Offensive Web Testing Framework Documentation

Release MacinOWTF

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Contents

Contents:

CHAPTER 1

Installation

1.1 Prerequisites

There are few packages which are mandatory before you proceed

- Git client: `sudo apt-get install git`
- Python 2.7, installed by default in most systems

1.2 Installation

There are two ways in which you can proceed:

1.2.1 Manual Installation

Manual installation of OWTF is nothing but cloning the repo and running the owtf setup.

```
git clone https://github.com/owtf/owtf.git
cd owtf/
python setup.py install
```

1.2.2 Docker

Docker automates the task of setting up owtf doing all the bootstraping it needs. Just make sure that you have `docker` and `docker-compose` installed and run:

```
docker-compose up
```

- If you wish to override the environment variables for docker setup, use the file named `owtf.env`

1.3 Advanced Installation

If your distro is not officially supported in the install script, the following packages might not have been installed. So please make sure you atleast have the mandatory packages installed. Almost all the packages can be obtained using package manager of any major distro.

1.3.1 Mandatory

- Postgresql

1.3.2 Optional Packages

- Tor (For Botnet mode)
- Proxychains (For Botnet mode)

1.3.3 Optional Tools

- Curl
- Arachni
- w3af
- Skipfish
- Dirbuster

CHAPTER 2

owtf

2.1 owtf package

2.1.1 Subpackages

owtf.api package

Subpackages

owtf.api.handlers package

Submodules

owtf.api.handlers.base module

owtf.api.handlers.config module

owtf.api.handlers.health module

owtf.api.handlers.index module

owtf.api.handlers.misc module

owtf.api.handlers.plugin module

owtf.api.handlers.report module

owtf.api.handlers.session module

owtf.api.handlers.targets module

owtf.api.handlers.transactions module

owtf.api.handlers.work module

Module contents

Submodules

owtf.api.main module

owtf.api.reporter module

owtf.api.routes module

owtf.api.utils module

owtf.api.utils

class owtf.api.utils.**VersionMatches**(*api_version*)

Bases: tornado.routing.Matcher

Matches path by *version* regex.

match(*request*)

Matches current instance against the request.

Parameters **request** (*httputil.HTTPServerRequest*) – current HTTP request

Returns a dict of parameters to be passed to the target handler (for example, handler_kwargs, path_args, path_kwargs can be passed for proper ~.*web.RequestHandler* instantiation). An empty dict is a valid (and common) return value to indicate a match when the argument-passing features are not used. None must be returned to indicate that there is no match.

Module contents

owtf.cli package

Submodules

owtf.cli.main module

Module contents

owtf.db package

Submodules

owtf.db.database module

owtf.db.models module

Module contents

owtf.filesrv package

Submodules

owtf.filesrv.handlers module

owtf.filesrv.main module

owtf.filesrv.routes module

Module contents

owtf.http package

Submodules

owtf.http.requester module

owtf.http.transaction module

Module contents

owtf.lib package

Submodules

owtf.lib.cli_options module

owtf.lib.cli_options

Main CLI processing machine

owtf.lib.cli_options.**parse_options**(*cli_options*, *valid_groups*, *valid_types*)
Main arguments processing for the CLI

Parameters

- **cli_options** (*dict*) – CLI args Supplied by user
- **valid_groups** (*list*) – Plugin groups to chose from
- **valid_types** (*list*) – Plugin types to chose from

Returns

Return type

owtf.lib.cli_options.**usage**(*error_message*)
Display the usage message describing how to use owtf.

Parameters **error_message** (*str*) – Error message to display

Returns None

Return type None

owtf.lib.exceptions module

owtf.lib.exceptions

Declares the framework exceptions and HTTP errors

exception owtf.lib.exceptions.**APIError**(*status_code=500*, *log_message=None*, **args*, ***kwargs*)
Bases: tornado.web.HTTPError

Equivalent to RequestHandler.HTTPError except for in name

exception owtf.lib.exceptions.**DBIntegrityException**(*value*)
Bases: *owtf.lib.exceptions.FrameworkException*

exception owtf.lib.exceptions.**DatabaseNotRunningException**
Bases: exceptions.Exception

exception owtf.lib.exceptions.**FrameworkAbortException**(*value*)
Bases: *owtf.lib.exceptions.FrameworkException*

exception owtf.lib.exceptions.**FrameworkException**(*value*)
Bases: exceptions.Exception

exception owtf.lib.exceptions.**InvalidActionReference**(*value*)
Bases: *owtf.lib.exceptions.FrameworkException*

exception owtf.lib.exceptions.**InvalidConfigurationReference**(*value*)
Bases: *owtf.lib.exceptions.FrameworkException*

exception owtf.lib.exceptions.**InvalidErrorReference**(*value*)
Bases: *owtf.lib.exceptions.FrameworkException*

exception owtf.lib.exceptions.**InvalidMappingReference**(*value*)
Bases: *owtf.lib.exceptions.FrameworkException*

exception owtf.lib.exceptions.**InvalidMessageReference**(*value*)
Bases: *owtf.lib.exceptions.FrameworkException*

exception owtf.lib.exceptions.**InvalidParameterType**(*value*)
Bases: *owtf.lib.exceptions.FrameworkException*

exception owtf.lib.exceptions.**InvalidSessionReference**(*value*)
Bases: *owtf.lib.exceptions.FrameworkException*

exception owtf.lib.exceptions.**InvalidTargetReference**(*value*)
Bases: *owtf.lib.exceptions.FrameworkException*

exception owtf.lib.exceptions.**InvalidTransactionReference**(*value*)
Bases: *owtf.lib.exceptions.FrameworkException*

exception owtf.lib.exceptions.**InvalidUrlReference**(*value*)
Bases: *owtf.lib.exceptions.FrameworkException*

exception owtf.lib.exceptions.**InvalidWorkReference**(*value*)
Bases: *owtf.lib.exceptions.FrameworkException*

exception owtf.lib.exceptions.**InvalidWorkerReference**(*value*)
Bases: *owtf.lib.exceptions.FrameworkException*

exception owtf.lib.exceptions.**PluginAbortException**(*value*)
Bases: *owtf.lib.exceptions.FrameworkException*

exception owtf.lib.exceptions.**PluginException**
Bases: exceptions.Exception

exception owtf.lib.exceptions.**PluginsAlreadyLoaded**
Bases: *owtf.lib.exceptions.PluginException*

load_plugins() called twice.

exception owtf.lib.exceptions.**PluginsDirectoryDoesNotExist**
Bases: *owtf.lib.exceptions.PluginException*

The specified plugin directory does not exist.

exception owtf.lib.exceptions.**UnreachableTargetException**(*value*)
Bases: *owtf.lib.exceptions.FrameworkException*

exception owtf.lib.exceptions.**UnresolvableTargetException**(*value*)
Bases: *owtf.lib.exceptions.FrameworkException*

owtf.lib.exceptions.**api_assert**(*condition*, **args*, ***kwargs*)
Assertion to fail with if not `condition` Asserts that `condition` is `True`, else raises an `APIError` with the provided `args` and `kwargs` :type condition: bool

owtf.lib.filelock module

owtf.lib.filelock

Implementation of a simple cross-platform file locking mechanism. This is a modified version of code retrieved on 2013-01-01 from http://www.evanfosmark.com/2009/01/cross-platform-file-locking-support-in-python. The original code was released under the BSD License, as is this modified version. Modifications in this version:

- Tweak docstrings for sphinx.
- Accept an absolute path for the protected file (instead of a file name relative to cwd).
- Allow timeout to be None.
- Fixed a bug that caused the original code to be NON-threadsafe when the same FileLock instance was shared by multiple threads in one process. (The original was safe for multiple processes, but not multiple threads in a single process. This version is safe for both cases.)
- Added `purge()` function.
- Added `available()` function.
- Expanded API to mimic `threading.Lock interface`: - `__enter__` always calls `acquire()`, and therefore blocks if `acquire()` was called previously. - `__exit__` always calls `release()`. It is therefore a bug to call `release()` from within a context manager. - Added `locked()` function. - Added blocking parameter to `acquire()` method

taken from https://github.com/ilastik/lazyflow/blob/master/lazyflow/utility/fileLock.py # original version from http://www.evanfosmark.com/2009/01/cross-platform-file-locking-support-in-python/

class owtf.lib.filelock.**FileLock**(*protected_file_path*, *timeout=None*, *delay=1*, *lock_file_contents=None*)

Bases: object

A file locking mechanism that has context-manager support so you can use it in a with statement. This should be relatively cross compatible as it doesn't rely on msvcrt or fcntl for the locking.

exception FileLockException

Bases: exceptions.Exception

acquire(*blocking=True*)

Acquire the lock, if possible. If the lock is in use, and *blocking* is False, return False. Otherwise, check again every *self.delay* seconds until it either gets the lock or exceeds *timeout* number of seconds, in which case it raises an exception.

