

# Download Station Addon Developer's Guide v4

---

Download Station features add-on functionality to extend search, download and RSS functions. Add-on are developed using PHP and are controlled by the Download Station daemon. This document describes the Add-on architecture, features and how to develop them.

## Addon Directory

### Default Volume

Depending on your NAS model, the default volume can be found using the following command:

```
[~] # /sbin/getcfg -f /etc/config/def_share.info SHARE_DEF defVolMP
/share/CACHEDEV1_DATA

[~] # export DEFAULT_VOLUME=`/sbin/getcfg -f /etc/config/def_share.info SHARE_DEF defVolMP`
```

Every installed app is saved to the `${DEFAULT_VOLUME}/.qpkg` folder, and Download Station is located in the `${DEFAULT_VOLUME}/.qpkg/DSv3` folder.

### Addon Installation

Download Station uses domain names for naming Add-ons. They can be found in `${DEFAULT_VOLUME}/.qpkg/DSv3/addons/`.

```
[~] # ls -l ${DEFAULT_VOLUME}/.qpkg/DSv3/usr/sbin/addons
btdigg.org/
bttiantang.com/
extratorrent.cc/
kickass.to/
mininova.org/
torrentreactor.net/
vortex.eu/
yun.baidu.com/
```

Each Add-on contains at least three types of files.

```
[~] # ls -l ${DEFAULT_VOLUME}/.qpkg/usr/sbin/addons/btdigg.org/
addon.json
addon.key
btdigg.org.php
```

The first one is an Add-on definition file named `addon.json`. This Add-on definition is nothing more than a metadata file in JSON format that contains properties including your Add-on's name, description, and version number. At a high level, we use it to tell Download Station what the Add-on is going to do. To learn more about the Add-on definition, read the [Add-on Definition File Format](#) documentation.

The second is an Add-on signature file named `addon.key`. This signature file is a standard RSA public key file and can be generated from an `openssl` command line tool. Before releasing your Add-on, a package utility named `ds-addon-pack.sh` will compress all the files in your Add-on folder and sign with the RSA private key.

The last file is your add-on entry. Download Station will verify and run this program using add-on definition. The ISite, IRSS, IVerify, ISearch and IDownload interface is defined in Download Station. Your add-on must at least

extend ISite and implement a Download Station accessible constructor function and the other interfaces are optional. Add-ons only require those three files for base function. Put everything into your Add-on folder and the ds-addon-pack.sh utility will compress those files into a single file and sign it with RSA private key.

## Addon Definition

The Download Station Add-on definition file is called addon.json. Before running an Add-on, Download Station will check the definition file format, properties types and values. Some properties can also be used in the web control page to help the user differentiate between supported features. The following code shows the supported definition properties for Add-ons, with links to the section that discusses each property.

```
{
  "author": "QNAP",
  "website": "http://www.qnap.com",
  "name": "qnap.com",
  "addon": "qnap.com.php",
  "class": "qnap",
  "hosts": [ ... ],
  "domain": "qnap.com",
  "version": 100,
  "interface": [ ... ],
  "qpkg_dependencies": { ... },
  "description": { ... }
}
```

### Author

Only strings are accepted. It can be the author's name, group or any other identifier.

### Website

Only strings are accepted.

### Name

Only strings are accepted. This is the display name of the add-on.

### Addon

Only strings are accepted. This is the file name of your program entry. Download Station will load and run this file.

### Class

Only strings are accepted. In the addon file, your program must implement ISite interface. Download Station will use this value to find the class and create a new runtime instance.

## Hosts

Only string arrays are accepted. Many web sites have alias names or redirect settings. You can give more than one domain host. Download Station will use this value to determine a URL and apply UL to your Add-on program automatically.

## Domain

Only strings are accepted. Download Station uses domain names for Add-on names. This value must be identical to your Add-on folder.

## Version

Only integers are accepted. The minimum number is 100. If your version number is 12345 that will be displayed as `123.45` on the UI.

## Interface

Only string arrays are accepted. Download Station has predefined several PHP interfaces (IRss, ISearch, IVerify, IDownload). To make Download Station know which features are supported by your Add-on, implement the interfaces into you program entry and add definitions to the interface property.

## Qpkg Dependencies

App name and version string pair list. If your Add-on will use another app or library, this property will inform users to install those apps before using the add-on. The default value in ds-addon is {"DownloadStation": "5.0.0" }

## Description

Language name and description message pair list. You must at least provide an ENG description. All the languages supported by QTS are below.

ENG - English

SCH - 简体中文

TCH - 繁體中文

CZE - Czech

DAN - Dansk

GER - Deutsch

SPA - Español

FRE - Français

ITA - Italiano

JPN - 日本語

KOR -

NOR - Norsk

POL - Polski

RUS - Русский

FIN - Suomi

SWE - Svenska

DUT - Nederlands

TUR - Turk dili  
 THA - ไทย  
 HUN - Magyar  
 POR - Português  
 GRK - Ελληνικά  
 ROM - Român

## Utility

### ds-addon-pack.sh

This is an automatic compression and sign tool. Developer need use this tool to build a packaged and signed file.

```
[/share/CACHEDEV1_DATA/.qpkg/DSv3/usr/sbin] # ./ds-addon-pack.sh

Usage: ./ds-addon-pack.sh <private.pem> <public.pem> <addon folder>

private.pem: /usr/bin/openssl genrsa -out private.pem 1024
public.pem: /usr/bin/openssl rsa -in private.pem -out public.pem -outform PEM -pubout
```

### ds-addon

Download Station had implemented a utility named ds-addon. You can find this utility in `/${DEFAULT_VOLUME}/.qpkg/DSv3/usr/sbin` path. This utility can be used to list, install, enable or create an Add-on. This utility also can run and test your program.

```
[/share/CACHEDEV1_DATA/.qpkg/DSv3/usr/sbin] # ./ds-addon

Usage: ds-addon <option>
-h|--help
-a|--addons
-i|--install <addon file> [force 0|1]
-e|--enable <addon> [0|1]
-c|--create <domain name> <class name>
-r|--rss <addon> <url> [username] [password]
-v|--verify <addon> [username] [password]
-s|--search <addon> <keyword> [limit >= 50] [category] [username] [password]
-d|--download <addon> <url> [username] [password] [meta data]
-R|--Refresh <addon> <download link> [meta data]
-P|--Postprocess <addon> <path> <file list> [meta data]
```

The ds-addon usage in the above example is very simple. `<>` means is required and `[]` is optional. To determine installed Add-ons, you can pass `-a` or `-addons` to ds-addon utility. For example:

```
[/share/CACHEDEV1_DATA/.qpkg/DSv3/usr/sbin] # ./ds-addon -a
Array
(
    [0] => btdigg.org (search)
    [1] => bttiantang.com (search, download)
    [2] => extratorrent.cc (search)
```

```

[3] => kickass.to (search)
[4] => mininova.org (search)
[5] => torrentreactor.net (search)
[6] => tudou.com (download)
[7] => vektor.eu (rss, search, download)
[8] => yun.baidu.com (download)
)

```

In the above example, the ds-addon utility discovered every Add-on in `$(DEFAULT_VOLUME)/.qpkg/DSv3/usr/sbin/addons/` sub folders and verified addon definition file (addon.json) to get which features are supported. Finally, all legal information is printed to the console. For example, vektor.eu Add-on support rss parse, keyword search and url download.

Because Download Station uses domain name to differentiate Add-ons, the `<addon>` is the Add-on name which can list from `-a` or `--addon` parameter. If you wish run and test your Add-on, you can pass `--rss`, `--verify`, `--search` and `--download` parameter to do that. More rss, verify, search and download details will be mentioned in the develop section.

### Error Code

When an error occurs, the utility will provide an error message. The utility will also return error codes to help developers to determine what type of error has occurred.

