

## Mandiant APT1 samples categorized by malware families

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APT 1 resources

Threat Actor aliases:

Comment Crew, Comment Panda, PLA Unit 61398, TG-8223, APT 1, BrownFox, Group 3, GIF89a, ShadyRAT, Shanghai Group, Byzantine Candor

<http://apt.threattracking.com>

- [2010\\_11\\_Fireeye\\_VinSelf - A new backdoor in town! « VinSelf - A new backdoor in town! FireEye Inc.pdf](#)
- [2010\\_12\\_Guardian\\_WikiLeaks cables reveal fears over Chinese cyber warfare US news - The Guardian.pdf](#)
- [2011\\_08\\_Ira Winkler\\_Shady Rat Case Shows Vendors As Big a Problem As APT Itself - CIO.pdf](#)
- [2011\\_08\\_Kaspersky's Thoughts on Operation Shady Rat - Nota Bene Eugene Kaspersky's Official Blog.pdf](#)
- [2011\\_10\\_SANS\\_detailed-analysis-advanced-persistent-threat-malware-33814.pdf](#)
- [2011\\_Mcafee-operation-shady-rat1.pdf](#)
- [2012\\_06\\_Bloomberg\\_Hackers Linked to China's Army Seen From EU to D.C. - Bloomberg.pdf](#)
- [2013\\_02\\_NYTimes\\_China's Army Is Seen as Tied to Hacking Against U.S.pdf](#)
- [2013\\_03\\_Fireeye\\_TABMSGSQL and 44 WEBC2-YAHOO The Dingo and the Baby « The Dingo and the Baby FireEye Inc.pdf](#)
- [2013\\_05\\_Fireeye\\_APT1 Three Months Later.pdf](#)
- [2013\\_05\\_Mandiant-APT1 Exposing One of China's Cyber Espionage Units.pdf](#)
- [2014\\_05\\_Fireeye\\_The PLA and the 8\\_00am-5\\_00pm Work Day FireEye Confirms DOJ's Findings on APT1 Intrusion Activity « The PLA and the 8\\_00am-5\\_00pm Work Day FireEye Confirms DOJ's Findings on APT1 Intrusion Activity - FireEye Inc.pdf](#)
- [2014\\_06\\_Crowdstrike\\_Hat-tribution to PLA Unit 61486 ».pdf](#)
- [2014\\_12\\_Vinself now with steganography - Airbus CyberSecurity.pdf](#)
- [2016\\_BANGAT\\_malware-signatures\\_bangat\\_yara\\_at\\_master · citizenlab\\_malware-signatures.pdf](#)
- [GIF89a\\_Vinselfdecoder\\_malwaretracker.com\\_Command and Control Decoder - Vinself Trojan.pdf](#)
- [PLA Unit 61398\\_Council on Foreign Relations Interactives.pdf](#)



These are the samples described in the Mandiant Report APT1, in the Indicators of Compromise (IOCs). Each file is named according to the malware family, so you can run your own detection and signature tools to see how your naming convention corresponds to the one used by Mandiant.

You can use these binaries to develop signatures, compare to your samples, or study the behavior and evolution of APT1.

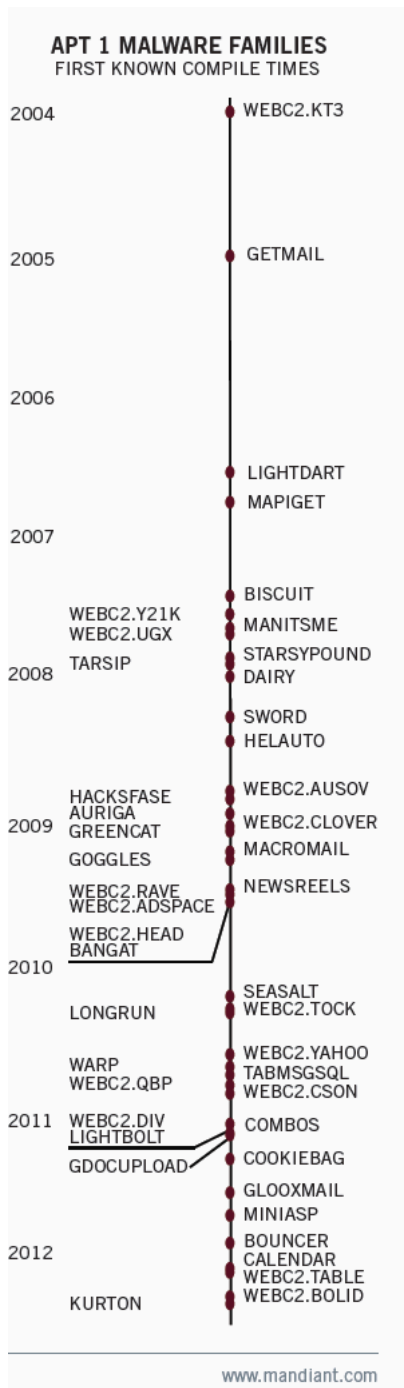
I added Contagio samples in several families as well.

The list of binaries and their names, as well as malware families descriptions are provided below for your convenience.