Parameters **blocking** (*bool*) – File blocked or not

Returns True if lock is acquired, else False

Return type *bool*

available()

Returns True iff the file is currently available to be locked.

Returns True if lockfile is available

Return type *bool*

locked()

Returns True iff the file is owned by THIS FileLock instance. (Even if this returns false, the file could be owned by another FileLock instance, possibly in a different thread or process).

Returns True if file owned by Filelock instance

Return type *bool*

purge()

For debug purposes only. Removes the lock file from the hard disk.

release()

Get rid of the lock by deleting the lockfile. When working in a *with* statement, this gets automatically called at the end.

Returns None

Return type None

owtf.lib.owtf_process module

Module contents

owtf.managers package

Submodules

Submodules

owtf.protocols.smb module

owtf.protocols.smtp module

owtf.protocols.smtp

Description: This is the OWTF SMTP handler, to simplify sending emails.

Module contents

owtf.proxy package

Submodules

owtf.proxy.cache_handler module

owtf.proxy.cache_handler

Inbound Proxy Module developed by Bharadwaj Machiraju (blog.tunnelshade.in) as a part of Google Summer of Code 2013

class owtf.proxy.cache_handler.**CacheHandler**(*cache_dir*, *request*, *cookie_regex*, *blacklist*)
Bases: object

This class will be used by the request handler to either load or dump to cache. Main things that are done here :- * The request_hash is generated here * The file locks are managed here * .rd files are created here

calculate_hash(*callback=None*)
Based on blacklist boolean the cookie regex is used for filtering of cookies in request_hash generation. However the original request is not tampered.

Parameters **callback** – Callback function

Returns

Return type

create_response_object()
Create a proxy response object from cache file

Returns

Return type

dump(*response*)
This function takes in a HTTPResponse object and dumps the request and response data. It also creates a .rd file with same file name

Note: This is used by transaction logger

Parameters **response** – The proxy response

Returns

Return type

load()
This is the function which is called for every request. If file is not found in cache, then a file lock is created for that and a None is returned.

Returns Load a transaction from cache

Return type

class owtf.proxy.cache_handler.**DummyObject**
Bases: object

This class is just used to create a fake response object

owtf.proxy.cache_handler.**request_from_cache**(*file_path*)
A fake request object is created with necessary attributes

Parameters **file_path** (*str*) – The file path for the cache file

Returns

Return type

owtf.proxy.cache_handler.**response_from_cache**(*file_path*)
A fake response object is created with necessary attributes

Parameters **file_path** (*str*) – The file path for the cache file

Returns

Return type

owtf.proxy.gen_cert module

owtf.proxy.gen_cert

Inbound Proxy Module developed by Bharadwaj Machiraju (blog.tunnelshade.in) as a part of Google Summer of Code 2013

owtf.proxy.gen_cert.**gen_signed_cert**(*domain*, *ca_crt*, *ca_key*, *ca_pass*, *certs_folder*)
This function takes a domain name as a parameter and then creates a certificate and key with the domain name(replacing dots by underscores), finally signing the certificate using specified CA and returns the path of key and cert files. If you are yet to generate a CA then check the top comments

Parameters

- **domain** (*str*) – domain for the cert
- **ca_crt** (*str*) – ca.crt file path
- **ca_key** (*str*) – ca.key file path
- **ca_pass** (*str*) – Password for the certificate
- **certs_folder** (*str*) –

Returns Key and cert path

Return type *str*

owtf.proxy.main module

owtf.proxy.proxy module

owtf.proxy.socket_wrapper module

owtf.proxy.socket_wrapper

owtf.proxy.socket_wrapper.**starttls**(*socket*, *domain*, *ca_crt*, *ca_key*, *ca_pass*, *certs_folder*, *success=None*, *failure=None*, *io=None*, ***options*)

Wrap an active socket in an SSL socket.

Taken from https://gist.github.com/weaver/293449/4d9f64652583611d267604531a1d5f8c32ac6b16.

Parameters

- **socket** –
- **domain** –
- **ca_crt** –
- **ca_key** –
- **ca_pass** –
- **certs_folder** –
- **success** –
- **failure** –
- **io** –
- **options** –

Returns

Return type

owtf.proxy.tor_manager module

owtf.proxy.tor_manager

TOR manager module developed by Marios Kourtesis <name.surname@gmail.com>

class owtf.proxy.tor_manager.**TOR_manager**(*args*)

Bases: object

authenticate()

This function is handling the authentication process to TOR control connection.

Returns

Return type

static is_tor_running()

Check if tor is running

Returns True if running, else False

Return type *bool*

static msg_configure_tor()

static msg_start_tor(*self*)

open_connection()
Opens a new connection to TOR control

Returns

Return type

renew_ip()
Sends an NEWNYM message to TOR control in order to renew the IP address

Returns True if IP is renewed, else False

Return type *bool*

run()
Starts a new TOR_control_process which will renew the IP address.

Returns

Return type

tor_control_process()
This will run in a new process in order to renew the IP address after certain time.

Returns None

Return type None

owtf.proxy.transaction_logger module

Module contents

owtf.shell package

Submodules

owtf.shell.async_subprocess module

owtf.shell.blocking_shell module

owtf.shell.interactive_shell module

owtf.shell.pexpect_shell module

Module contents

owtf.utils package

Submodules

owtf.utils.app module

owtf.utils.app

class owtf.utils.app.**Application**(**args*, ***kwargs*)
Bases: tornado.web.Application

owtf.utils.commands module

owtf.utils.commands

owtf.utils.commands.**get_command**(*argv*)
Format command to remove directory and space-separated arguments.

Params list argv Arguments for the CLI.

Returns Arguments without directory and space-separated arguments.

Return type list

owtf.utils.error module

owtf.utils.error

The error handler provides a centralised control for aborting the application and logging errors for debugging later.

owtf.utils.error.**abort_framework**(*message*)
Abort the OWTF framework.

Warning If it happens really early and framework.core.Core has note been instantiated yet, *sys.exit()* is called with error code -1

Parameters **message** (*str*) – Descriptive message about the abort.

Returns full message explaining the abort.

Return type str

owtf.utils.error.**user_abort**(*level*, *partial_output=''*)
This function handles the next steps when a user presses Ctrl-C

Parameters

- **level** (*str*) – The level which was aborted
- **partial_output** (*str*) – Partial output generated by the command or plugin

Returns Message to present to the user

Return type *str*

owtf.utils.error.**get_option_from_user**(*options*)
Give the user options to select

Parameters **options** (*str*) – Set of available options for the user

Returns The different options for the user to choose from

Return type *str*

class owtf.utils.error.**SentryProxy**(*sentry_client*)
Bases: object

Simple proxy for sentry client that logs to stderr even if no sentry client exists.

capture_exception(*exc_info=None*, ***kwargs*)

owtf.utils.error.**get_sentry_client**(*sentry_key=''*)

owtf.utils.error.**log_and_exit_handler**(*signum*, *frame*)

owtf.utils.error.**setup_signal_handlers**()
Setup the handlers

owtf.utils.file module

owtf.utils.file

class owtf.utils.file.**FileOperations**
Bases: object

static codecs_open(**args*, ***kwargs*)
Call the original function while checking for errors. If *owtf_clean* parameter is not explicitely passed or if it is set to *True*, it force OWTF to properly exit.

static create_missing_dirs(**args*, ***kwargs*)
Call the original function while checking for errors. If *owtf_clean* parameter is not explicitely passed or if it is set to *True*, it force OWTF to properly exit.

static dump_file(**args*, ***kwargs*)
Call the original function while checking for errors. If *owtf_clean* parameter is not explicitely passed or if it is set to *True*, it force OWTF to properly exit.

static make_dirs(**args*, ***kwargs*)
Call the original function while checking for errors. If *owtf_clean* parameter is not explicitely passed or if it is set to *True*, it force OWTF to properly exit.

static mkdir(**args*, ***kwargs*)
Call the original function while checking for errors. If *owtf_clean* parameter is not explicitely passed or if it is set to *True*, it force OWTF to properly exit.

static open(**args*, ***kwargs*)
Call the original function while checking for errors. If *owtf_clean* parameter is not explicitely passed or if it is set to *True*, it force OWTF to properly exit.

static rm_tree(**args*, ***kwargs*)
Call the original function while checking for errors. If *owtf_clean* parameter is not explicitely passed or if it is set to *True*, it force OWTF to properly exit.

owtf.utils.file.**catch_io_errors**(*func*)
Decorator on I/O functions. If an error is detected, force OWTF to quit properly.

owtf.utils.file.**clean_temp_storage_dirs**(*owtf_pid*)
Rename older temporary directory to avoid any further confusions.