Decimal	Hexadecimal	Description
0	0x0000	Everything is good
1	0x0001	Utility parameter error
2	0x0002	Other process is running same add-on
3	0x0003	Add-on is not found
4	0x0004	Add-on already exists
5	0x0005	Add-on is illegal
6	0x0006	Add-on signature or version compare failed
7	0x0007	Install Add-on failed
8	0x0008	Add-on class name is not same as definition
9	0x0009	Add-on definition syntax or value error
10	0x000A	Add-on occur exception at runtime
11	0x000B	Add-on is not enabled
12	0x000C	URL format is not regular
13	0x000D	Add definition interface has not implement
14	0x000E	Add-on parsing URL failed
15	0x000F	Add-on authentication failed
16	0x0010	Add-on only allow premium user account
17	0x0011	Download link format is not regular
18	0x0012	Search link format is not regular
19	0x0013	RSS link format is not regular
20	0x0014	Add-on dependency app or library not found

21	0x0015	Installed dependency app or library version is not regular
22	0x0016	Installed dependency app or library version too old
23	0x0017	Post process occur exception at runtime

## PHP Addon Interfaces

### ISite

This is the most important interface of the Download Station Add-on. Download Station can create an Add-on instance and pass through URL, username and password using this standard constructor. How to use this data depends on the developer.

```
interface ISite {
    /*
     * @param {string} $url
     * @param {string} $username
     * @param {string} $password
     * @param {string} $meta
     */
    public function __construct($url = null, $username = null, $password = null, $meta = null);
}
```

Download Station 5.0 add the fourth parameter \$meta. This value only for QNAP internal.

### IRss

For general websites, Download Station can parse RSS feed and URL. But sometimes, websites do not support regular RSS. The IRss interface can help Download Station to understand this data. To implement this interface, developers must transfer website data to a regular RssFeed array and return it to Download Station. And then Download Station can continue with verification and job schedule.

```
interface IRss {
    /*
     * ReadRss()
     * @return {array} RssFeed array
     */
    public function ReadRss();
}
```

### ISearch

Like IRss interface, Download Station will verify SearchLink array values, transfer data to JSON format and respond to the front-end invoker.

```
interface ISearch {
    /*
     * Search()
     * @param {string} $keyword
     * @param {integer} $limit
     * @param {string} $category
     */
}
```

```

    * @return {array} SearchLink array
    */
    public function Search($keyword, $limit, $category);
}

```

## IVerify

Download Station check the username and password is correct via Verify() method.

```

interface IVerify {
    /*
    * Verify()
    * @return {boolean}
    */
    public function Verify();
}

```

## IDownload

Download Station cannot parse URL from JavaScript, routing table, advance cookie rule and others. IDownload can help Download Station to know about where is the real downloading link. In some cases, the real downloading link will cause timeout. To prevent this problem, apply a refresh\_time value to downloading link. Download Station will try to update it when the previous total download time is over this refresh\_time value.

```

interface IDownload {
    /*
    * GetDownloadLink()
    * @return {mixed} DownloadLink object or DownloadLink array
    */
    public function GetDownloadLink();
    /*
    * RefreshDownloadLink()
    * @param {DownloadLink} $dlink
    * @return {DownloadLink} DownloadLink object
    */
    public function RefreshDownloadLink($dlink);
}

```

## IPostProcess

Download Station also provide post processing solution. Implement IPostProcess can help an addon to do merge files, uncompress file or others. After post process, Download Station will update the downloaded file list and total size form PostProcess function returned filename list.

```

interface IPostProcess {
    /*
    * PostProcess()
    * @param {string} $path download temp path
    * @param {array} $files temp file list
    * @param {string} $meta caller metadata
    * @return {array} file list in the $path
    */
}

```

```
    */  
    static public function PostProcess($path, $files, $meta);  
}
```

## PHP Addon Classes

### RssFeed

```
final class RssFeed {  
    public $link = "";  
    public $title = "";  
}
```

#### **\$link**

String value of internet resource(URL).

#### **\$title**

String value of title or name.

### SearchLink

```
final class SearchLink {  
    public $src = "";  
    public $link = "";  
    public $name = "";  
    public $size = 0;  
    public $time;  
    public $seeds = 0;  
    public $peers = 0;  
    public $category = "";  
    public $enclosure_url = "";  
}
```

#### **\$src**

Search engine or provider name.

#### **\$link**

The source URL of this result.

#### **\$name**

The title, filename or short description.

#### **\$size**

Total downloaded files size in bytes.

#### **\$time**

The added time of this result. Must be NULL or PHP DateTime format.



**\$seeds**

An integer value of how many users are sharing this link.

**\$peers**

An integer value of how many users access this link.

**\$category**

A category string value of this result.

**\$enclosure\_url**

Actually is a magnet link or a file download URL.