### Download

### Sample list and information

Below descriptions are from Mandiant IOC [http://intelreport.mandiant.com/Mandiant\\_APT1\\_Report\\_Appendix.zip](http://intelreport.mandiant.com/Mandiant_APT1_Report_Appendix.zip)



### 1. AURIGA

The AURIGA malware family shares a large amount of functionality with the BANGAT backdoor. The malware family contains functionality for keystroke logging, creating and killing processes, performing file system and registry modifications, spawning interactive command shells, performing process injection, logging off the current user or shutting down the local machine. The AURIGA malware contains a driver component which is used to inject the malware DLL into other processes. This driver can also perform process and IP connection hiding. The malware family will create a copy of cmd.exe to perform its C2 activity, and replace the "Microsoft corp" strings in the cmd.exe binary with different values. The malware family typically maintains persistence through installing itself as a service.

```
AURIGA_sample_6B31344B40E2AF9C9EE3BA707558C14E
AURIGA_sample_CD3A09EE99CFF9A58EFEA5CCBE2BED
```

### 2. BANGAT

The BANGAT malware family shares a large amount of functionality with the AURIGA backdoor. The malware family contains functionality for keylogging, creating and killing processes, performing filesystem and registry modifications, spawning interactive command shells, performing process injection, logging off the current user or shutting down the local

machine. In addition, the malware also implements a custom VNC like protocol which sends screenshots of the desktop to the C2 server and accepts keyboard and mouse input. The malware communicates to its C2 servers using SSL, with self signed SSL certificates. The malware family will create a copy of cmd.exe to perform its C2 activity, and replace the "Microsoft corp" strings in the cmd.exe binary with different values. The malware family typically maintains persistence through installing itself as a service.

```
BANGAT_sample_4C6BDDCCA2695D620DF38708E14FC7E
BANGAT_sample_8E8622C393D7E832D39E620EAD5D3B49
BANGAT_sample_468FF2C12CF7E5B2FE0EE6BB3B239E
BANGAT_sample_727A6800991EEAD454E53E8AF164A99C
BANGAT_sample_BD8B082B7711BC980252F988BB0CA936
BANGAT_sample_DB05DF0498B59B42A8E493CF3C10C578
BANGAT_sample_E1B6940985A23E5639450F8391820655
BANGAT_sample_EF8E0FB20E7228C7492CCDC59D87C690
```

#### **Contagio samples for Bangat**

##### **Circa 2009-2010**

```
995B44EF8460836D9091A8B361FDE489_rasauto32.dll
F10D145684BA6C71CA2D2F7EB0D89343_rasauto32.dll
43CE605B2584C27064FEBB0474A787A4_irmon32.dll
1966B265272E1660E6F340B19A7E5567_irmon32.dll
423A30C077B12354AA5C31D4DE99689_irmon32.dll
80CA8B948409138BE40FFBC5D6D95EF1_rasauto16.dll
15138604260B1D27F92BF1EC6468B326_rasauto16.dll
616B0F00DE54D7501CEEE18823F72103_rasauto16.dll
C75D351D86DE26718A3881F62FDDDE99_irmon32.dll
E66DD357A6DFA6EBD15358E565E8F00F_irmon32.dll
0F77AF7FA673F5B3D36B926576002A1C_winhlp32.exe
```

### **3. BISCUIT**

BISCUIT provides attackers with full access to an infected host. BISCUIT capabilities include launching an interactive command shell, enumerating servers on a Windows network, enumerating and manipulating process, and transferring files. BISCUIT communicates using a custom protocol, which is then encrypted using SSL. Once installed BISCUIT will attempt to beacon to its command/control servers approximately every 10 or 30 minutes. It will beacon its primary server first, followed by a secondary server. All communication is encrypted with SSL (OpenSSL 0.9.8i).

```
BISCUIT_sample_5A728CB9CE56763DCCB32B5298D0F050
BISCUIT_sample_5D8129BE965FAB8115ECA34FC84BD7F0
BISCUIT_sample_7CB055AC3ACBF53E07E20B65EC9126A1
BISCUIT_sample_12F25CE81596AEB19E75CC7EF08F3A38
BISCUIT_sample_43B844C35E1A933E9214588BE81CE772
BISCUIT_sample_70A55FDC712C6E31E013E6B5D412B0D6
BISCUIT_sample_268EEF019BF65B2987E945AFAF29643F
BISCUIT_sample_15901DDBCC5E9E0579FC5B42F754FE8
BISCUIT_sample_034374DB2D35CF9DA6558F54CEC8A455
BISCUIT_sample_DA383CC098A5EA8FBB87643611E4BFB6
```

#### **Contagio samples for**

```
03B3CCEB253FD782590CF0EFAFD49D5F_AcroRD32.exe
8AA320A3D34CF89EF63BF801DD497490_qmqrproxy.dll
```

### **4. BOUNCER**

BOUNCER will load an extracted DLL into memory, and then will call the DLL's dump export. The dump export is called with the parameters passed via the command line to the BOUNCER executable. It requires at least two arguments, the IP and port to send the password dump information. It can accept at most five arguments, including a proxy IP, port and an x.509 key for SSL authentication. The DLL backdoor has the capability to execute arbitrary commands, collect database and server information, brute force SQL login credentials, launch arbitrary programs, create processes and threads, delete files, and redirect network traffic.

```
BOUNCER_sample_6EBD05A02459D3B22A9D4A79B8626BF1
BOUNCER_sample_57353ECBAECE29ECAAF8025231EB930E3
BOUNCER_sample_CF038194F0FE222F31EC24CB80941BB1
BOUNCER_sample_D2F1BE7E10ED39AA8BC0F7F671D824D2
BOUNCER_sample_F90DA15F862BB8452FC51D3F0DBB3373
```

## 5. CALENDAR

This family of malware uses Google Calendar to retrieve commands and send results. It retrieves event feeds associated with Google Calendar, where each event contains commands from the attacker for the malware to perform. Results are posted back to the event feed. The malware authenticates with Google using the hard coded email address and passwords. The malware uses the deprecated ClientLogin authentication API from Google. The malware is registered as a service dll as a persistence mechanism. Artifacts of this may be found in the registry.

```
GCAL_sample_72d4be67abeaa6ab3827784317b1b7e9
```

## 6. COMBOS

The COMBOS malware family is an HTTP based backdoor. The backdoor is capable of file upload, file download, spawning a interactive reverse shell, and terminating its own process. The backdoor may decrypt stored Internet Explorer credentials from the local system and transmit the credentials to the C2 server. The COMBOS malware family does not have any persistence mechanisms built into itself.

```
COMBOS_sample_1E3719BBF854417384A3768E4326584BCOMBOS_sample_
EC1E62EF73D844C6C845ACDD4C1F9CE7
COMBOS_sample_FA14D823A5D1854131DB0DC9EEF27022
```

his family of malware is a backdoor capable of file upload and download as well as providing remote interactive shell access to the compromised machine.