Returns

Return type None

owtf.utils.file.**cleanup_target_dirs**(*target_url*)
Cleanup the directories for the specific target

Returns None

Return type None

owtf.utils.file.**create_output_dir_target**(*target_url*)
Creates output directories for the target URL

Parameters **target_url** (*str*) – The target URL

Returns None

Return type None

owtf.utils.file.**create_temp_storage_dirs**(*owtf_pid*)
Create a temporary directory in /tmp with pid suffix.

Returns

Return type None

owtf.utils.file.**directory_access**(*path*, *mode*)
Check if a directory can be accessed in the specified mode by the current user.

Parameters

- **path** (*str*) – Directory path.
- **mode** (*str*) – Access type.

Returns Valid access rights

Return type *str*

owtf.utils.file.**get_dir_worker_logs**()
Returns the output directory for the worker logs

Returns Path to output directory for the worker logs

Return type *str*

owtf.utils.file.**get_file_as_list**(*filename*)
Get file contents as a list

Parameters **filename** (*str*) – File path

Returns Output list of the content

Return type *list*

owtf.utils.file.**get_log_path**(*process_name*)
Get the log file path based on the process name :param process_name: Process name :type process_name: *str* :return: Path to the specific log file :rtype: *str*

owtf.utils.file.**get_logs_dir**()
Get log directory by checking if abs or relative path is provided in config file

owtf.utils.file.**get_output_dir**()
Gets the output directory for the session

Returns The path to the output directory

Return type *str*

owtf.utils.file.**get_output_dir_target**()
Returns the output directory for the targets

Returns Path to output directory

Return type *str*

owtf.utils.file.**get_target_dir**(*target_url*)
Gets the specific directory for a target in the target output directory

Parameters **target_url** (*str*) – Target URL for which directory path is needed

Returns Path to the target URL specific directory

Return type *str*

owtf.utils.formatters module

owtf.utils.formatters

CLI string formatting

class owtf.utils.formatters.**ConsoleFormatter**(*fmt=None*, *datefmt=None*)
Bases: logging.Formatter

Custom formatter to show logging messages differently on Console

debug_fmt = '\x1b[92m[*] {}\x1b[0m'

error_fmt = '\x1b[91m[-] {}\x1b[0m'

format(*record*)
Choose format according to record level

Parameters **record** (*str*) – Record to format

Returns Formatted string

Return type *str*

info_fmt = '\x1b[94m[+] {}\x1b[0m'

warn_fmt = '\x1b[93m[!] {}\x1b[0m'

class owtf.utils.formatters.**FileFormatter**(**args*, ***kwargs*)
Bases: logging.Formatter

Custom formatter for log files

owtf.utils.http module

owtf.utils.http

owtf.utils.http.**deep_update**(*source*, *overrides*)
Update a nested dictionary or similar mapping.

Modify source in place.

Return type collections.Mapping

owtf.utils.http.**derive_http_method**(*method*, *data*)
Derives the HTTP method from Data, etc

Parameters

- **method** (*str*) – Method to check

- **data** (*str*) – Data to check

Returns Method found

Return type *str*

owtf.utils.http.**extract_method**(*wrapped_method*)
Gets original method if wrapped_method was decorated

Return type any([types.FunctionType, types.MethodType])

owtf.utils.http.**is_method**(*method*)

owtf.utils.ip module

owtf.utils.ip

owtf.utils.ip.**get_ip_from_hostname**(*hostname*)
Get IP from the hostname

Parameters **hostname** (*str*) – Target hostname

Returns IP address of the target hostname

Return type *str*

owtf.utils.ip.**get_ips_from_hostname**(*hostname*)
Get IPs from the hostname

Parameters **hostname** (*str*) – Target hostname

Returns IP addresses of the target hostname as a list

Return type *list*

owtf.utils.ip.**hostname_is_ip**(*hostname*, *ip*)
Test if the hostname is an IP.

Parameters

- **hostname** (*str*) – the hostname of the target.
- **ip** (*str*) – the IP (v4 or v6) of the target.

Returns `True` if the hostname is an IP, `False` otherwise.

Return type `bool`

owtf.utils.ip.**is_internal_ip**(*ip*)
Parses the input IP and checks if it is a private IP

Parameters **ip** (*str*) – IP address

Returns True if it is a private IP, otherwise False

Return type *bool*

owtf.utils.logger module

owtf.utils.logger

class owtf.utils.logger.**OWTFLogger**
Bases: object

disable_console_logging(***kwargs*)
Disables console logging

Note: Must be called from inside the process because we should remove handler for that root logger. Since we add console handler in the last, we can remove the last handler to disable console logging

Parameters **kwargs** (*dict*) – Additional arguments to the logger

Returns

Return type None

enable_logging(***kwargs*)
Enables both file and console logging

Note:

- process_name <– can be specified in kwargs
- Must be called from inside the process because we are kind of overriding the root logger

Parameters **kwargs** (*dict*) – Additional arguments to the logger

Returns

Return type None

owtf.utils.process module

owtf.utils.process

owtf.utils.process.**check_pid**(*pid*)
Check whether pid exists in the current process table. UNIX only.

Parameters **pid** (*int*) – Pid to check

Returns True if pid exists, else false

Return type *bool*

owtf.utils.pycompat module

owtf.utils.pycompat

Helpers for compatibility between Python 2.x and 3.x.

owtf.utils.pycompat.**iteritems**(*d*, ***kw*)

owtf.utils.pycompat.**iterkeys**(*d*, ***kw*)

owtf.utils.pycompat.**iterlists**(*d*, ***kw*)

owtf.utils.pycompat.**itervalues**(*d*, ***kw*)

owtf.utils.pycompat.**u**(*s*)

owtf.utils.signals module

owtf.utils.signals

Most of it taken from the Flask code.

owtf.utils.strings module

owtf.utils.strings

owtf.utils.strings.**add_to_dict**(*from_dict*, *to_dict*)
Add the items from dict a with copy attribute to dict b

Parameters

- **from_dict** (*dict*) – Dict to copy from
- **to_dict** (*dict*) – Dict to copy to

Returns None

Return type None

owtf.utils.strings.**gen_secure_random_str**()

owtf.utils.strings.**get_as_list**(*key_list*)
Get values for keys in a list

Parameters **key_list** (*list*) – List of keys

Returns List of corresponding values

Return type *list*

owtf.utils.strings.**get_header_list**(*key*)
Get list from a string of values for a key

Parameters **key** (*str*) – Key

Returns List of values

Return type *list*

owtf.utils.strings.**get_random_str**(*len*)
Function returns random strings of length len

Parameters **len** (*int*) – Length

Returns Random generated string

Return type *str*

owtf.utils.strings.**is_convertable**(*value*, *conv*)
Convert a value

Parameters

- **value** –
- **conv** –

Returns

Return type

owtf.utils.strings.**list_to_dict_keys**(*list*)
Convert a list to dict with keys from list items

Parameters **list** (*list*) – list to convert

Returns The newly formed dictionary

Return type *dict*

owtf.utils.strings.**merge_dicts**(*a*, *b*)
Returns a by-value copy contained the merged content of the 2 passed dictionaries

Parameters

- **a** (*dict*) – Dict a
- **b** (*dict*) – Dict b

Returns New merge dict

Return type *dict*

owtf.utils.strings.**multi_replace**(*text*, *replace_dict*)
Recursive multiple replacement function :param text: Text to replace :type text: *str* :param replace_dict: The parameter dict to be replaced with :type replace_dict: *dict* :return: The modified text after replacement :rtype: *str*

owtf.utils.strings.**multi_replace_dict**(*text*, *replace_dict*)
Perform multiple replacements in one go using the replace dictionary in format: { 'search' : 'replace' }

Parameters

- **text** (*str*) – Text to replace
- **replace_dict** (*dict*) – The replacement strings in a dict

Returns *str*

Return type

owtf.utils.strings.**pad_key**(*key*)
Add delimiters.