**DownloadLink**

In general case, Download Station will try to load a URL and extract filename from HTTP response header. But many sites will verify HTTP agent name, cookie or something is valid. DownloadLink can be use to describe those and help Download Station know how to download them.

```
final class DownloadLink {
    public $url = null;
    public $source = null;
    public $cookie = "";
    public $username = "";
    public $password = "";
    public $filename = "";
    public $filesize = 0;
    public $base_name = "";
    public $post_data = "";
    public $ext_name = "";
    public $is_folder = false;
    public $refresh_time = 0;
    public $header = array();
    static $CONTENT_TYPE = array(
        "application/applixware" => ".aw",
        "application/atom+xml" => ".atom",
        "application/atomcat+xml" => ".atomcat",
        "application/atomsvc+xml" => ".atomsvc",
        "application/ccxml+xml" => ".ccxml",
        "application/cdmi-capability" => ".cdmia",
        "application/cdmi-container" => ".cdmic",
        "application/cdmi-domain" => ".cdmid",
        "application/cdmi-object" => ".cdmio",
        "application/cdmi-queue" => ".cdmiq",
        "application/cu-seeme" => ".cu",
        "application/davmount+xml" => ".davmount",
        "application/dssc+der" => ".dssc",
        "application/dssc+xml" => ".xdssc",
        "application/ecascript" => ".es",
```

```
"application/emma+xml" => ".emma",
"application/epub+zip" => ".epub",
"application/exi" => ".exi",
"application/font-tdpfr" => ".pfr",
"application/hyperstudio" => ".stk",
"application/ipfix" => ".ipfix",
"application/java-archive" => ".jar",
"application/java-serialized-object" => ".ser",
"application/java-vm" => ".class",
"application/javascript" => ".js",
"application/json" => ".json",
"application/mac-binhex40" => ".hqx",
"application/mac-compactpro" => ".cpt",
"application/mads+xml" => ".mads",
"application/marc" => ".mrc",
"application/marcxml+xml" => ".mrcx",
"application/mathematica" => ".ma",
"application/mathml+xml" => ".mathml",
"application/mbox" => ".mbox",
"application/mediaservercontrol+xml" => ".mscml",
"application/metalink4+xml" => ".meta4",
"application/mets+xml" => ".mets",
"application/mods+xml" => ".mods",
"application/mp21" => ".m21",
"application/mp4" => ".mp4",
"application/msword" => ".doc",
"application/mxf" => ".mxf",
"application/oda" => ".oda",
"application/obeps-package+xml" => ".opf",
"application/ogg" => ".ogx",
"application/onenote" => ".onetoc",
"application/patch-ops-error+xml" => ".xer",
"application/pdf" => ".pdf",
"application/pgp-signature" => ".pgp",
"application/pics-rules" => ".prf",
"application/pkcs10" => ".p10",
"application/pkcs7-mime" => ".p7m",
"application/pkcs7-signature" => ".p7s",
"application/pkcs8" => ".p8",
"application/pkix-attr-cert" => ".ac",
"application/pkix-cert" => ".cer",
"application/pkix-crl" => ".crl",
"application/pkix-pkipath" => ".pkipath",
"application/pkixcmp" => ".pki",
"application/pls+xml" => ".pls",
"application/postscript" => ".ai",
"application/prs.cww" => ".cww",
```

```
"application/pskc+xml" => ".pskcxml",
"application/rdf+xml" => ".rdf",
"application/reginfo+xml" => ".rif",
"application/relax-ng-compact-syntax" => ".rnc",
"application/resource-lists-diff+xml" => ".rld",
"application/resource-lists+xml" => ".rl",
"application/rls-services+xml" => ".rs",
"application/rsd+xml" => ".rsd",
"application/rss+xml" => ".rss",
"application/rtf" => ".rtf",
"application/sbml+xml" => ".sbml",
"application/scvp-cv-request" => ".scq",
"application/scvp-cv-response" => ".scs",
"application/scvp-vp-request" => ".spq",
"application/scvp-vp-response" => ".spp",
"application/sdp" => ".sdp",
"application/set-payment-initiation" => ".setpay",
"application/set-registration-initiation" => ".setreg",
"application/shf+xml" => ".shf",
"application/smil+xml" => ".smi",
"application/sparql-query" => ".rq",
"application/sparql-results+xml" => ".srx",
"application/srgs" => ".gram",
"application/srgs+xml" => ".grxml",
"application/sru+xml" => ".sru",
"application/ssml+xml" => ".ssml",
"application/tei+xml" => ".tei",
"application/thraud+xml" => ".tfi",
"application/timestamped-data" => ".tsd",
"application/vnd.3gpp.pic-bw-large" => ".plb",
"application/vnd.3gpp.pic-bw-small" => ".psb",
"application/vnd.3gpp.pic-bw-var" => ".pvb",
"application/vnd.3gpp2.tcap" => ".tcap",
"application/vnd.3m.post-it-notes" => ".pwn",
"application/vnd.accpac.simply.aso" => ".aso",
"application/vnd.accpac.simply.imp" => ".imp",
"application/vnd.acucobol" => ".acu",
"application/vnd.acucorp" => ".atc",
"application/vnd.adobe.air-application-installer-package+zip" => ".air",
"application/vnd.adobe.fxp" => ".fxp",
"application/vnd.adobe.xdp+xml" => ".xdp",
"application/vnd.adobe.xfdf" => ".xfdf",
"application/vnd.ahead.space" => ".ahead",
"application/vnd.airzip.filesecure.azf" => ".azf",
"application/vnd.airzip.filesecure.azs" => ".azs",
"application/vnd.amazon.ebook" => ".azw",
"application/vnd.americandynamics.acc" => ".acc",
```

```
"application/vnd.amiga.ami" => ".ami",
"application/vnd.android.package-archive" => ".apk",
"application/vnd.anser-web-certificate-issue-initiation" => ".cii",
"application/vnd.anser-web-funds-transfer-initiation" => ".fti",
"application/vnd.antix.game-component" => ".atx",
"application/vnd.apple.installer+xml" => ".mpkg",
"application/vnd.apple.mpegurl" => ".m3u8",
"application/vnd.aristanetworks.swi" => ".swi",
"application/vnd.audiograph" => ".aep",
"application/vnd.blueice.multipass" => ".mpm",
"application/vnd.bmi" => ".bmi",
"application/vnd.businessobjects" => ".rep",
"application/vnd.chemdraw+xml" => ".cdxml",
"application/vnd.chipnuts.karaoke-mmd" => ".mmd",
"application/vnd.cinderella" => ".cdy",
"application/vnd.claymore" => ".cla",
"application/vnd.cloanto.rp9" => ".rp9",
"application/vnd.clonk.c4group" => ".c4g",
"application/vnd.cluetrust.cartomobile-config" => ".c11amc",
"application/vnd.cluetrust.cartomobile-config-pkg" => ".c11amz",
"application/vnd.commonspace" => ".csp",
"application/vnd.contact.cmsg" => ".cdbcmmsg",
"application/vnd.cosmocaller" => ".cmc",
"application/vnd.crick.clicker" => ".clkx",
"application/vnd.crick.clicker.keyboard" => ".clkk",
"application/vnd.crick.clicker.palette" => ".clkp",
"application/vnd.crick.clicker.template" => ".clkt",
"application/vnd.crick.clicker.wordbank" => ".clkw",
"application/vnd.criticaltools.wbs+xml" => ".wbs",
"application/vnd.ctc-posml" => ".pml",
"application/vnd.cups-ppd" => ".ppd",
"application/vnd.curl.car" => ".car",
"application/vnd.curl.pcurl" => ".pcurl",
"application/vnd.data-vision.rdz" => ".rdz",
"application/vnd.denovo.fcselayout-link" => ".fe_launch",
"application/vnd.dna" => ".dna",
"application/vnd.dolby.mlp" => ".mlp",
"application/vnd.dpgraph" => ".dpg",
"application/vnd.dreamfactory" => ".dfac",
"application/vnd.dvb.ait" => ".ait",
"application/vnd.dvb.service" => ".svc",
"application/vnd.dynageo" => ".geo",
"application/vnd.ecowin.chart" => ".mag",
"application/vnd.enliven" => ".nml",