Communication with the Command & Control (C2) servers uses a combination of single-byte XOR and Base64 encoded data in the Cookie and Set-Cookie HTTP header fields. Communication with the C2 servers is over port 80. Some variants install a registry key as means of a persistence mechanism. The hardcoded strings cited include a string of a command in common with several other APT1 families.

```
COOKIEBAG_sample_0C28AD34F90950BC784339EC9F50D288
COOKIEBAG_sample_321D75C9990408DB812E5A248A74F8C8
COOKIEBAG_sample_543E03CC5872E9ED870B2D64363F518B
COOKIEBAG_sample_989B797C2A63FBFC8E1C6E8A8CCD6204
COOKIEBAG_sample_57326CD78A56D26E349BBD4BCC5B9FA2
COOKIEBAG_sample_DB2580F5675F04716481B24BB7AF468E
COOKIEBAG_sample_F3611C5C793F521F7FF2A69C22D4174E
```

## 7 DAIRY

Members of this malware family are backdoors that provide file downloading, process listing, process killing, and reverse shell capabilities. This malware may also add itself to the Authorized Applications list for the Windows Firewall.

```
DAIRY_sample_995442F722CC037885335340FC297EA0
```

## 8. GETMAIL

Members of this family of malware are utilities designed to extract email messages and attachments from Outlook PST files. One part of this utility set is an executable, one is a dll. The malware may create a registry artifact related to the executable.

```
GETMAIL_sample_909BEF6DB8D33854E983EBCDD71419F
GETMAIL_sample_E81DB0198D2A63C4CCFC33F58FCB821E
GETMAIL_sample_E212AAF642D73A2E4A885F12EEA86C58
```

## 9. GDOCUPLOAD

This family of malware is a utility designed to upload files to Google Docs. Nearly all communications are with docs.google.com are SSL encrypted. The malware does not use Google's published API to interact with their services. The malware does not currently work with Google Docs. It does not detect HTTP 302 redirections and will get caught in an infinite loop attempting to parse results from Google that are not present.

```
GDOCUPLOAD-sample_232d1be2d8cbbd1cf57494a934628504
```

## 10 GLOOXMAIL - aka TROJAN.GTALK <http://www.cyberengineeringservices.com/trojan-gtalk/>

GLOOXMAIL communicates with Google's Jabber/XMPP servers and authenticates with a hard-coded username and password. The malware can accept commands over XMPP that includes file upload and download, provide a remote shell, sending process listings, and terminating specified processes. The malware makes extensive use of the open source gloox

library (<http://camaya.net/gloox/>, version 0.9.12) to communicate using the Jabber/XMPP protocol. All communications with the Google XMPP server are encrypted.

```
GLOOXMAIL_sample_3DE1BD0F2107198931177B2B23877DF4
GLOOXMAIL_sample_15A33F8FE11B94BDD38BFF651F6A5CD1
```

A family of downloader malware, that retrieves an encoded payload from a fixed location, usually in the form of a file with the .jpg extension. Some variants have just an .exe that acts as a downloader, others have an .exe launcher that runs as a service and then loads an associated .dll of the same name that acts as the downloader. This IOC is targeted at the downloaders only. After downloading the file, the malware decodes the downloaded payload into an .exe file and launches it. The malware usually stages the files it uses in the %TEMP% directory or the %WINDIR%\Temp directory.

```
GOGGLES_sample_09D372E4259980AC95FDADF1846578D9
GOGGLES_sample_57F98D16AC439A11012860F88DB21831
GOGGLES_sample_51326BF40DA5A5357A143DD9A6E6A11C
GOGGLES_sample_A5B581C0600815B1112CA2FED578928B
GOGGLES_sample_BCB087F69792B69494A3EDAD51A842BB
GOGGLES_sample_BF80DBF969B73790253F683CD723FD71
GOGGLES_sample_DB50416D9E67F4982E89E0FFB0ADE6F3
```