Parameters **key** (*str*) – Key to pad

Returns Padded key string

Return type *str*

owtf.utils.strings.**paths_exist**(*path_list*)
Check if paths in the list exist

Parameters **path_list** (*list*) – The list of paths to check

Returns True if valid paths, else False

Return type *bool*

owtf.utils.strings.**remove_blanks_list**(*src*)
Removes empty elements from the list

Parameters **src** (*list*) – List

Returns New list without blanks

Return type *list*

owtf.utils.strings.**scrub_output**(*output*)
Remove all ANSI control sequences from the output

Parameters **output** (*str*) – Output to scrub

Returns Scrubbed output

Return type *str*

owtf.utils.strings.**str2bool**(*string*)
Converts a string to a boolean

Parameters **string** (*str*) – String to convert

Returns Boolean equivalent

Return type *bool*

owtf.utils.strings.**str_to_dict**(*string*)
Convert a string to a dict

Parameters **string** (*str*) – String to convert

Returns Resultant dict

Return type *dict*

owtf.utils.strings.**strip_key**(*key*)
Replaces key with empty space

Parameters **key** (*str*) – Key to clear

Returns Empty key

Return type *str*

owtf.utils.strings.**to_str**(*byte*)

owtf.utils.strings.**truncate_lines**(*str*, *num_lines*, *eol='\n'*)
Truncate and remove EOL characters

Parameters

- **str** (*str*) – String to truncate
- **num_lines** (*int*) – Number of lines to process
- **EOL** (*char*) – EOL char

Returns Joined string after truncation

Return type *str*

owtf.utils.strings.**utf8**(*string*)

owtf.utils.strings.**wipe_bad_chars**(*filename*)
The function wipes bad characters from name of output file

Parameters **filename** (*str*) – The file name to scrub

Returns New replaced file filename

Return type *str*

owtf.utils.timer module

owtf.utils.timer

The time module allows the rest of the framework to time how long it takes for certain actions to execute and present this information in both seconds and human-readable form.

class owtf.utils.timer.**Timer**(*datetime_format='%d/%m/%Y-%H:%M'*)

Bases: object

end_timer(*offset='0'*)

Sets the end of the timer

Parameters **offset** (*str*) – Timer index

Returns

Return type None

static get_current_date_time()

Current timestamp

Returns The current time as a timestamp

Return type *datetime*

get_current_date_time_as_str()

Returns a datetime object as a string in a particular format

Returns Datetime object in string form

Return type *str*

get_elapsed_time(*offset='0'*)

Gets the time elapsed between now and start of the timer in Unix epoch

Parameters **offset** (*str*) – Timer index

Returns Time difference

Return type *datetime*

get_elapsed_time_as_str(*offset='0'*)

Returns the time elapsed a nice readable string

Parameters **offset** (*str*) – Timer index

Returns Time elapsed as a string

Return type *str*

get_end_date_time(*offset='0'*)

Get the end time for the timer

Parameters **offset** (*str*) – Timer index

Returns End time for the timer as a timestamp

Return type *datetime*

get_end_date_time_as_str(*offset='0'*)

Get the end time for the timer as a string

Parameters **offset** (*str*) – Timer index

Returns End time for the timer as a string

Return type *str*

get_start_date_time(*offset='0'*)
Get the start time for the timer

Parameters **offset** (*str*) – Timer index

Returns Start time for the timer as a timestamp

Return type *datetime*

get_start_date_time_as_str(*offset='0'*)
Get the start time for the timer as a string

Parameters **offset** (*str*) – Timer index

Returns Start time for the timer as a string

Return type *str*

get_time_as_str(*timedelta*)
Get the time difference as a human readable string

Parameters **timedelta** (*datetime.timedelta*) – Time difference

Returns Human readable form for the timedelta

Return type *str*

get_time_human(*seconds_str*)
Generates the human readable string for the timestamp

Parameters **seconds_str** (*str*) – Unix style timestamp

Returns Timestamp in a human readable string

Return type *str*

start_timer(*offset='0'*)
Adds a start time to the timer

Parameters **offset** (*str*) – Timer index

Returns The start time for the timer

Return type *datetime*

timers = {}

Module contents

2.1.2 Submodules

2.1.3 owtf.config module

owtf.config

The Configuration object parses all configuration files, loads them into memory, derives some settings and provides framework modules with a central repository to get info.

2.1.4 owtf.constants module

owtf.constants

Ranking constants used across the framework.

2.1.5 owtf.core module

2.1.6 owtf.settings module

owtf.settings

It contains all the owtf global configs.

2.1.7 Module contents

CHAPTER 3

Configuration

3.1 Database Configuration

3.1.1 Basic Setup

The connection settings for postgres database are present in `~/.owtf/db.yaml` or `owtf/settings.py`.

```
DATABASE_IP: 127.0.0.1
DATABASE_PORT: 5432
DATABASE_NAME: owtfdb
DATABASE_USER: owtf_db_user
DATABASE_PASS: random_password
```

3.2 Framework Configuration (Optional)

Some basic settings like, where should the interface server listen etc.. can be controlled from a config file present at `~/.owtf/conf/framework.yaml`. All the default values are ready by default.

CHAPTER 4

Usage

4.1 Starting OWTF

Warning: Before starting OWTF, make sure you have the postgres database server running. This can be easily ensured by using scripts/db_run.sh

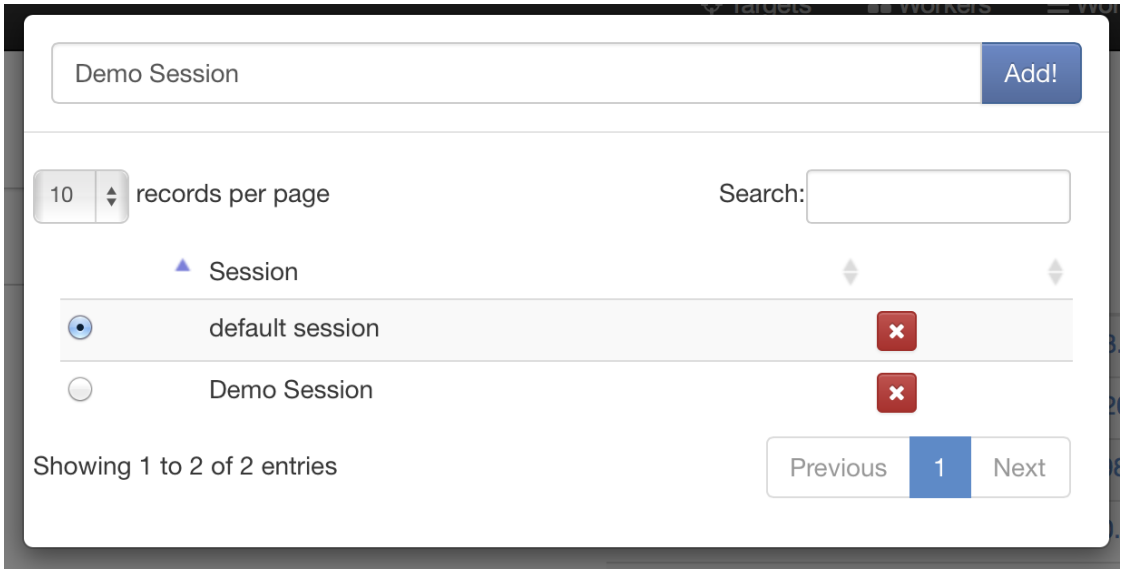
OWTF is controlled and used from a web interface, so you have to launch OWTF from command line and then move on to your favourite browser. OWTF can be launched by

```
./owtf.py
```

The interface url is printed onto the console, so that you can directly click on it

4.2 Using Sessions

In order to keep things simple and separate, OWTF provides support for sessions. A session is your classification of targets. You can have the same target in multiple sessions.



4.3 Managing Targets

The targets page also known as the target manager presents a ton of information. It has three important features

- A textarea to add new targets
- A targets table to go search through targets
- A session manager to manage sessions
- A button to launch plugins against targets
- A button to export targets to a text file - helpful when you have a large number of targets in scope

4.3.1 New Targets

Just add the urls seperated by a new line & press the button to add targets

4.3.2 Remove Targets

To present the information in an orderly fashion, all targets are shown in the form of a table. The labels beside the target name shows the severity of any vulnerability discovered either by OWTF or by user (yes, user can have his own rankings)

4.4 Understanding Plugins

4.4.1 Types of Plugins

There are loads of plugins available in OWTF, but what is interesting is their categorization. All the plugins are categorized into multiple groups and types