"application/vnd.epson.esf" => ".esf",
"application/vnd.epson.msfx" => ".msfx",
"application/vnd.epson.quickanime" => ".qam",
```

```
"application/vnd.epson.salt" => ".slt",
"application/vnd.epson.ssf" => ".ssf",
"application/vnd.eszigno3+xml" => ".es3",
"application/vnd.ezpix-album" => ".ez2",
"application/vnd.ezpix-package" => ".ez3",
"application/vnd.fdf" => ".fdf",
"application/vnd.fdsn.seed" => ".seed",
"application/vnd.flographit" => ".gph",
"application/vnd.fluxtime.clip" => ".ftc",
"application/vnd.framemaker" => ".fm",
"application/vnd.frogans.fnc" => ".fnc",
"application/vnd.frogans.ltf" => ".ltf",
"application/vnd.fsc.weblaunch" => ".fsc",
"application/vnd.fujitsu.oasys" => ".oas",
"application/vnd.fujitsu.oasys2" => ".oa2",
"application/vnd.fujitsu.oasys3" => ".oa3",
"application/vnd.fujitsu.oasysgp" => ".fg5",
"application/vnd.fujitsu.oasysprs" => ".bh2",
"application/vnd.fujixerox.ddd" => ".ddd",
"application/vnd.fujixerox.docuworks" => ".xdw",
"application/vnd.fujixerox.docuworks.binder" => ".xbd",
"application/vnd.fuzzysheet" => ".fzs",
"application/vnd.genomatix.tuxedo" => ".txd",
"application/vnd.geogebra.file" => ".ggb",
"application/vnd.geogebra.tool" => ".ggt",
"application/vnd.geometry-explorer" => ".gex",
"application/vnd.geonext" => ".gxt",
"application/vnd.geoplan" => ".g2w",
"application/vnd.geospace" => ".g3w",
"application/vnd.gmx" => ".gmx",
"application/vnd.google-earth.kml+xml" => ".kml",
"application/vnd.google-earth.kmz" => ".kmz",
"application/vnd.grafeq" => ".gqf",
"application/vnd.groove-account" => ".gac",
"application/vnd.groove-help" => ".ghf",
"application/vnd.groove-identity-message" => ".gim",
"application/vnd.groove-injector" => ".grv",
"application/vnd.groove-tool-message" => ".gtm",
"application/vnd.groove-tool-template" => ".tpl",
"application/vnd.groove-vcard" => ".vcg",
"application/vnd.hal+xml" => ".hal",
"application/vnd.handheld-entertainment+xml" => ".zmm",
"application/vnd.hbci" => ".hbci",
"application/vnd.hhe.lesson-player" => ".les",
"application/vnd.hp-hpgl" => ".hpgl",
"application/vnd.hp-hpid" => ".hpid",
"application/vnd.hp-hps" => ".hps",
```

```
"application/vnd.hp-jlyt" => ".jlt",
"application/vnd.hp-pcl" => ".pcl",
"application/vnd.hp-pclxl" => ".pclxl",
"application/vnd.hydrostatix.sof-data" => ".sfd-hdstx",
"application/vnd.hzn-3d-crossword" => ".x3d",
"application/vnd.ibm.minipay" => ".mpy",
"application/vnd.ibm.modcap" => ".afp",
"application/vnd.ibm.rights-management" => ".irm",
"application/vnd.ibm.secure-container" => ".sc",
"application/vnd.iccprofile" => ".icc",
"application/vnd.igloader" => ".igl",
"application/vnd.immervision-ivp" => ".ivp",
"application/vnd.immervision-ivu" => ".ivu",
"application/vnd.insors.igm" => ".igm",
"application/vnd.intercon.formnet" => ".xpw",
"application/vnd.intergeo" => ".i2g",
"application/vnd.intu.qbo" => ".qbo",
"application/vnd.intu.qfx" => ".qfx",
"application/vnd.ipunplugged.rcprofile" => ".rcprofile",
"application/vnd.irepository.package+xml" => ".irp",
"application/vnd.is-xpr" => ".xpr",
"application/vnd.isac.fcs" => ".fcs",
"application/vnd.jam" => ".jam",
"application/vnd.jcp.javame.midlet-rms" => ".rms",
"application/vnd.jisp" => ".jisp",
"application/vnd.joost.joda-archive" => ".joda",
"application/vnd.kahootz" => ".ktz",
"application/vnd.kde.karbon" => ".karbon",
"application/vnd.kde.kchart" => ".chrt",
"application/vnd.kde.kformula" => ".kfo",
"application/vnd.kde.kivio" => ".flw",
"application/vnd.kde.kontour" => ".kon",
"application/vnd.kde.kpresenter" => ".kpr",
"application/vnd.kde.kspread" => ".ksp",
"application/vnd.kde.kword" => ".kwd",
"application/vnd.kenameaapp" => ".htke",
"application/vnd.kidspiration" => ".kia",
"application/vnd.kinar" => ".kne",
"application/vnd.koan" => ".skp",
"application/vnd.kodak-descriptor" => ".sse",
"application/vnd.las.las+xml" => ".lasxml",
"application/vnd.llamagraphics.life-balance.desktop" => ".lbd",
"application/vnd.llamagraphics.life-balance.exchange+xml" => ".lbe",
"application/vnd.lotus-1-2-3" => "0.123",
"application/vnd.lotus-approach" => ".apr",
"application/vnd.lotus-freelance" => ".pre",
"application/vnd.lotus-notes" => ".nsf",
```

```
"application/vnd.lotus-organizer" => ".org",
"application/vnd.lotus-screencam" => ".scm",
"application/vnd.lotus-wordpro" => ".lwp",
"application/vnd.macports.portpkg" => ".portpkg",
"application/vnd.mcd" => ".mcd",
"application/vnd.medcalldata" => ".mcl",
"application/vnd.mediastation.cdkey" => ".cdkey",
"application/vnd.mfer" => ".mwf",
"application/vnd.mfmp" => ".mfmp",
"application/vnd.micrografx.flo" => ".flo",
"application/vnd.micrografx.igx" => ".igx",
"application/vnd.mif" => ".mif",
"application/vnd.mobius.daf" => ".daf",
"application/vnd.mobius.dis" => ".dis",
"application/vnd.mobius.mbk" => ".mbk",
"application/vnd.mobius.mqy" => ".mqy",
"application/vnd.mobius.msl" => ".msl",
"application/vnd.mobius.plc" => ".plc",
"application/vnd.mobius.txf" => ".txf",
"application/vnd.mophun.application" => ".mpn",
"application/vnd.mophun.certificate" => ".mpc",
"application/vnd.mozilla.xul+xml" => ".xul",
"application/vnd.ms-artgalry" => ".cil",
"application/vnd.ms-cab-compressed" => ".cab",
"application/vnd.ms-excel" => ".xls",
"application/vnd.ms-excel.addin.macroenabled.12" => ".xlam",
"application/vnd.ms-excel.sheet.binary.macroenabled.12" => ".xlsb",
"application/vnd.ms-excel.sheet.macroenabled.12" => ".xlsm",
"application/vnd.ms-excel.template.macroenabled.12" => ".xltm",
"application/vnd.ms-fontobject" => ".eot",
"application/vnd.ms-htmlhelp" => ".chm",
"application/vnd.ms-ims" => ".ims",
"application/vnd.ms-lrm" => ".lrm",
"application/vnd.ms-officetheme" => ".thmx",
"application/vnd.ms-pki.seccat" => ".cat",
"application/vnd.ms-pki.stl" => ".stl",
"application/vnd.ms-powerpoint" => ".ppt",
"application/vnd.ms-powerpoint.addin.macroenabled.12" => ".ppam",
"application/vnd.ms-powerpoint.presentation.macroenabled.12" => ".pptm",
"application/vnd.ms-powerpoint.slide.macroenabled.12" => ".sldm",
"application/vnd.ms-powerpoint.slideshow.macroenabled.12" => ".ppsm",
"application/vnd.ms-powerpoint.template.macroenabled.12" => ".potm",
"application/vnd.ms-project" => ".mpp",
"application/vnd.ms-word.document.macroenabled.12" => ".docm",
"application/vnd.ms-word.template.macroenabled.12" => ".dotm",
"application/vnd.ms-works" => ".wps",
"application/vnd.ms-wpl" => ".wpl",
```

```
"application/vnd.ms-xpsdocument" => ".xps",
"application/vnd.mseq" => ".mseq",
"application/vnd.musician" => ".mus",
"application/vnd.muvee.style" => ".msty",
"application/vnd.neurolanguage.nlu" => ".nlu",
"application/vnd.noblenet-directory" => ".nnd",
"application/vnd.noblenet-sealer" => ".nns",
"application/vnd.noblenet-web" => ".nnw",
"application/vnd.nokia.n-gage.data" => ".ngdat",
"application/vnd.nokia.n-gage.symbian.install" => ".n-gage",
"application/vnd.nokia.radio-preset" => ".rpst",
"application/vnd.nokia.radio-presets" => ".rpss",
"application/vnd.novadigm.edm" => ".edm",
"application/vnd.novadigm.edx" => ".edx",