## 12 GREENCAT

Members of this family are full featured backdoors that communicates with a Web-based Command & Control (C2) server over SSL. Features include interactive shell, gathering system info, uploading and downloading files, and creating and killing processes, Malware in this family usually communicates with a hard-coded domain using SSL on port 443. Some members of this family rely on launchers to establish persistence mechanism for them. Others contains functionality that allows it to install itself, replacing an existing Windows service, and uninstall itself. Several variants use %SystemRoot%\Tasks or %WinDir%\Tasks as working directories, additional malware artifacts may be found there.

```
GREENCAT_sample_0C5E9F564115BFCBEE66377A829DE55F
GREENCAT_sample_1F92FF8711716CA795FBD81C477E45F5
GREENCAT_sample_3E6ED3EE47BCE9946E2541332CB34C69
GREENCAT_sample_3E69945E5865CCC861F69B24BC1166B6
GREENCAT_sample_5AEAA53340A281074FCB539967438E3F
GREENCAT_sample_6D2320AF561B2315C1241E3EFD86067F
GREENCAT_sample_30E78D186B27D2023A2A7319BB679C3F
GREENCAT_sample_36C0D3F109AEDE4D76B05431F8A64F9E
GREENCAT_sample_55FB1409170C91740359D1D96364F17B
GREENCAT_sample_57E79F7DF13C0CB01910D0C688FCD296
GREENCAT_sample_120C2E085992FF59A21BA401EC29FEC9_different
GREENCAT_sample_390D1F2A620912104F53C034C8AEF14B
GREENCAT_sample_871CC547FEB9DBEC0285321068E392B8
GREENCAT_sample_7388D67561D0A7989202AD4D37EFF24F
GREENCAT_sample_A99E06E2F90DB4E506EF1347A8774DD5
GREENCAT_sample_A565682D8A13A5719977223E0D9C7AA4
GREENCAT_sample_AB208F0B517BA9850F1551C9555B5313
GREENCAT_sample_B3BC979D8DE3BE09728C5DE1A0297C4B
GREENCAT_sample_B5E9CE72771217680EFAEECF3DA3F
GREENCAT_sample_B8F61242E28F2EDF6CB1BE8781438491
GREENCAT_sample_BA0C4D3DBF07D407211B5828405A9B91
GREENCAT_sample_C044715C2626AB515F6C85A21C47C7DD
GREENCAT_sample_E54CE5F0112C9FDFE86DB17E85A5E2C5
GREENCAT_sample_E83F60FB0E0396EA309FAF0AED64E53F
GREENCAT_sample_F4ED3B7A8A58453052DB4B5BE3707342
GREENCAT_sample_FAB6B0B33D59F393E142000F128A9652
```

## 13. HACKFASE

This family of malware is a backdoor that provides reverse shell, process creation, system statistics collection, process enumeration, and process termination capabilities.

This family is designed to be a service DLL and does not contain an installation mechanism.

It usually communicates over port 443. Some variants use their own encryption, others use SSL.

```
HACKFASE_sample_0D0240672A314A7547D328F824642DA8
HACKFASE_sample_1A0C7E61BCC50D57B7BCF9D9AF691DE5
HACKFASE_sample_9E860622FEE66074DFE81DCFC40C4E2
```

HACKFASE\_sample\_17199DDAC616938F383A0339F416C890  
HACKFASE\_sample\_BCBDEF1678049378BE04719ED29078D2

#### 14. HELAUTO

This family of malware is designed to operate as a service and provides remote command execution and file transfer capabilities to a fixed IP address or domain name. All communication with the C2 server happens over port 443 using SSL.

This family can be installed as a service DLL. Some variants allow for uninstallation.

HELAUTO\_sample\_47E7F92419EB4B98FF4124C3CA11B738  
HELAUTO\_sample\_DA6B0EE7EC735029D1FF4FA863A71DE8

#### 15. KURTON

This family of malware is a backdoor that tunnels its connection through a preconfigured proxy. The malware communicates with a remote command and control server over HTTPS via the proxy. The malware installs itself as a Windows service with a service name supplied by the attacker but defaults to IPRIP if no service name is provided during install.

No Mandiant samples available.

*These are Contagio samples dated 2009*

57C69FECFECDCB5288687DF2AC96E44F\_iprinp.dll

7C136A9E8D94BF117288D9B5388019D6\_iprinp.dll

82C39E6979022E57B93B719793B39A30\_iprinp.dll

A327B9D97CA479B89297F438F87816A0\_iprinp.dll

A6C1595BD7B1A85C42FBD674460DC35D\_iprinp.dll

#### 15. LIGHTBOLT

LIGHTBOLT is a utility with the ability to perform HTTP GET requests for a list of user-specified URLs. The responses of the HTTP requests are then saved as MHTML files, which are added to encrypted RAR files. LIGHTBOLT has the ability to use software certificates for authentication.

LIGHTBOLT\_sample\_2E86A9862257A0CF723CEEF3868A1A12

#### 16 LIGHTDART

LIGHTDART is a tool used to access a pre-configured web page that hosts an interface to query a database or data set. The tool then downloads the results of a query against that web page to an encrypted RAR file. This RAR file (1.rar) is renamed and uploaded to an attacker controlled FTP server, or uploaded via an HTTP POST with a .jpg extension. The malware will execute this search once a day. The target webpage usually contains information useful to the attacker, which is updated on a regular basis. Examples of targeted information include weather information or ship coordinates.

No samples

#### 17. LONGRUN

LONGRUN is a backdoor designed to communicate with a hard-coded IP address and provide the attackers with a custom interactive shell. It supports file uploads and downloads, and executing arbitrary commands on the compromised machine.

When LONGRUN executes, it first loads configuration data stored as an obfuscated string inside the PE resource section. The distinctive string thequickbrownfxjimpsvalzydg is used as part of the input to the decoding algorithm. When the configuration data string is decoded it is parsed and treated as an IP and port number. The malware then connects to the host and begins interacting with it over a custom protocol.

No samples

#### 18. MANITSME

This family of malware will beacon out at random intervals to the remote attacker. The attacker can run programs, execute arbitrary commands, and easily upload and download files. This IOC looks for both the dropper file and the backdoor.

MANITSME\_sample\_e97ebb5b2050b86999c55797c2348ba7

This malware utility is a set of two files that operate in conjunction to extract email messages and attachments from an Exchange server. In order to operate successfully, these programs require authentication credentials for a user on the Exchange server, and must be run from a machine joined to the domain that has Microsoft Outlook installed (or equivalent software that provides the Microsoft 'Messaging API' (MAPI) service).

```
MAPIGET_sample_C627E595C9EC6DC2199447AEAB59AC03  
MAPIGET_sample_F3C6C797EF80787E6CBEEAA77496A3CB
```

#### **Contagio samples for MAPIGET**

```
09E25BB934D8523FCDD27B86FBF4F8CE_m.exe  
C57902ACE7FF4173AE41F1292EA85E2A_MAPI.exe
```