- **WEB**

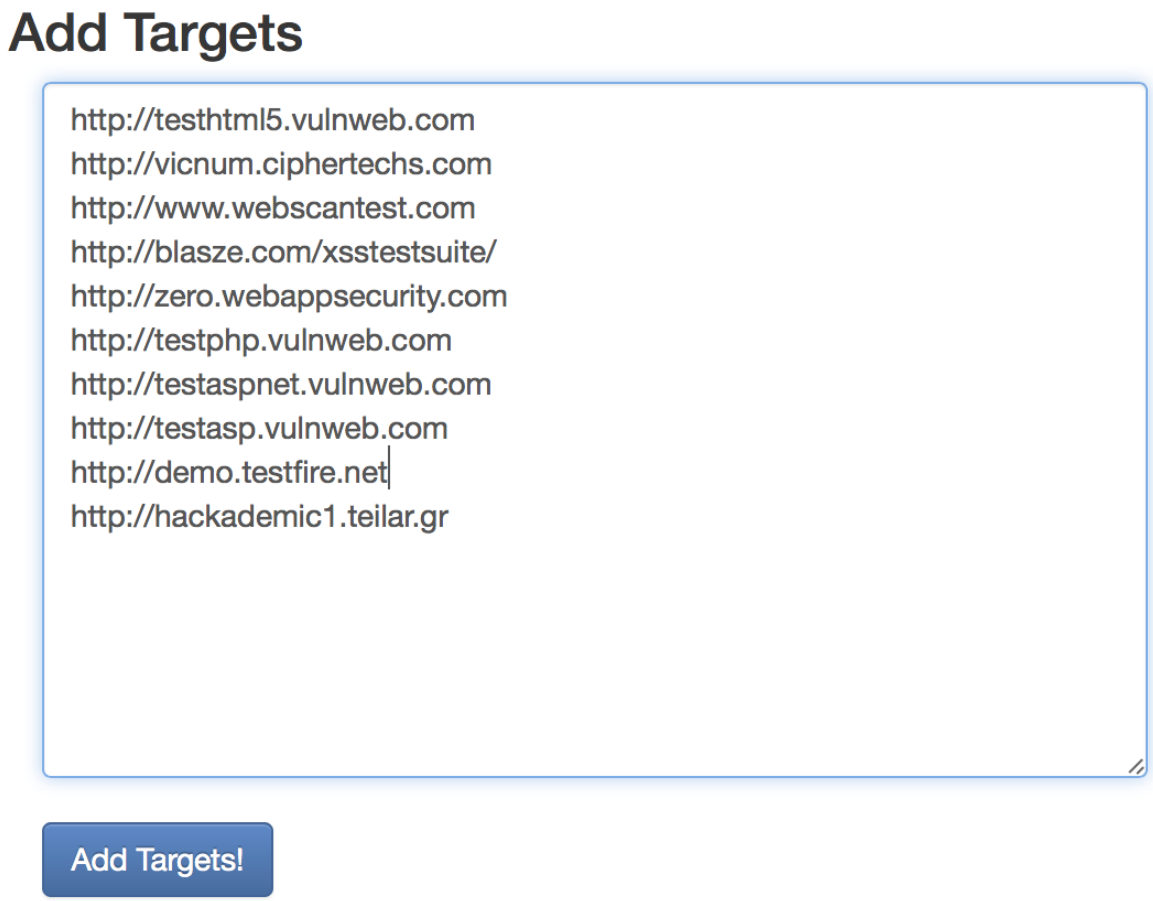


Fig. 1: Multiple targets can be added at once

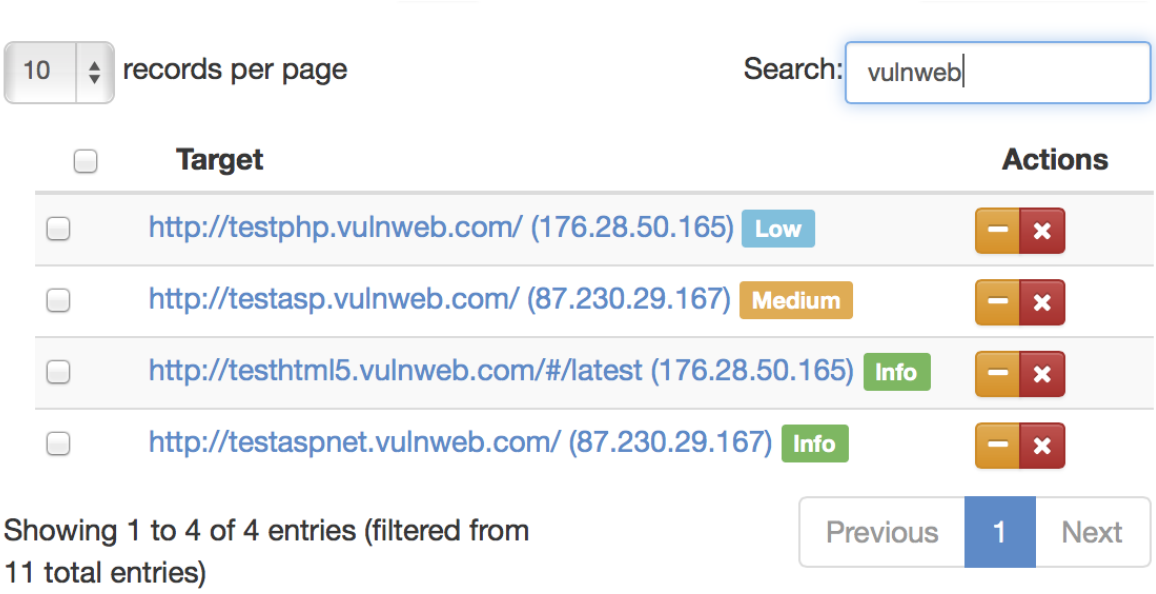


Fig. 2: All the targets in the present session are shown in the targets table. A search box can be used to search among the targets

  - active
  - external
  - grep
  - passive
  - semi-passive
- **NET**
  - active
  - bruteforce
- **AUX**
  - se
  - exploit etc...

4.4.2 Launching Plugins

Plugins can be launched from the targets table or from the individual target report. In order to launch plugins against multiple targets, select the targets from the target manager and launch plugins

☐	OWTF-IG-005	Application Discovery	active	web	Active probing for app discovery
☐	OWTF-WVS-001	Arachni Unauthenticated	active	web	Active Vulnerability Scanning without credentials via Arachni
☐	OWTF-CM-008	HTTP Methods and XST	active	web	Active probing for HTTP methods
☐	OWTF-CM-003	Infrastructure Configuration Management	active	web	Active Probing for fingerprint analysis
☐	OWTF-WVS-002	Nikto Unauthenticated	active	web	Active Vulnerability Scanning without credentials via nikto
☐	OWTF-CM-006	Old Backup and Unreferenced Files	active	web	Active probing for juicy files (DirBuster)
☐	OWTF-WVS-006	Skipfish Unauthenticated	active	web	Active Vulnerability Scanning without credentials via Skipfish
☐	OWTF-CM-001	Testing for SSL-TLS	active	web	Active probing for SSL configuration
☐	OWTF-WSP-001	Visit URLs	active	web	Visit URLs found by other tools, some could be sensitive: need permission
☐	OWTF-WVS-004	W3AF Unauthenticated	active	web	Active Vulnerability Scanning without credentials via w3af
☐	OWTF-WVS-003	Wapiti Unauthenticated	active	web	Active Vulnerability Scanning without credentials via Wapiti
☐	OWTF-IG-004	Web Application Fingerprint	active	web	Active probing for fingerprint analysis
☐	OWTF-WVS-005	Websecurify Unauthenticated	active	web	Active Vulnerability Scanning without credentials via Websecurify

Fig. 3: To know more about any plugin, read the help text present in the last column of plugin launcher

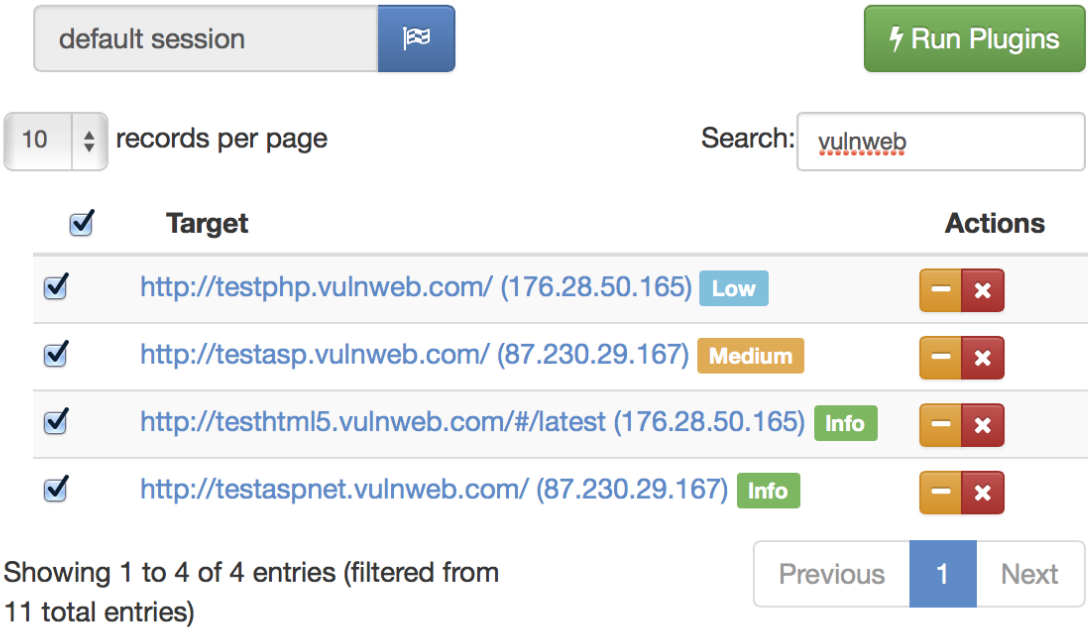


Fig. 4: Multi select targets to launch plugins against them

4.5 Analyzing results

After the execution of plugins, you can navigate to the individual target report to go through the results of the plugins executed for that target. The report looks like this