"application/vnd.novadigm.ext" => ".ext",
"application/vnd.oasis.opendocument.chart" => ".odc",
"application/vnd.oasis.opendocument.chart-template" => ".otc",
"application/vnd.oasis.opendocument.database" => ".odb",
"application/vnd.oasis.opendocument.formula" => ".odf",
"application/vnd.oasis.opendocument.formula-template" => ".odft",
"application/vnd.oasis.opendocument.graphics" => ".odg",
"application/vnd.oasis.opendocument.graphics-template" => ".otg",
"application/vnd.oasis.opendocument.image" => ".odi",
"application/vnd.oasis.opendocument.image-template" => ".oti",
"application/vnd.oasis.opendocument.presentation" => ".odp",
"application/vnd.oasis.opendocument.presentation-template" => ".otp",
"application/vnd.oasis.opendocument.spreadsheet" => ".ods",
"application/vnd.oasis.opendocument.spreadsheet-template" => ".ots",
"application/vnd.oasis.opendocument.text" => ".odt",
"application/vnd.oasis.opendocument.text-master" => ".odm",
"application/vnd.oasis.opendocument.text-template" => ".ott",
"application/vnd.oasis.opendocument.text-web" => ".oth",
"application/vnd.olpc-sugar" => ".xo",
"application/vnd.oma.dd2+xml" => ".dd2",
"application/vnd.openofficeorg.extension" => ".oxt",
"application/vnd.openxmlformats-officedocument.presentationml.presentation" => ".pptx",
"application/vnd.openxmlformats-officedocument.presentationml.slide" => ".sldx",
"application/vnd.openxmlformats-officedocument.presentationml.slideshow" => ".ppsx",
"application/vnd.openxmlformats-officedocument.presentationml.template" => ".potx",
"application/vnd.openxmlformats-officedocument.spreadsheetml.sheet" => ".xlsx",
"application/vnd.openxmlformats-officedocument.spreadsheetml.template" => ".xltx",
"application/vnd.openxmlformats-officedocument.wordprocessingml.document" => ".docx",
"application/vnd.openxmlformats-officedocument.wordprocessingml.template" => ".dotx",
"application/vnd.osgeo.mapguide.package" => ".mgp",
"application/vnd.osgi.dp" => ".dp",
"application/vnd.palm" => ".pdb",
"application/vnd.pawaafile" => ".paw",
```



```
"application/vnd.pg.format" => ".str",
"application/vnd.pg.osasli" => ".ei6",
"application/vnd.picstel" => ".efif",
"application/vnd.pmi.widget" => ".wg",
"application/vnd.pocketlearn" => ".plf",
"application/vnd.powerbuilder6" => ".pbd",
"application/vnd.previewsystems.box" => ".box",
"application/vnd.proteus.magazine" => ".mgz",
"application/vnd.publishare-delta-tree" => ".qps",
"application/vnd.pvi.ptidl" => ".ptid",
"application/vnd.quark.quarkxpress" => ".qxd",
"application/vnd.realvnc.bed" => ".bed",
"application/vnd.recordare.musicxml" => ".mxl",
"application/vnd.recordare.musicxml+xml" => ".musicxml",
"application/vnd.rig.cryptonote" => ".cryptonote",
"application/vnd.rim.cod" => ".cod",
"application/vnd.rn-realmedia" => ".rm",
"application/vnd.route66.link66+xml" => ".link66",
"application/vnd.sailingtracker.track" => ".st",
"application/vnd.seemail" => ".see",
"application/vnd.sema" => ".sema",
"application/vnd.semd" => ".semd",
"application/vnd.semf" => ".semf",
"application/vnd.shana.informed.formdata" => ".ifm",
"application/vnd.shana.informed.formtemplate" => ".itp",
"application/vnd.shana.informed.interchange" => ".iif",
"application/vnd.shana.informed.package" => ".ipk",
"application/vnd.simtech-mindmapper" => ".twd",
"application/vnd.smaf" => ".mmf",
"application/vnd.smart.teacher" => ".teacher",
"application/vnd.solent.sdkm+xml" => ".sdkm",
"application/vnd.spotfire.dxp" => ".dxp",
"application/vnd.spotfire.sfs" => ".sfs",
"application/vnd.stardivision.calc" => ".sdc",
"application/vnd.stardivision.draw" => ".sda",
"application/vnd.stardivision.impress" => ".sdd",
"application/vnd.stardivision.math" => ".smf",
"application/vnd.stardivision.writer" => ".sdw",
"application/vnd.stardivision.writer-global" => ".sgl",
"application/vnd.stepmania.stepchart" => ".sm",
"application/vnd.sun.xml.calc" => ".sxc",
"application/vnd.sun.xml.calc.template" => ".stc",
"application/vnd.sun.xml.draw" => ".sxd",
"application/vnd.sun.xml.draw.template" => ".std",
"application/vnd.sun.xml.impress" => ".sxi",
"application/vnd.sun.xml.impress.template" => ".sti",
"application/vnd.sun.xml.math" => ".sxm",
```

```
"application/vnd.sun.xml.writer" => ".sxw",
"application/vnd.sun.xml.writer.global" => ".sxc",
"application/vnd.sun.xml.writer.template" => ".stw",
"application/vnd.sus-calendar" => ".sus",
"application/vnd.svd" => ".svd",
"application/vnd.symbian.install" => ".sis",
"application/vnd.syncml.dm+wbxml" => ".bdm",
"application/vnd.syncml.dm+xml" => ".xdm",
"application/vnd.syncml+xml" => ".xsm",
"application/vnd.tao.intent-module-archive" => ".tao",
"application/vnd.tmobile-livetv" => ".tmo",
"application/vnd.trid.tpt" => ".tpt",
"application/vnd.triscape.mxs" => ".mxs",
"application/vnd.trueapp" => ".tra",
"application/vnd.ufdl" => ".ufdl",
"application/vnd.uiq.theme" => ".utz",
"application/vnd.umajin" => ".umj",
"application/vnd.unity" => ".unityweb",
"application/vnd.uoml+xml" => ".uoml",
"application/vnd.vcx" => ".vcx",
"application/vnd.visio" => ".vsd",
"application/vnd.visionary" => ".vis",
"application/vnd.vsf" => ".vsf",
"application/vnd.wap.wbxml" => ".wbxml",
"application/vnd.wap.wmlc" => ".wmlc",
"application/vnd.wap.wmlscriptc" => ".wmlsc",
"application/vnd.webturbo" => ".wtb",
"application/vnd.wolfram.player" => ".nbp",
"application/vnd.wordperfect" => ".wpd",
"application/vnd.wqd" => ".wqd",
"application/vnd.wt.stf" => ".stf",
"application/vnd.xara" => ".xar",
"application/vnd.xfdl" => ".xfdl",
"application/vnd.yamaha.hv-dic" => ".hvd",
"application/vnd.yamaha.hv-script" => ".hvs",
"application/vnd.yamaha.hv-voice" => ".hvp",
"application/vnd.yamaha.openscoreformat" => ".osf",
"application/vnd.yamaha.openscoreformat.osfpvg+xml" => ".osfpvg",
"application/vnd.yamaha.smaf-audio" => ".saf",
"application/vnd.yamaha.smaf-phrase" => ".spf",
"application/vnd.yellowriver-custom-menu" => ".cmp",
"application/vnd.zul" => ".zir",
"application/vnd.zzazz.deck+xml" => ".zaz",
"application/voicexml+xml" => ".vxml",
"application/widget" => ".wgt",
"application/winhelp" => ".hlp",
"application/wsdl+xml" => ".wsdl",
```

```
"application/wspolicy+xml" => ".wspolicy",
"application/x-7z-compressed" => ".7z",
"application/x-abiword" => ".abw",
"application/x-ace-compressed" => ".ace",
"application/x-authorware-bin" => ".aab",
"application/x-authorware-map" => ".aam",
"application/x-authorware-seg" => ".aas",
"application/x-bcpio" => ".bcpio",
"application/x-bittorrent" => ".torrent",
"application/x-bzip" => ".bz",
"application/x-bzip2" => ".bz2",
"application/x-cdlink" => ".vcd",
"application/x-chat" => ".chat",
"application/x-chess-pgn" => ".pgn",
"application/x-cpio" => ".cpio",
"application/x-csh" => ".csh",
"application/x-debian-package" => ".deb",
"application/x-director" => ".dir",
"application/x-doom" => ".wad",
"application/x-dtbnx+xml" => ".ncx",
"application/x-dtbook+xml" => ".dtb",
"application/x-dtbresource+xml" => ".res",
"application/x-dvi" => ".dvi",
"application/x-font-bdf" => ".bdf",