#### **20. MINIASP**

This family of malware consists of backdoors that attempt to fetch encoded commands over HTTP. The malware is capable of downloading a file, downloading and executing a file, executing arbitrary shell commands, or sleeping a specified interval.

```
MINIASP_77FBFED235D6062212A3E43211A5706E  
MINIASP_81B03CBCFC4B9D090CD8F5E5DA816895  
MINIASP_E476E4A24F8B4FF4C8A0B260AA35FC9F
```

#### **21 NEWSREELS**

The NEWSREELS malware family is an HTTP based backdoor. When first started, NEWSREELS decodes two strings from its resources section. These strings are both used as C2 channels, one URL is used as a beacon URL (transmitting) and the second URL is used to get commands (receiving). The NEWSREELS malware family is capable of performing file uploads, downloads, creating processes or creating an interactive reverse shell.

```
NEWSREELS_sample_02C65973B6018F5D473D701B3E7508B2  
NEWSREELS_sample_2C49F47C98203B110799AB62265F4EF  
NEWSREELS_sample_270D42F292105951EE81E4085EA45054  
NEWSREELS_sample_0496E3B17CF40C45F495188A368C203A  
NEWSREELS_sample_523F56515221161579EE6090C962E5B1  
NEWSREELS_sample_933B11BC4799F8D9F65466FB2E3EA659  
NEWSREELS_sample_A2CD1189860B9BA214421AAB86ECBC8A  
NEWSREELS_sample_A639F598D4C0B9AA7A4691D05F27D977  
NEWSREELS_sample_AF2F7B070245C90BD2A0A0845314173A  
NEWSREELS_sample_B8277CCE81E0A372BC35D33A0C9483C2  
NEWSREELS_sample_BAABD9B76BFF84ED27FD432CFC6DF241  
NEWSREELS_sample_D4C7F1F80883412F9796F1270ACFF50  
NEWSREELS_sample_D271AE0F4E9230AF3B61EAFE7F671FDE  
NEWSREELS_sample_EF6C375E3E6930E2B50E1E97FE6FBCC9
```

#### **22. SEASALT**

The SEASALT malware family communicates via a custom binary protocol. It is capable of gathering some basic system information, file system manipulation, file upload and download, process creation and termination, and spawning an interactive reverse shell. The malware maintains persistence by installing itself as a service.

```
SEASALT_sample_5E0DF5B28A349D46AC8CC7D9E5E61A96  
SEASALT_sample_F0726AADCF5D66DAF528F79BA8507113
```

#### **23. STARSYPOUND**

STARSYPOUND provides an interactive remote shell over an obfuscated communications channel. When it is first run, it loads a string (from the executable PE resource section) containing the beacon IP address and port. The malware sends the beacon string "(SY)# <HOSTNAME>" to the remote system, where <HOSTNAME> is the hostname of the victim system. The remote host responds with a packet that also begins with the string "(SY)# cmd". This causes the malware to launch a new cmd.exe child process. Further communications are forwarded to the cmd.exe child process to execute. The commands sent to the shell and their responses are obfuscated when sent over the network.

```
STARSYPOUND_sample_2BA0D0083976A5C1E3315413CDCFFCD2STARSYPOUND_sample_2DD892986B2249B5214639ECC8AC0223STAR
```

#### **24. SWORD**

This family of malware provides a backdoor over the network to the attackers. It is configured to connect to a single host and offers file download over HTTP, program execution, and arbitrary execution of commands through a cmd.exe instance.

```
SWORD_sample_052F5DA1734464A985DCD669BFF62F93
```

This malware family is a full-featured backdoor capable of file uploading and downloading, arbitrary execution of programs, and providing a remote interactive command shell.

All communications with the C2 server are sent over HTTP to a static URL, appending various URL parameters to the request. Some variants use a slightly different URL.

```
TABMSGSQL_sample_001DD76872D80801692FF942308C64E6
TABMSGSQL_sample_2F930D92DC5EBC9D53AD2A2B451EBF65
TABMSGSQL_sample_3E87051B1DC3463F378C7E1FE398DC7D
TABMSGSQL_sample_8A86DF3D382BFD1E4C4165F4CACDFDF8
TABMSGSQL_sample_052EC04866E4A67F31845D656531830D
TABMSGSQL_sample_002325A0A67FDEDED0381B5648D7FE9B8E
TABMSGSQL_sample_55886D571C2A57984EA9659B57E1C63A
```

#### **Contagio sample for TABMSDSL - LETSGO**

*DC1286AAC46B0EAD7B27F045E5B09EFF Conference Materials.zip (dropper)*

#### **26. TARSIP-ECLIPSE**

The TARSIP malware family is a backdoor which communicates over encoded information in HTTPS headers. Typical TARSIP malware samples will only beacon out to their C2 servers if the C2 DNS address resolves to a specific address. The capability of TARSIP backdoors includes file uploading, file downloading, interactive command shells, process enumeration, process creation, process termination. The TARSIP-ECLIPSE family is distinguished by the presence of 'eclipse' in .pdb debug strings present in the malware samples. It does not provide a built in mechanism to maintain persistence.

```
TARSIP-ECLIPSE_sample_0B506C6DDE8D07F9EEB82FD01A6F97D4
TARSIP-ECLIPSE_sample_4A54D7878D4170C3D4E3C3606365C42C
TARSIP-ECLIPSE_sample_4F763B07A7B8A80F1F9408E590F79532
TARSIP-ECLIPSE_sample_3107DE21E480AB1F2D67725F419B28D0
TARSIP-ECLIPSE_sample_8934AEED5D213FE29E858EEE616A6EC7
TARSIP-ECLIPSE_sample_123505024F9E5FF74CB6AA67D7FCC392
TARSIP-ECLIPSE_sample_CA327BC83FBE38B3689CD1A5505DFC33
```