Individual aspects for going through the report

4.5.1 Understanding plugin report

For better organization, all plugins of the same test code are grouped together. When you open a plugin report and click on a test code, you get to see the related plugins that are run for that target

Each test group has an expandable report. The text of the link consists of there parts

- Code of the test group as per the mapping (Eg: **OWTF-CM-008**)
- Name of the test group as per the mapping (Eg: **HTTP Methods and XST**)
- Pentester translations for the code (Eg: **PUT,TRACE, WebDAV etc..**)

Now if you proceed to select a plugin type, you can see the corresponding report

The details presented in a plugin report are:

- Run time of the plugin
- Time interval during which it was running

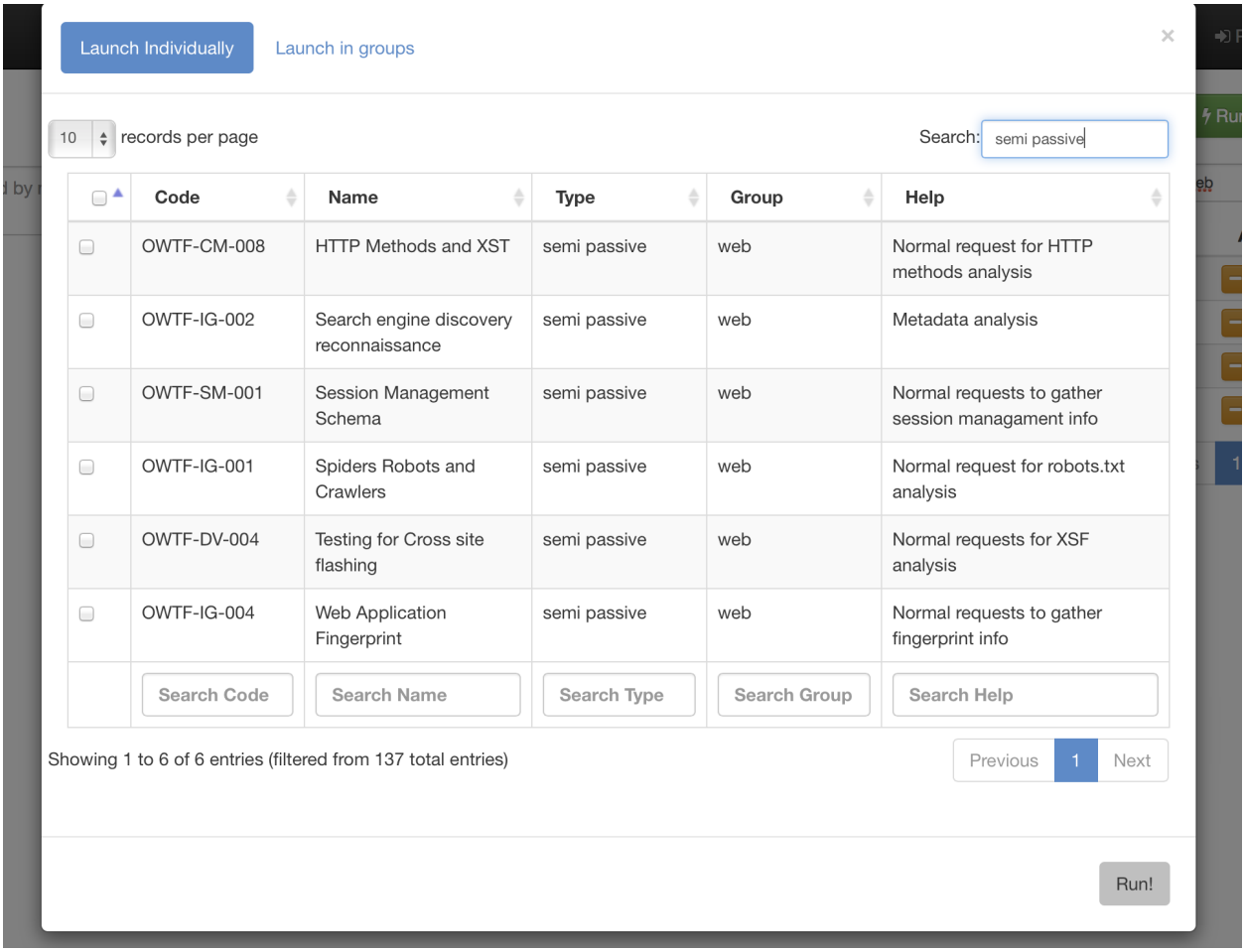


Fig. 5: Search and select plugins individually when needed

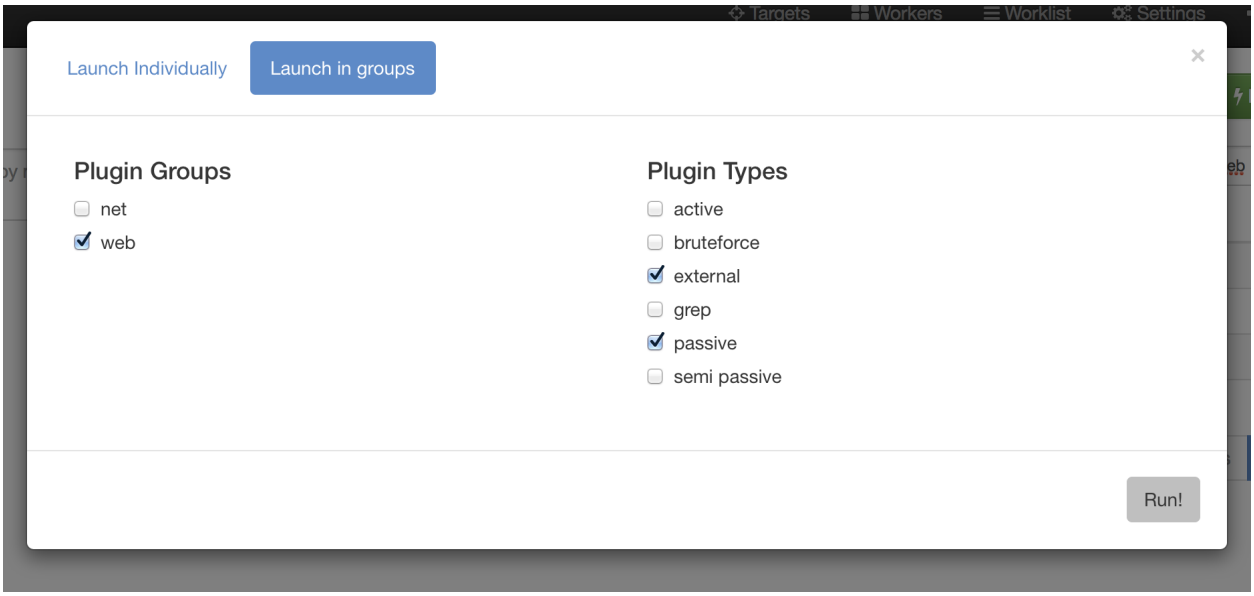


Fig. 6: Select plugins in groups when needed

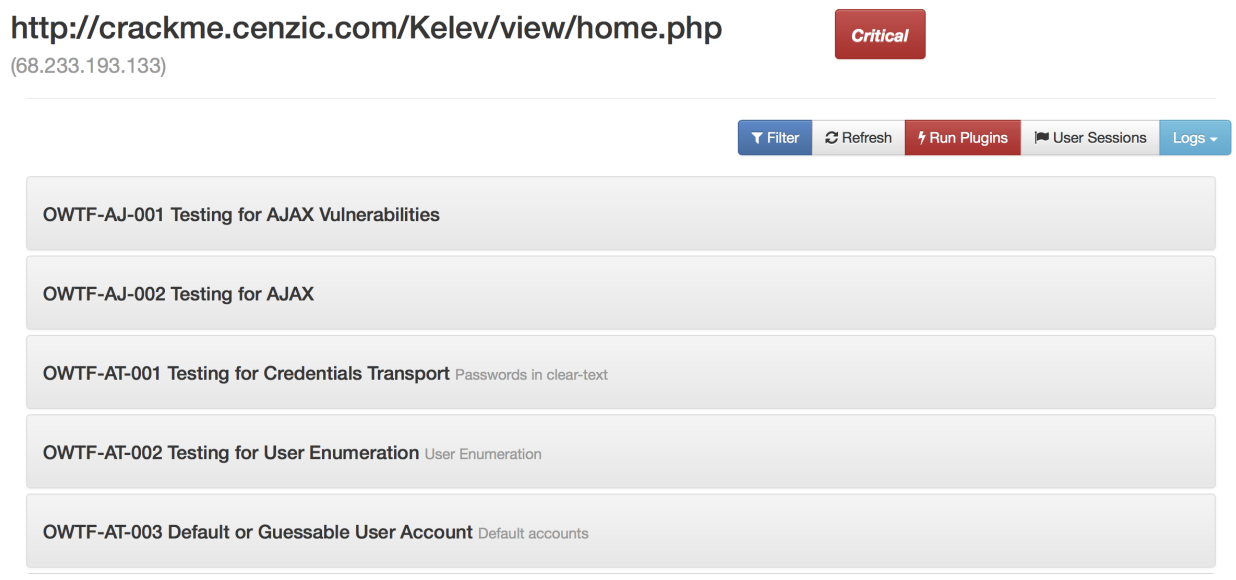
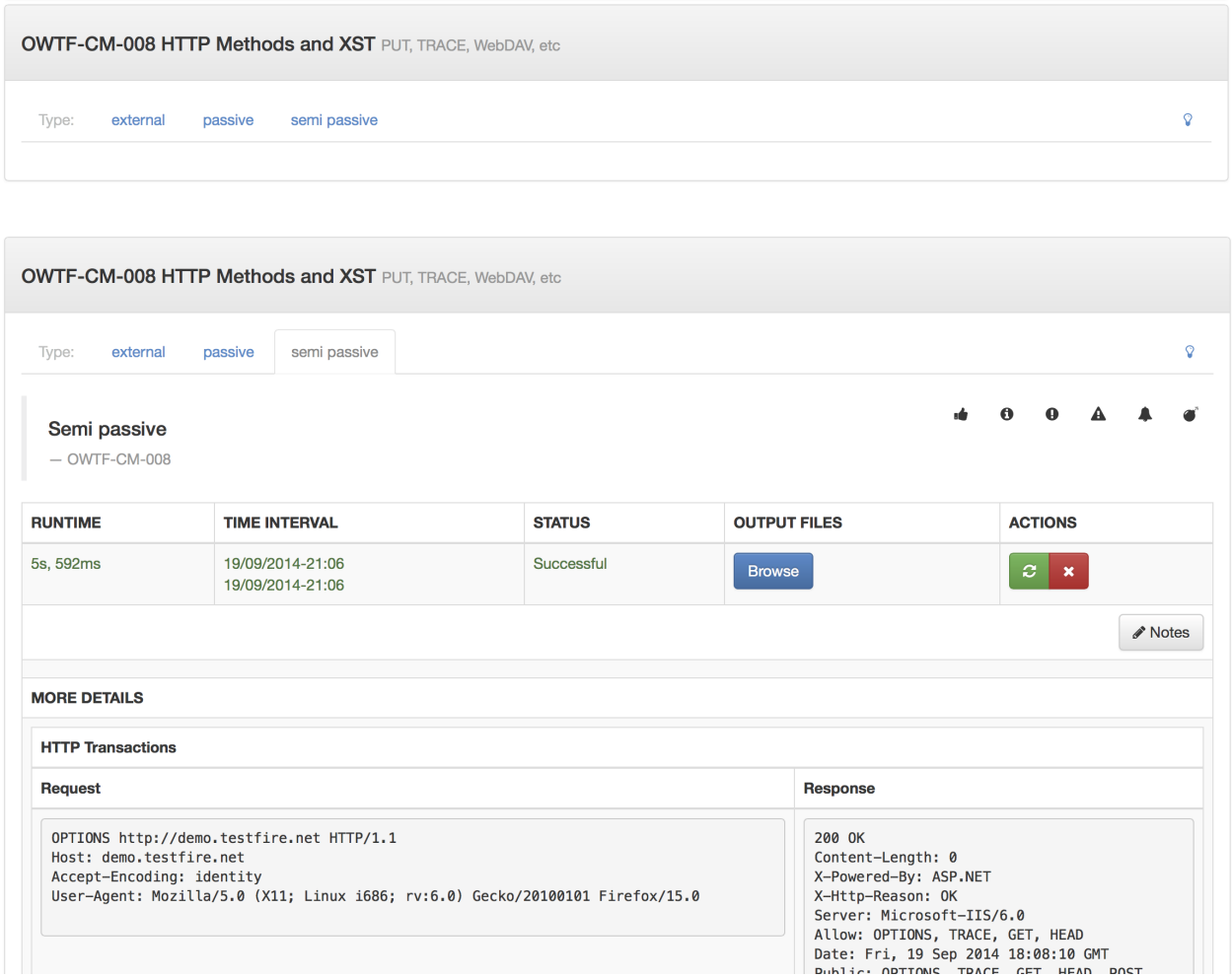


Fig. 7: Target report



- Status of the plugin (i.e if it was aborted by user etc..)
- A button to rerun the plugin
- A button to delete the plugin output
- A button to add notes
- Actual plugin output

If you click on the **Browse** button, then any file saved by the plugin can be seen