"application/x-font-ghostscript" => ".gsf",
"application/x-font-linux-psf" => ".psf",
"application/x-font-otf" => ".otf",
"application/x-font-pcf" => ".pcf",
"application/x-font-snf" => ".snf",
"application/x-font-ttf" => ".ttf",
"application/x-font-type1" => ".pfa",
"application/x-font-woff" => ".woff",
"application/x-futuresplash" => ".spl",
"application/x-gnumeric" => ".gnumeric",
"application/x-gtar" => ".gtar",
"application/x-hdf" => ".hdf",
"application/x-java-jnlp-file" => ".jnlp",
"application/x-latex" => ".latex",
"application/x-mobipocket-ebook" => ".prc",
"application/x-ms-application" => ".application",
"application/x-ms-wmd" => ".wmd",
"application/x-ms-wmz" => ".wmz",
"application/x-ms-xbap" => ".xbap",
"application/x-msaccess" => ".mdb",
"application/x-msbinder" => ".obd",
"application/x-mscardfile" => ".crd",
"application/x-msclip" => ".clp",
```

```
"application/x-msdownload" => ".exe",
"application/x-msmediaview" => ".mxb",
"application/x-msmetafile" => ".wmf",
"application/x-msmoney" => ".mny",
"application/x-mspublisher" => ".pub",
"application/x-msschedule" => ".scd",
"application/x-msterminal" => ".trm",
"application/x-mswrite" => ".wri",
"application/x-netcdf" => ".nc",
"application/x-pkcs12" => ".p12",
"application/x-pkcs7-certificates" => ".p7b",
"application/x-pkcs7-certreqresp" => ".p7r",
"application/x-rar-compressed" => ".rar",
"application/x-sh" => ".sh",
"application/x-shar" => ".shar",
"application/x-shockwave-flash" => ".swf",
"application/x-silverlight-app" => ".xap",
"application/x-stuffit" => ".sit",
"application/x-stuffitx" => ".sitx",
"application/x-sv4cpio" => ".sv4cpio",
"application/x-sv4crc" => ".sv4crc",
"application/x-tar" => ".tar",
"application/x-tcl" => ".tcl",
"application/x-tex" => ".tex",
"application/x-tex-tfm" => ".tfm",
"application/x-texinfo" => ".texinfo",
"application/x-ustar" => ".ustar",
"application/x-wais-source" => ".src",
"application/x-x509-ca-cert" => ".der",
"application/x-xfig" => ".fig",
"application/x-xpinstall" => ".xpi",
"application/xcap-diff+xml" => ".xdf",
"application/xenc+xml" => ".xenc",
"application/xhtml+xml" => ".xhtml",
"application/xml" => ".xml",
"application/xml-dtd" => ".dtd",
"application/xop+xml" => ".xop",
"application/xslt+xml" => ".xslt",
"application/xspf+xml" => ".xspf",
"application/xv+xml" => ".mxml",
"application/yang" => ".yang",
"application/yin+xml" => ".yin",
"application/zip" => ".zip",
"audio/adpcm" => ".adp",
"audio/basic" => ".au",
"audio/midi" => ".mid",
"audio/mp4" => ".mp4a",
```

```
"audio/mpeg" => ".mp3",
"audio/ogg" => ".oga",
"audio/vnd.dece.audio" => ".uva",
"audio/vnd.digital-winds" => ".eol",
"audio/vnd.dra" => ".dra",
"audio/vnd.dts" => ".dts",
"audio/vnd.dts.hd" => ".dtshd",
"audio/vnd.lucent.voice" => ".lvp",
"audio/vnd.ms-playready.media.pya" => ".pya",
"audio/vnd.nuera.ecelp4800" => ".ecelp4800",
"audio/vnd.nuera.ecelp7470" => ".ecelp7470",
"audio/vnd.nuera.ecelp9600" => ".ecelp9600",
"audio/vnd.rip" => ".rip",
"audio/webm" => ".weba",
"audio/x-aac" => ".aac",
"audio/x-aiff" => ".aif",
"audio/x-mpegurl" => ".m3u",
"audio/x-ms-wax" => ".wax",
"audio/x-ms-wma" => ".wma",
"audio/x-pn-realaudio" => ".ram",
"audio/x-pn-realaudio-plugin" => ".rmp",
"audio/x-wav" => ".wav",
"chemical/x-cdx" => ".cdx",
"chemical/x-cif" => ".cif",
"chemical/x-cmdf" => ".cmdf",
"chemical/x-cml" => ".cml",
"chemical/x-csml" => ".csml",
"chemical/x-xyz" => ".xyz",
"image/bmp" => ".bmp",
"image/cgm" => ".cgm",
"image/g3fax" => ".g3",
"image/gif" => ".gif",
"image/ief" => ".ief",
"image/jpeg" => ".jpeg",
"image/ktx" => ".ktx",
"image/png" => ".png",
"image/prs.btif" => ".btif",
"image/svg+xml" => ".svg",
"image/tiff" => ".tiff",
"image/vnd.adobe.photoshop" => ".psd",
"image/vnd.dece.graphic" => ".uvi",
"image/vnd.djvu" => ".djvu",
"image/vnd.dvb.subtitle" => ".sub",
"image/vnd.dwg" => ".dwg",
"image/vnd.dxf" => ".dxf",
"image/vnd.fastbidsheet" => ".fbs",
"image/vnd.fpx" => ".fpx",
```

```
"image/vnd.fst" => ".fst",
"image/vnd.fujixerox.edmics-mmr" => ".mmr",
"image/vnd.fujixerox.edmics-rlc" => ".rlc",
"image/vnd.ms-modi" => ".mdi",
"image/vnd.net-fpx" => ".npx",
"image/vnd.wap.wbmp" => ".wbmp",
"image/vnd.xiff" => ".xif",
"image/webp" => ".webp",
"image/x-cmu-raster" => ".ras",
"image/x-cmx" => ".cmx",
"image/x-freehand" => ".fh",
"image/x-icon" => ".ico",
"image/x-pcx" => ".pcx",
"image/x-pict" => ".pic",
"image/x-portable-anymap" => ".pnm",
"image/x-portable-bitmap" => ".pbm",
"image/x-portable-graymap" => ".pgm",
"image/x-portable-pixmap" => ".ppm",
"image/x-rgb" => ".rgb",
"image/x-xbitmap" => ".xbm",
"image/x-xpixmap" => ".xpm",
"image/x-xwindowdump" => ".xwd",
"message/rfc822" => ".eml",
"model/iges" => ".igs",
"model/mesh" => ".msh",
"model/vnd.collada+xml" => ".dae",
"model/vnd.dwf" => ".dwf",
"model/vnd.gdl" => ".gdl",
"model/vnd.gtw" => ".gtw",
"model/vnd.mts" => ".mts",
"model/vnd.vtu" => ".vtu",
"model/vrml" => ".wrl",
"text/calendar" => ".ics",
"text/css" => ".css",
"text/csv" => ".csv",
"text/html" => ".html",
"text/n3" => ".n3",
"text/plain-bas" => ".par",
"text/prs.lines.tag" => ".dsc",
"text/richtext" => ".rtx",
"text/sgml" => ".sgml",
"text/tab-separated-values" => ".tsv",
"text/troff" => ".t",
"text/turtle" => ".ttl",
"text/uri-list" => ".uri",
"text/vnd.curl" => ".curl",
"text/vnd.curl.dcurl" => ".dcurl",
```

```
"text/vnd.curl.mcurl" => ".mcurl",
"text/vnd.curl.scurl" => ".scurl",
"text/vnd.fly" => ".fly",
"text/vnd.fmi.flexstor" => ".flx",
"text/vnd.graphviz" => ".gv",
"text/vnd.in3d.3dml" => ".3dml",
"text/vnd.in3d.spot" => ".spot",
"text/vnd.sun.j2me.app-descriptor" => ".jad",
"text/vnd.wap.wml" => ".wml",
"text/vnd.wap.wmlscript" => ".wmls",
"text/x-asm" => ".s",
"text/x-c" => ".c",
"text/x-fortran" => ".f",
"text/x-java-source,java" => ".java",
"text/x-pascal" => ".p",
"text/x-setext" => ".etx",
"text/x-uuencode" => ".uu",
"text/x-vcalendar" => ".vcs",
"text/x-vcard" => ".vcf",
"text/xml" => ".xml",
"text/yaml" => ".yaml",
"video/3gpp" => ".3gp",
"video/3gpp2" => ".3g2",
"video/h261" => ".h261",
"video/h263" => ".h263",
"video/h264" => ".h264",
"video/jpeg" => ".jpgv",
"video/jpm" => ".jpm",
"video/mj2" => ".mj2",
"video/mp4" => ".mp4",
"video/mpeg" => ".mpeg",
"video/ogg" => ".ogg",
"video/quicktime" => ".qt",
"video/vnd.dece.hd" => ".uvh",
"video/vnd.dece.mobile" => ".uvm",
"video/vnd.dece.pd" => ".uvp",
"video/vnd.dece.sd" => ".uvs",
"video/vnd.dece.video" => ".uvv",
"video/vnd.fvt" => ".fvt",
"video/vnd.mpegurl" => ".mxu",
"video/vnd.ms-playready.media.pyv" => ".pyv",
"video/vnd.uvu.mp4" => ".uvu",
"video/vnd.vivo" => ".viv",
"video/webm" => ".webm",
"video/x-f4v" => ".f4v",
"video/x-fli" => ".fli",
"video/x-flv" => ".flv",
```

```
"video/x-m4v" => ".m4v",
"video/x-ms-asf" => ".asf",
"video/x-ms-wm" => ".wm",
"video/x-ms-wmv" => ".wmv",
"video/x-ms-wmx" => ".wmx",
"video/x-ms-wvx" => ".wvx",
"video/x-msvideo" => ".avi",
"video/x-sgi-movie" => ".movie",
"x-conference/x-cooltalk" => ".ice"
);
public function __construct($url = null, $header = null, $cookie = null);
public function SetEncodeURL($encode_url);
}
```