#### **27. TARSIP-MOON**

The TARSIP malware family is a backdoor which communicates over encoded information in HTTPS headers. Typical TARSIP malware samples will only beacon out to their C2 servers if the C2 DNS address resolves to a specific address. The capability of TARSIP backdoors includes file uploading, file downloading, interactive command shells, process enumeration, process creation, process termination. The TARSIP-MOON family is distinguished by the presence of 'moon' in .pdb debug strings present in the malware samples. It does not provide a built in mechanism to maintain persistence.

```
TARSIP-MOON_sample_2BD02B41817D227058522CCA40ACD390
TARSIP-MOON_sample_95F25D3AFC5370F5D9FD8E65C17D3599
TARSIP-MOON_sample_0908D8B3E459551039BADE50930E4C1B
TARSIP-MOON_sample_6808EC6DBB23F0FA7637C108F44C5C80
TARSIP-MOON_sample_A5D4EBC0285F0213E0C29D23BC410889
TARSIP-MOON_sample_C91EACAB7655870764D13BA741AA9A73
```

#### **28. WARP**

The WARP malware family is an HTTP based backdoor written in C++, and the majority of its code base is borrowed from source code available in the public domain. Network communications are implemented using the same WWW client library (w3c.cpp) available from [www.dankrui.com/file\\_69653F3336383837.html](http://www.dankrui.com/file_69653F3336383837.html). The malware has system survey functionality (collects hostname, current user, system uptime, CPU speed, etc.) taken directly from the BO2K backdoor available from [www.bo2k.com](http://www.bo2k.com). It also contains the hard disk identification code found at [www.winsim.com/diskid32/diskid32.cpp](http://www.winsim.com/diskid32/diskid32.cpp). When the WARP executing remote commands, the malware creates a copy of the '%SYSTEMROOT%\system32\cmd.exe' file as '%USERPROFILE%\Temp\~ISUN32.EXE'. The version signature information of the duplicate executable is zeroed out. Some WARP variants maintain persistence through the use of DLL search order hijacking.

no sample

#### **29 WEBC2-ADSPACE**

A WEBC2 backdoor is designed to retrieve a Web page from a pre-determined C2 server. It expects the Web page to contain special HTML tags; the backdoor will attempt to interpret the data between the tags as commands. This family of malware is capable of downloading and executing a file. All variants represented here are the same file with different MD5 signatures. This malware attempts to contact its C2 once a week (Thursday at 10:00 AM). It looks for commands inside a set of HTML tags, part of which are in the File Strings indicator term below.

WEBC2-ADSPACE\_sample\_AB00B38179851C8AA3F9BC80ED7BAA23

### 30. WEBC2-AUSOV

A WEBC2 backdoor is designed to retrieve a Web page from a pre-determined C2 server. It expects the Web page to contain special HTML tags; the backdoor will attempt to interpret the data between the tags as commands. This malware family is a only a downloader which operates over the HTTP protocol with a hard-coded URL. If directed, it has the capability to download, decompress, and execute compressed binaries.

WEBC2-AUSOV\_sample\_6E442C5EF460BEE4C9457C6BF7A132D6  
WEBC2-AUSOV\_sample\_097B5ABB53A3D84FA9EABDA02FEF9E91  
WEBC2-AUSOV\_sample\_A40E20FF8B991308F508239625F275D8  
WEBC2-AUSOV\_sample\_D262CB8267BEB0E218F6D11D6AF9052E

### 31 WEBC2-BOLID

A WEBC2 backdoor is designed to retrieve a Web page from a pre-determined C2 server. It expects the Web page to contain special HTML tags; the backdoor will attempt to interpret the data between the tags as commands. This family of malware is a backdoor capable of downloading files and updating its configuration.

Communication with the command and control (C2) server uses a combination of single-byte XOR and Base64 encoded data wrapped in standard HTML tags. The malware family installs a registry key as a persistence mechanism.

WEBC2-BOLID\_sample\_1EA61A0945BDE3C6F41E12BC01928D37  
WEBC2-BOLID\_sample\_5FF3269FACA4A67D1A4C537154AAAD4B  
WEBC2-BOLID\_sample\_53B263DD41838AA178A5CED338A207F3  
WEBC2-BOLID\_sample\_9675827A495F4BA6A4EFD4DD70932B7C  
WEBC2-BOLID\_sample\_D8238E950608E5ABA3D3E9E83E9EE2CC

### 32. WEBC2-CLOVER

A WEBC2 backdoor is designed to retrieve a Web page from a pre-determined C2 server. It expects the Web page to contain special HTML tags; the backdoor will attempt to interpret the data between the tags as commands. The family of malware provides the attacker with an interactive command shell, the ability to upload and download files, execute commands on the system, list processes and DLLs, kill processes, and ping hosts on the local network. Responses to these commands are encrypted and compressed before being POSTed to the server. Some variants copy cmd.exe to Updatasched.exe in a temporary directory, and then may launch that in a process if an interactive shell is called. On initial invocation, the malware also attempts to delete previous copies of the Updatasched.exe file.

WEBC2-CLOVER\_sample\_2FCCAA39533DE02490B1C6395878DD79  
WEBC2-CLOVER\_sample\_29C691978AF80DC23C4DF96B5F6076BB  
WEBC2-CLOVER\_sample\_065E63AFDFA539727F63AF7530B22D2F

### 33. WEBC2-CSON

A WEBC2 backdoor is designed to retrieve a Web page from a pre-determined C2 server. It expects the Web page to contain special HTML tags; the backdoor will attempt to interpret the data between the tags as commands. Members of this family of malware act only as downloaders and droppers for other malware. They communicate with a hard-coded C2 server, reading commands embedded in HTML comment fields. Some variants are executables which act upon execution, others are DLLs which can be attached to services or loaded through search order hijacking.

