component: Web Shell](#)

[APT32](#) has used Web shells to maintain access to victim websites.<sup>[2]</sup>

Enterprise [T1072 Software Deployment Tools](#)

[APT32](#) compromised McAfee ePO to move laterally by distributing malware as a software deployment task.<sup>[1]</sup>

Enterprise [T1608 .001 Stage Capabilities: Upload Malware](#)

[APT32](#) has hosted malicious payloads in Dropbox, Amazon S3, and Google Drive for use during targeting.<sup>[9]</sup>

[.004 Stage Capabilities: Drive-by Target](#)

[APT32](#) has stood up websites containing numerous articles and content scraped from the Internet to make them appear legitimate, but some of these pages include malicious JavaScript to profile the potential victim or infect them via a fake software update.<sup>[9]</sup>

Enterprise [T1218 .005 System Binary Proxy Execution: Mshta](#)

[APT32](#) has used mshta.exe for code execution.<sup>[4][8]</sup>

[.010 System Binary Proxy Execution: Regsvr32](#)

[APT32](#) created a [Scheduled Task/Job](#) that used regsvr32.exe to execute a COM scriptlet that dynamically downloaded a backdoor and injected it into memory. The group has also used regsvr32 to run their backdoor.<sup>[5][1][8]</sup>

[.011 System Binary Proxy Execution: Rundll32](#)

[APT32](#) malware has used rundll32.exe to execute an initial infection process.<sup>[8]</sup>

Enterprise [T1082 System Information Discovery](#)

[APT32](#) has collected the OS version and computer name from victims. One of the group's backdoors can also query the Windows Registry to gather system information, and another macOS backdoor performs a fingerprint of the machine on its first connection to the C&C server. [APT32](#) executed shellcode to identify the name of the infected host.<sup>[3][5][10][13]</sup>

Enterprise [T1016 System Network Configuration Discovery](#)

[APT32](#) used the `ipconfig /all` command to gather the IP address from the system.<sup>[8]</sup>

Enterprise [T1049 System Network Connections Discovery](#)

[APT32](#) used the `netstat -anpo tcp` command to display TCP connections on the victim's machine.<sup>[8]</sup>

Enterprise [T1033 System Owner/User Discovery](#)

[APT32](#) collected the victim's username and executed the `whoami` command on the victim's machine. [APT32](#) executed shellcode to collect the username on the victim's machine. <sup>[13][3][8]</sup>

Enterprise [T1216 .001 System Script Proxy Execution: PubPrn](#)

[APT32](#) has used PubPrn.vbs within execution scripts to execute malware, possibly bypassing defenses.<sup>[14]</sup>

Enterprise [T1569 .002 System Services: Service Execution](#)

[APT32](#)'s backdoor has used Windows services as a way to execute its malicious payload. <sup>[5]</sup>

Enterprise [T1552 .002 Unsecured Credentials: Credentials in Registry](#)

[APT32](#) used Outlook Credential Dumper to harvest credentials stored in Windows registry.<sup>[4][8]</sup>

Enterprise [T1550 .002 Use Alternate Authentication Material: Pass the Hash](#)

[APT32](#) has used pass the hash for lateral movement.<sup>[8]</sup>

[.003 Use Alternate Authentication Material: Pass the Ticket](#)

[APT32](#) successfully gained remote access by using pass the ticket.<sup>[8]</sup>

Enterprise [T1204 .001 User Execution: Malicious Link](#)

[APT32](#) has lured targets to download a Cobalt Strike beacon by including a malicious link within spearphishing emails.<sup>[8][9][6]</sup>

[.002 User Execution: Malicious File](#)

[APT32](#) has attempted to lure users to execute a malicious dropper delivered via a spearphishing attachment.<sup>[3][4][5][13][6]</sup>

Enterprise [T1078 .003 Valid Accounts: Local Accounts](#)

[APT32](#) has used legitimate local admin account credentials.<sup>[1]</sup>

Enterprise [T1102 Web Service](#)

[APT32](#) has used Dropbox, Amazon S3, and Google Drive to host malicious downloads.<sup>[9]</sup>

Enterprise [T1047 Windows Management Instrumentation](#)

[APT32](#) used WMI to deploy their tools on remote machines and to gather information about the Outlook process.  
[\[8\]](#)

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Source: <https://attack.mitre.org/groups/G0050/>