**\$url**

String value to describe a real internet resource location.

**\$source**

String value to save the original internet resource location.

**\$cookie**

String format as "A=01;B=02;C=03" for HTTP cookies.

**\$username**

HTTP basic authentication user account.

**\$password**

HTTP basic authentication user password.

**\$filename**

String value to describe a filename will be saved. format as "\$base\_name.\$ext\_name"

**\$filesize**

Integer value of total file size in bytes.

**\$base\_name**

String value.

**\$post\_data**

String format as "a=1&b=2" for HTTP POST data.

**\$ext\_name**

String value.



**\$is\_folder**

Boolean value to describe a FTP resource is folder or not.

**\$refresh\_time**

Integer value to tell Download Station how many seconds should update this DownloadLink. 0 means infinite.

**\$header**

A string list of HTTP request headers. Must format as "x-client-data: CI62yQ".

**Ajax**

Processing URL requests and responses is complex. Download Station has implemented an Ajax class to emulate ExtJS ajax requests. In many cases, websites will use local cookies to keep some information and verify them to remote servers. So, Ajax will store and override existing cookie values continuously until developers use the ResetCookie() method to clean up the cookie value. Developers can also override cookies without ResetCookie() using the \$options parameter, that behavior is more like a website using JavaScript to create a cookie value. The Ajax request \$options and \$callback as below.

```
final class Ajax {  
  
    const AGENT = "Mozilla/5.0 (Macintosh; Intel Mac OS X 10_9_1) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/32.0.1700.107 Safari/537.36";  
  
    /*  
     * Cleanup cookie value.  
     */  
  
    public function ResetCookie();  
  
    /*  
     * Emulate ExtJS ajax to do HTTP/FTP request.  
     * If give non null $callback value will feedback  
     * request header, response header, cookie value,  
     * content data and last redirect url.  
     *  
     * @param {array} $options An object containing properties which are used as parameters to the request.  
     * @param {callback} $callback The function to be called upon receipt of response.  
     * @return {boolean}  
     */  
  
    public function Request($options, $callback = null);  
  
}
```

**Options**

Optional	Parameter	Type	Description
Yes	body	boolean	Default is true, if value is false, Ajax will send HTTP HEAD method but not all website support that.
Yes	post	boolean	Default is false, if value is false, Ajax will format params to HTTP GET method otherwise use HTTP POST method.
Yes	params	object	Default is null, An object containing properties which are used as parameters to the request.
Yes	cookie	string array	Default is null, Each element must be paired as "key=value".
Yes	follow	integer	Default is 20, How many url redirect will be accepted.
Yes	header	object	Default is empty, Customize HTTP request header.
Yes	timeout	integer	Default is 20, This value must between 1 and 20 seconds.

### Callback

```

/*
 * @param {string} $request HTTP request header
 * @param {array} $header first received header will be last string element
 * @param {array} $cookie refer to options cookie value
 * @param {string} $body HTTP response data
 * @param {string} $effective_url last HTTP redirect URL
 */
function($request, $header, $cookie, $body, $effective_url);

```

## Develop

### Beginner

When creating an add-on for the first time, ds-addon provides a simple way to create an empty Add-on. In the below example, we choose torrentreactor.net torrent search site to describe how to do so.

```

[/share/CACHEDEV1_DATA/.qpkg/DSv3/usr/sbin] # ./ds-addon -c torrentreactor.net torrentreactor
[/share/CACHEDEV1_DATA/.qpkg/DSv3/usr/sbin] # ls -al addons/torrentreactor.net
drwxr-xr-x  2 admin  administ  4096 Feb 11 09:45 ./
drwxr-xr-x 15 admin  administ  4096 Feb 11 09:45 ../
-rw-r--r--  1 admin  administ   856 Feb 11 09:45 addon.json
-rw-r--r--  1 admin  administ   878 Feb 11 09:45 torrentreactor.net.php

```

Download Station uses domains to register an Add-on. So in the above command, we use torrentreactor.net as the domain name to create a new Add-on and name the PHP class torrentreactor. The ds-addon will generate a default Add-on definition file and PHP program entry.

```

[/share/CACHEDEV1_DATA/.qpkg/DSv3/usr/sbin] # cat addons/torrentreactor.net/addon.json
{
  "author": "",
  "website": "",
  "name": "torrentreactor.net",
  "addon": "torrentreactor.net.php",
  "class": "torrentreactor",
  "hosts": [

```

```
    "torrentreactor.net"
  ],
  "domain": "torrentreactor.net",
  "version": 100,
  "interface": [
    "IRss",
    "ISearch",
    "IVerify",
    "IDownload"
  ],
  "qpkg_dependencies": {
    "DownloadStation": "5.0.0"
  },
  "description": {
    "CZE": "",
    "DAN": "",
    "DUT": "",
    "ENG": "",
    "ESM": "",
    "FIN": "",
    "FRE": "",
    "GER": "",
    "GRK": "",
    "HUN": "",
    "ITA": "",
    "JPN": "",
    "KOR": "",
    "NOR": "",
    "POL": "",
    "POR": "",
    "ROM": "",
    "RUS": "",
    "SCH": "",
    "SPA": "",
    "SWE": "",
    "TCH": "",
    "THA": "",
    "TUR": ""
  }
}
```

We only need implement ISearch for TorrentReactor, so remove others value in above definition. And then we can programming torrentreactor.net support, now.

```
[/share/CACHEDEV1_DATA/.qpkg/DSv3/usr/sbin] # cat addons/torrentreactor.net/addon.json
{
  "author": "QNAP Systems, Inc.",
  "website": "http://www.qnap.com",
```

```

    "name": "TorrentReactor",
    "addon": "torrentreactor.net.php",
    "class": "torrentreactor",
    "hosts": [
        "torrentreactor.net"
    ],
    "domain": "torrentreactor.net",
    "version": 101,
    "interface": [
        "ISearch"
    ],
    "qpkg_dependencies": {
        "DownloadStation": "5.0.0"
    },
    "description": {
        "ENG": "Torrentreactor is one of the largest torrent indexers on the Web.",
        "TCH": "Torrentreactor 是一個最大的種子索引站台"
    }
}

```

## Programming

```

[/share/CACHEDEV1_DATA/.qpkg/DSv3/usr/sbin] # cat addons/torrentreactor.net/torrentreactor.net.php
<?php
class torrentreactor implements ISite, ISearch {
    const SITE = "http://www.torrentreactor.net";
    private $url;
    public function __construct($url = null, $username = null, $password = null, $meta = null) {
        $this->url = $url;
    }
    static function UnitSize($unit) {
        switch ($unit) {
            case "KB": return 1000;
            case "MB": return 1000000;
            case "GB": return 1000000000;
            case "TB": return 1000000000000;
            default: return 1;
        }
    }
    public function Search($keyword, $limit, $category) {
        $page = 0;
        $ajax = new Ajax();
        $found = array();
        $success = function ($_, $_, $_, $body, $_) use(&$page, &$found, &$limit) {
            preg_match(
                "`<table class=\"col-sm-12\">.*</table>`siU",
                $body,
                $body
            );
        };
    }
}

```

```

);
if (!$body) {
    return ($page = false);
}
$body = html_entity_decode($body[0], ENT_QUOTES, "UTF-8");
preg_match_all(
    "\`".
    "<td class=\"date\">(P<time>.*).*".
    "<a.*href=\"(P<link>/torrents/.*)\">(P<name>.*)</a>.*".
    "<td class=\"buttons\">.*href=\".*url=(P<enclosure_url>http.*)\".*".
    "<td class=\"size\">(P<size>.*)[ | ](P<unit>.*).*".
    "<td class=\"seeders\">(P<seeds>\d+).*".
    "<td class=\"leechers\">(P<leechers>\d+).*".
    "<td class=\"category\">(P<category>.*).*".
    "<td class=\"health\">.*".
    "`siU",
    $body,
    $result
);
if (!$result || ($slen = sizeof($result["name"])) == 0) {
    return ($page = false);
}
for ($i = 0 ; $i < $slen ; ++$i) {
    $tlink = new SearchLink;
    $tlink->src          = "torrentreactor.net";
    $tlink->link         = torrentreactor::SITE . $result["link"][$i];
    $tlink->name         = strip_tags($result["name"][$i]);
    $tlink->size         = ($result["size"][$i] + 0) * torrentreactor::UnitSize($result["unit"][$i]);
    $tlink->time         = DateTime::createFromFormat("H:i", $result["time"][$i]);
    if (!$tlink->time) {
        $tlink->time     = DateTime::createFromFormat("M d", $result["time"][$i]);
    }
    $tlink->seeds        = $result["seeds"][$i] + 0;
    $tlink->peers        = $result["leechers"][$i] + 0;
    $tlink->category     = strtolower($result["category"][$i]);
    $tlink->enclosure_url = urldecode($result["enclosure_url"][$i]);
    $found []= $tlink;
    if (count($found) >= $limit) {
        return ($page = false);
    }
}
++$page;
};
while ($page !== false && count($found) < $limit) {
    $request = array(
        "url"      => "http://www.torrentreactor.net/torrent-search/$keyword/" . $page * 35,
        "body"     => true,
    );
}

```

```

        "params" => array(
            "ajax" => "torrent-list"
        )
    );
    if (!$ajax->request($request, $success)) {
        break;
    }
}
return $found;
}
}
?>