WEBC2-CSON\_sample\_7D3140BD028F70F1FA865364B69C5999  
WEBC2-CSON\_sample\_50F35B7C86AEDE891A72FCB85F06B0B7  
WEBC2-CSON\_sample\_73D125F84503BD87F8142CF2BA8AB05E  
WEBC2-CSON\_sample\_575836EBB1B8849F04E994E9160370E4  
WEBC2-CSON\_sample\_4192479B055B2B21CB7E6C803B765D34  
WEBC2-CSON\_sample\_277964807A66AE6B6BD81DBFCAA3E4E6  
WEBC2-CSON\_sample\_A38A367D6696BA90B2E778A5A4BF98FD  
WEBC2-CSON\_sample\_D22863C5E6F098A4B52688B021BEEF0A  
WEBC2-CSON\_sample\_F1E5D9BF7705B4DC5BE0B8A90B73A863  
WEBC2-CSON\_sample\_F802B6E448C054C9C16B97FF85646825

### 34. WEBC2-DIV

The WEBC2 malware family is designed to retrieve a Web page from a pre-determined C2 server. It expects the Web page to contain special HTML tags; the backdoor will attempt to interpret the data between the tags as commands. The WEBC2-DIV variant searches for the strings "div safe:" and " balance" to delimit encoded C2 information. If the decoded string begins with the letter "J" the malware will parse additional arguments in the decoded string to specify the sleep interval to use. WEBC2-DIV is capable of downloading a file, downloading and executing a file, or sleeping a specified interval.

WEBC2-DIV\_sample\_1E5EC6C06E4F6BB958DCBB9FC636009D

### 35 WEBC2-GREENCAT

A WEBC2 backdoor is designed to retrieve a Web page from a pre-determined C2 server. It expects the Web page to contain special HTML tags; the backdoor will attempt to interpret the data between the tags as commands. This malware is a variant on the GREENCAT family, using a fixed web C2. This family is a full featured backdoor which provides remote command execution, file transfer, process and service enumeration and manipulation. It installs itself persistently through the current user's registry Run key.

WEBC2-GREENCAT\_sample\_1CE4605E771A04E375E0D1083F183E8E  
WEBC2-GREENCAT\_sample\_36C0D3F109AEDE4D76B05431F8A64F9E  
WEBC2-GREENCAT\_sample\_55FB1409170C91740359D1D96364F17B  
WEBC2-GREENCAT\_sample\_BA0C4D3DBF07D407211B5828405A9B91  
WEBC2-GREENCAT\_sample\_E54CE5F0112C9FDFE86DB17E85A5E2C5  
WEBC2-GREENCAT\_sample\_E83F60FB0E0396EA309FAF0AED64E53F

### 36. WEBC2-HEAD

The WEBC2 malware family is designed to retrieve a Web page from a pre-determined C2 server. It expects the Web page to contain special HTML tags; the backdoor will attempt to interpret the data between the tags as commands. The WEBC2-HEAD variant communicates over HTTPS, using the system's SSL implementation to encrypt all communications with the C2 server. WEBC2-HEAD first issues an HTTP GET to the host, sending the Base64-encoded string containing the name of the compromised machine running the malware.

WEBC2-HEAD\_sample\_7B42B35832855AB4FF37AE9B8FA9E571  
WEBC2-HEAD\_sample\_88C7C50CD4130561D57A1D3B82C5B953  
WEBC2-HEAD\_sample\_165EF79E7CAA806F13F82CC2BBF3DEDD  
WEBC2-HEAD\_sample\_649D54BC9EEF5A60A4B9D8B889FEE139  
WEBC2-HEAD\_sample\_973F4A238D6D19BDC7B42977B07B9CEF  
WEBC2-HEAD\_sample\_B74022A7B9B63FDC541AE0848B28A962  
WEBC2-HEAD\_sample\_C4C638750526E28F68D6D71FD1266BDF  
WEBC2-HEAD\_sample\_C9172B3E83C782BC930C06B628F31FA5  
WEBC2-HEAD\_sample\_EC8C89AA5E521572C74E2DD02A4DAF78  
WEBC2-HEAD\_sample\_F627990BBE2EC5C48C180F724490C332

### 37 WEBC2-KT3

The WEBC2 malware family is designed to retrieve a Web page from a pre-determined C2 server. It expects the Web page to contain special HTML tags; the backdoor will attempt to interpret the data between the tags as commands. The WEBC2-KT3 variant searches for commands in a specific comment tag. Network traffic starting with `*!Kt3+v|` may indicate WEBC2-KT3 activity.

WEBC2-KT3\_sample\_EC3A2197CA6B63EE1454D99A6AE145AB

### 38 WEBC2-QBP

The WEBC2 malware family is designed to retrieve a Web page from a pre-determined C2 server. It expects the Web page to contain special HTML tags; the backdoor will attempt to interpret the data between the tags as commands. The WEBC2-QBP variant will search for two strings in a HTML comment. The first will be "2010QBP " followed by " 2010QBP/--". Inside these tags will be a DES-encrypted string.

WEBC2-QBP\_sample\_929802A27737CEBC59D19DA724FDF30A  
WEBC2-QBP\_sample\_C04C796EF126AD7429BE7D55720FE392  
WEBC2-QBP\_sample\_CF9C2D5A8FBDD1C5ADC20CFC5E663C21

### 39 WEBC2-RAVE

A WEBC2 backdoor is designed to retrieve a Web page from a pre-determined C2 server. It expects the Web page to contain special HTML tags; the backdoor will attempt to interpret the data between the tags as commands. This family of malware will set itself up as a service and connect out to a hardcoded web page and read a modified base64 string from this webpage. The later versions of this malware supports three commands (earlier ones are just downloaders or reverse shells). The first commands will sleep the malware for N number of hours. The second command will download a binary from the encoded HTML comment and execute it on the infected host. The third will spawn an encoded reverse shell to an attacker specified location and port.

WEBC2-RAVE\_sample\_5BCAA2F4BC7567F6FFD5507A161E221A  
WEBC2-RAVE\_sample\_9F11BC08AF048C5C3A110E567082FE0B

```
WEBC2-RAVE_sample_438983192903F3FECF77500A39459EE6  
WEBC2-RAVE_sample_A2534E9B7E4146368EA3245381830EB0  
WEBC2-RAVE_sample_BDD2AD4C0E1E5667D117810AE9E36C4B  
WEBC2-RAVE_sample_BF0EE4367EA32F8E3B911C304258E439
```

#### 40. WEBC2-TABLE

The WEBC2 malware family is designed to retrieve a Web page from a pre-determined C2 server. It expects the Web page to contain special HTML tags; the backdoor will attempt to interpret the data between the tags as commands. The WEBC2-TABLE variant looks for web pages containing 'background', 'align', and 'bgcolor' tags to be present in the requested Web page. If the data in these tags are formatted correctly, the malware will decode a second URL and a filename. This URL is then retrieved, written to the decoded filename and executed.

```
WEBC2-TABLE_sample_7A7A46E8FBC25A624D58E897DEE04FFA
```

#### 41 WEBC2-TOCK

The WEBC2 malware family is designed to retrieve a Web page from a pre-determined C2 server. It expects the Web page to contain special HTML tags; the backdoor will attempt to interpret the data between the tags as commands. The WEBC2-TOCK variant looks for tags which include the name of the system in them as a parameter. If those tags are formed correctly, the malware will decode the payload URL from the web page, then download and execute the payload.

no samples

#### 42. WEBC2-UGX

A WEBC2 backdoor is designed to retrieve a Web page from a pre-determined C2 server. It expects the Web page to contain special HTML tags; the backdoor will attempt to interpret the data between the tags as commands. Members of this family of malware provide remote command shell and remote file download and execution capabilities.

The malware downloads a web page containing a crafted HTML comment that subsequently contains an encoded command. The contents of this command tell the malware whether to download and execute a program, launch a reverse shell to a specific host and port number, or to sleep for a period of time.

```
WEBC2-UGX_sample_4B19A2A6D40A5825E868C6EF25AE445E  
WEBC2-UGX_sample_54D5D171A482278CC8EACF08D9175FD7  
WEBC2-UGX_sample_56DE2854EF64D869B5DF7AF5E4EF3E3E  
WEBC2-UGX_sample_75DAD1CCABAE8ADEB5BAE899D0C630F8  
WEBC2-UGX_sample_8462A62F13F92C34E4B89A7D13A185AD
```

#### 43. WEBC2-Y21K

A WEBC2 backdoor is designed to retrieve a Web page from a pre-determined C2 server. It expects the Web page to contain special HTML tags; the backdoor will attempt to interpret the data between the tags as commands. Members of this family of backdoor malware talk to specific Web-based Command & Control (C2) servers. The backdoor has a limited command set, depending on version. It is primarily a downloader, but it classified as a backdoor because it can accept a limited command set, including changing local directories, downloading and executing additional files, sleeping, and connecting to a specific IP & port not initially included in the instruction set for the malware. Each version of the malware has at least one hardcoded URL to which it connects to receive its initial commands. This family of malware installs itself as a service, with the malware either being the executable run by the service, or the service DLL loaded by a legitimate service. The same core code is seen recompiled on different dates or with different names, but the same functionality. Key signatures include a specific set of functions (some of which can be used with the OS-provided rundll32.exe tool to install the malware as a service), and hardcoded strings used in communication with C2 servers to issue commands to the implant.

```
WEBC2-Y21K_sample_4CABFAEF26FD8E5AEC01D0C4B90A32F3  
WEBC2-Y21K_sample_225E33508861984DD2A774760BFDFC52  
WEBC2-Y21K_sample_2479A9A50308CB72FCD5E4E18EF06468
```

#### 44. WEBC2-YAHOO

The WEBC2 malware family is designed to retrieve a Web page from a pre-determined C2 server. It expects the Web page to contain special HTML tags; the backdoor will attempt to interpret the data between the tags as commands. The WEBC2-YAHOO variant enters a loop where every ten minutes it attempts to download a web page that may contain an encoded URL. The encoded URL will be found in the pages returned inside an attribute named 'sb' or 'ex' within a tag named 'yahoo'. The embedded link can direct the malware to download and execute files.

```
WEBC2-YAHOO_sample_2B659D71AE168E774FAAF38DB30F4A84  
WEBC2-YAHOO_sample_4C9C9DBF388A8D81D8CFB4D3FC05F8E4  
WEBC2-YAHOO_sample_7A670D13D4D014169C4080328B8FEB86  
WEBC2-YAHOO_sample_36D5C8FC4B14559F73B6136D85B94198
```

WEBC2-YAHOO\_sample\_37DDD3D72EAD03C7518F5D47650C8572  
WEBC2-YAHOO\_sample\_0149B7BD7218AAB4E257D28469FDDB0D  
WEBC2-YAHOO\_sample\_1415EB8519D13328091CC5C76A624E3D  
WEBC2-YAHOO\_sample\_A8F259BB36E00D124963CFA9B86F502E  
WEBC2-YAHOO\_sample\_AA4F1ECC4D25B33395196B5D51A06790  
WEBC2-YAHOO\_sample\_CC3A9A7B026BFE0E55FF219FD6AA7D94  
WEBC2-YAHOO\_sample\_F7F85D7F628CE62D1D8F7B39D8940472

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Source: <http://contagiodump.blogspot.com/2013/03/mandiant-apt1-samples-categorized-by.html>