```

Whatever kind of Add-on, ISite is the basic interface invoked by Download Station. We also implement ISearch interface in above code. The ISite interface only defines a class constructor method. Every time Download Station invokes an Add-on will give the URL. If the Add-on supports IVerify and the user has set his username and password, Download Station will pass through the username and password. In the above torrentreactor.net.php sample code we make a private variable \$url to save the URL value inside the torrentreactor object.

```

private $url;
public function __construct($url = null, $username = null, $password = null, $meta = null) {
    $this->url = $url;
}

```

Website response data is very important for Download Station. A Search(\$keyword, \$limit, \$category) method should be implemented in the ISearch interface. In Search(), developers must format data and combine them into a SearchLink array. After Download Station successfully verifies this SearchLink array, it will transfer the array to JSON format and respond to the front end.

```

static function UnitSize($unit) {
    switch ($unit) {
        case "KB": return 1000;
        case "MB": return 1000000;
        case "GB": return 1000000000;
        case "TB": return 1000000000000;
        default: return 1;
    }
}

public function Search($keyword, $limit, $category) {
    $page = 0;
    $ajax = new Ajax();
    $found = array();
    $success = function ($_, $_, $_, $body, $_) use (&$page, &$found, &$limit) {
        preg_match(
            "`<table class=\"col-sm-12\">.*</table>`siU",
            $body,
            $body
        );
        if (!$body) {

```

```

        return ($page = false);
    }

    $body = html_entity_decode($body[0], ENT_QUOTES, "UTF-8");
    preg_match_all(
        "`".
        "<td class=\"date\">(P<time>.*).*".
        "<a.*href=\"(P<link>/torrents/.*)\">(P<name>.*</a>.*".
        "<td class=\"buttons\">.*href=\".*url=(P<enclosure_url>http.*)\".*".
        "<td class=\"size\">(P<size>.*)[ | ](P<unit>.*).*".
        "<td class=\"seeders\">(P<seeds>\d+).*".
        "<td class=\"leechers\">(P<leechers>\d+).*".
        "<td class=\"category\">(P<category>.*).*".
        "<td class=\"health\">.*".
        "`siU",
        $body,
        $result
    );

    if (!$result || ($len = sizeof($result["name"])) == 0) {
        return ($page = false);
    }

    for ($i = 0 ; $i < $len ; ++$i) {
        $tlink = new SearchLink;

        $tlink->src          = "torrentreactor.net";
        $tlink->link         = torrentreactor::SITE . $result["link"][$i];
        $tlink->name        = strip_tags($result["name"][$i]);
        $tlink->size        = ($result["size"][$i] + 0) * torrentreactor::UnitSize($result["unit"][$i]);
        $tlink->time        = DateTime::createFromFormat("H:i", $result["time"][$i]);
        if (!$tlink->time) {
            $tlink->time    = DateTime::createFromFormat("M d", $result["time"][$i]);
        }
        $tlink->seeds       = $result["seeds"][$i] + 0;
        $tlink->peers       = $result["leechers"][$i] + 0;
        $tlink->category    = strtolower($result["category"][$i]);
        $tlink->enclosure_url = urldecode($result["enclosure_url"][$i]);
        $found []= $tlink;

        if (count($found) >= $limit) {
            return ($page = false);
        }
    }

    ++$page;
};

while ($page !== false && count($found) < $limit) {
    $request = array(
        "url"      => "http://www.torrentreactor.net/torrent-search/$keyword/" . $page * 35,
        "body"     => true,
        "params"   => array(
            "ajax" => "torrent-list"
        )
    );
}

```

```

    )
};
if (!$ajax->request($request, $success)) {
    break;
}
}
return $found;
}

```

In the Search() method sample code, the Ajax class encapsulates from PHP curl. It will make URL requesting easier. The Ajax section has more details.

Download Station try to invoke ISearch and other implemented methods (IRss, IVerify and IDownload) and verify the return instance format is correct or not. Only passing the Download Station verification makes Download Station use Add-ons correctly.

To test the ISearch implementation via utility can pass following command.

```

[/share/CACHEDEV1_DATA/.qpkg/DSv3/usr/sbin] # ./ds-addon -s
"torrentreactor.net" "7zip" 1
Array
(
    [0] => SearchLink Object
        (
            [src] => torrentreactor.net
            [link] => http://www.torrentreactor.net/
torrents/13815859/7zip-9-22-Beta
            [name] => 7zip 9 22 Beta
            [size] => 2560000
            [time] => 2015/02/11 08:01:00
            [seeds] => 4
            [peers] => 2
            [category] => unsorted
            [enclosure_url] => http://dl7.torrentreactor.net/
download.php?id=12416893&name=7zip+9+22+Beta&
hash=8c694a2f2e031149c2a397300869014375bb40f6&title=7zip 9 22
Beta&hash=8c694a2f2e031149c2a397300869014375bb40f6
        )
    )
)

```

## Release

Download Station will verify Add-on checksum values and signatures during installation. Developers must compress Add-ons to a single file and sign it. An automatic shell ds-addon-pack.sh can make it easy. If have never generated an RSA key. Please follow these steps to make a new one.

```

[/share/CACHEDEV1_DATA/.qpkg/DSv3/usr/sbin] # /usr/bin/openssl genrsa -out private.pem 1024
Generating RSA private key, 1024 bit long modulus
.....+++++
.....+++++
e is 65537 (0x10001)

```



```
[/share/CACHEDEV1_DATA/.qpkg/DSv3/usr/sbin] # /usr/bin/openssl rsa -in private.pem -out public.pem -outform PEM -pubout
writing RSA key
```

```
[/share/CACHEDEV1_DATA/.qpkg/DSv3/usr/sbin] # ls -al
drwxr-xr-x  4 admin  administ  4096 Feb 12 12:51 ./
drwxr-xr-x  3 admin  administ  4096 Feb  6 04:00 ../
drwxr-xr-x 10 admin  administ  4096 Feb 12 09:30 addons/
-rwxr-xr-x  1 admin  administ 20400 Feb 12 09:28 ds-addon*
-rwxr-xr-x  1 admin  administ  2166 Feb 12 09:28 ds-addon-pack.sh*
-rwxr-xr-x  1 admin  administ 482400 Feb 12 09:28 ds.cgi*
-rwxr-xr-x  1 admin  administ 5321312 Feb 12 09:28 dsd*
-rwxr-xr-x  1 admin  administ 120832 Feb 12 09:28 index.cgi*
-rw-r--r--  1 admin  administ   887 Feb 12 12:51 private.pem
-rw-r--r--  1 admin  administ   272 Feb 12 12:51 public.pem
```

The private.pem and public.pem is your RSA key. And next, use ds-addon-pack.sh and RSA key to compress Add-ons and make a signature.

```
[/share/CACHEDEV1_DATA/.qpkg/DSv3/usr/sbin] # ./ds-addon-pack.sh private.pem public.pem addons/torrentreactor.net/
/share/CACHEDEV1_DATA/.qpkg/DSv3/usr/sbin/torrentreactor.net.addon SHA1: 334c632ce9a90fa2a2b7133c02703482b441a923
```

```
[/share/CACHEDEV1_DATA/.qpkg/DSv3/usr/sbin] # ls -al
drwxr-xr-x  4 admin  administ  4096 Feb 12 13:50 ./
drwxr-xr-x  3 admin  administ  4096 Feb  6 04:00 ../
drwxr-xr-x 10 admin  administ  4096 Feb 12 09:30 addons/
-rwxr-xr-x  1 admin  administ 20400 Feb 12 09:28 ds-addon*
-rwxr-xr-x  1 admin  administ  2166 Feb 12 09:28 ds-addon-pack.sh*
-rwxr-xr-x  1 admin  administ 482400 Feb 12 09:28 ds.cgi*
-rwxr-xr-x  1 admin  administ 5321312 Feb 12 09:28 dsd*
-rwxr-xr-x  1 admin  administ 120832 Feb 12 09:28 index.cgi*
-rw-r--r--  1 admin  administ   887 Feb 12 12:51 private.pem
-rw-r--r--  1 admin  administ   272 Feb 12 12:51 public.pem
-rw-r--r--  1 admin  administ 10368 Feb 12 13:50 torrentreactor.net.addon
```

ds-addon-pack.sh will generate a signed Add-on file named torrentreactor.net.addon (SHA1 checksum 334c632ce9a90fa2a2b7133c02703482b441a923). Finally, you can publish the torrentreactor.net.addon and use can use the Download Station Add-on controller to install/upgrade this Add-on file.