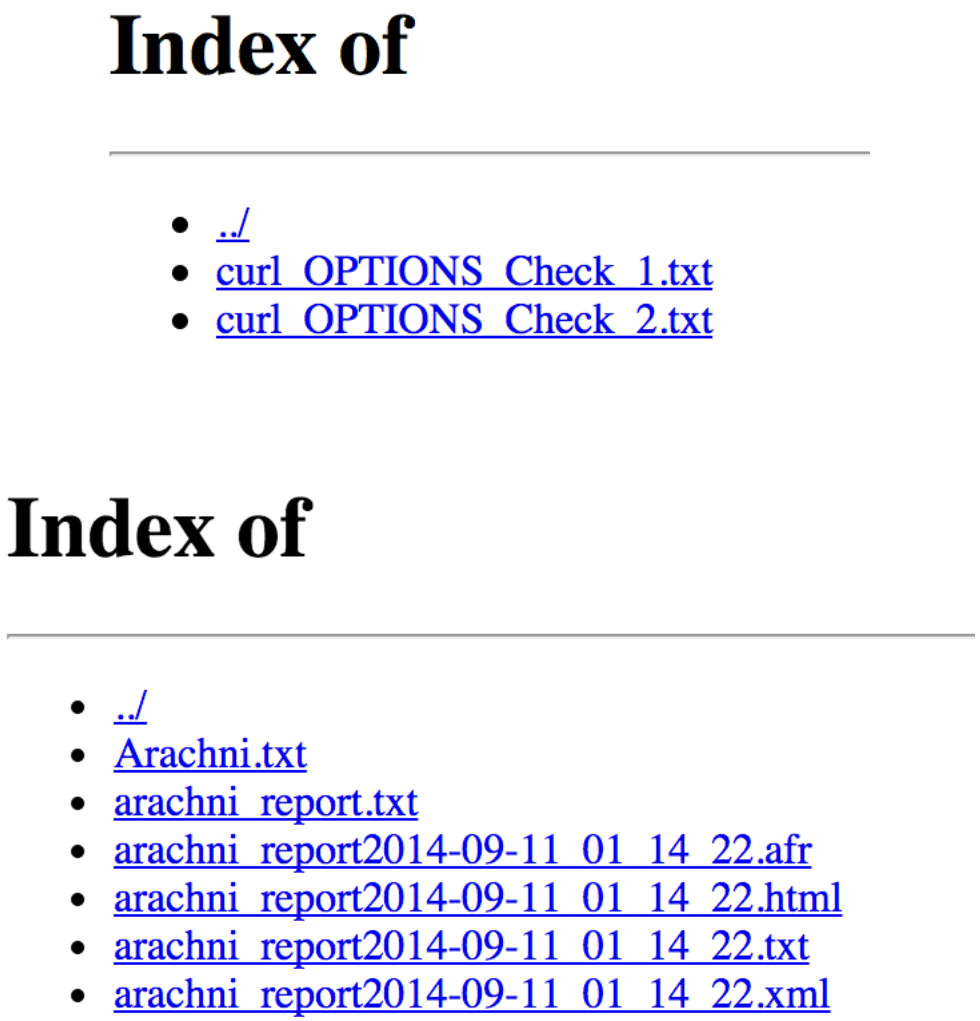


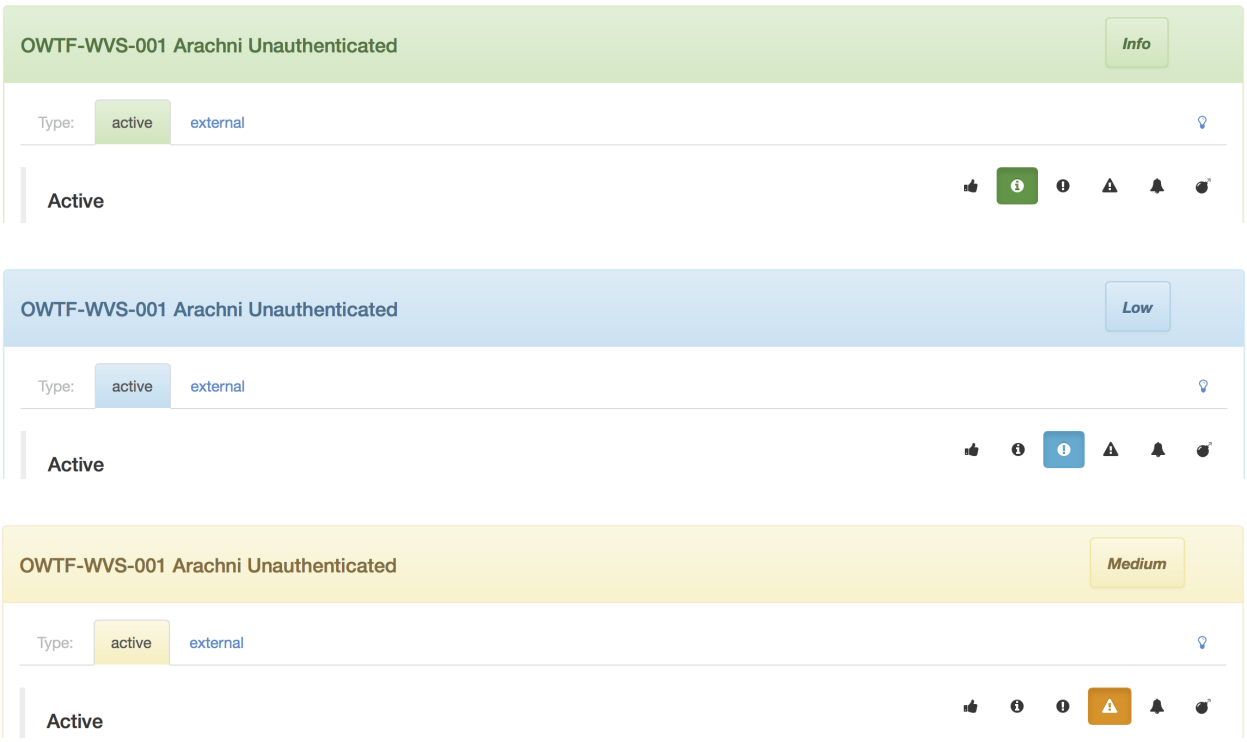
Fig. 8: Files of Arachni active plugin

4.5.2 Saving your analysis

Once you start analyzing the plugin results, there is a need for ranking those findings along with saving some necessary information if needed. OWTF has both these features

Manual Ranking

In order to rank a plugin output, you can use the ranking buttons based on severity



Notes

Ranking is not the only thing, you can also write and save notes as well. Click on the **NOTES** button to open an editor and once you are done, click on the same button to save and close the editor

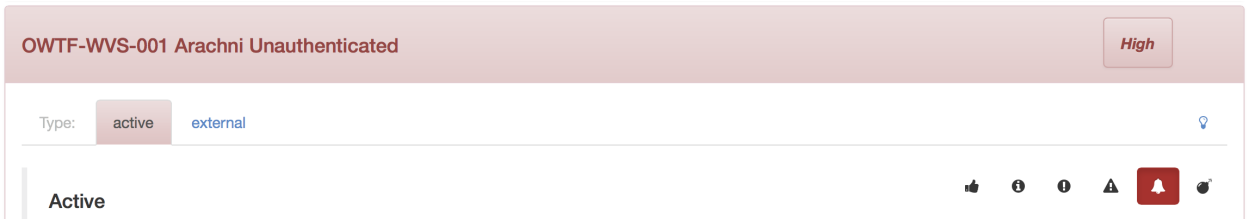
4.5.3 Advanced Filter

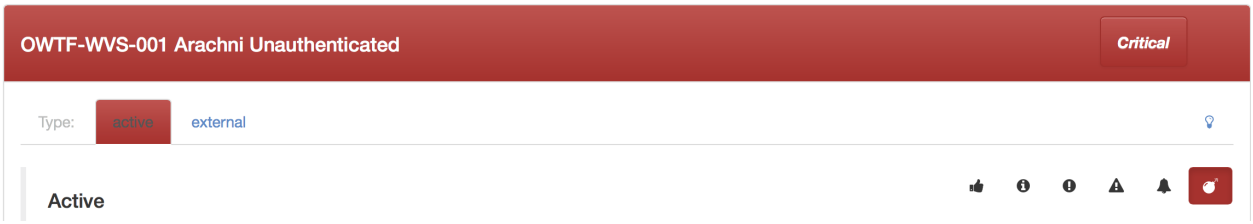
Advanced filter is used to filter the plugin results. Click on the **FILTER** button in the target report and you are good to go

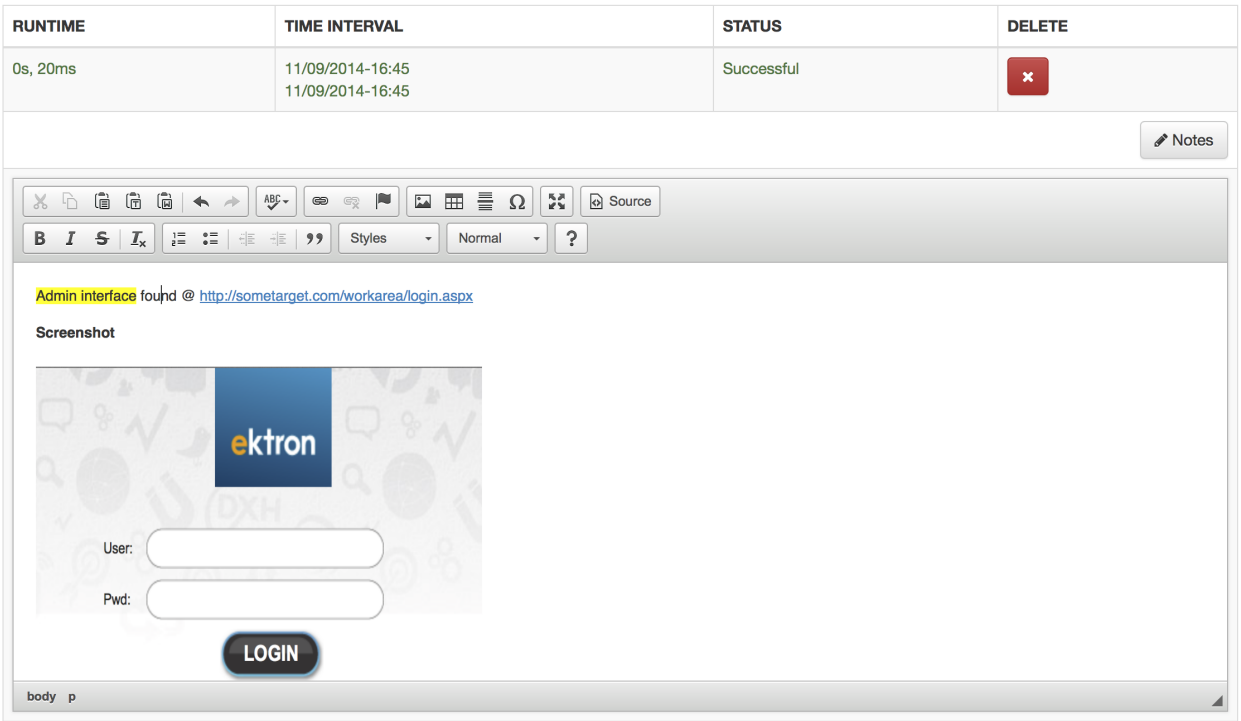
As it can be seen from above image, you can filter the plugin outputs based on multiple criteria. You can even change the mapping of the results. Let us try the latest OWASP v4

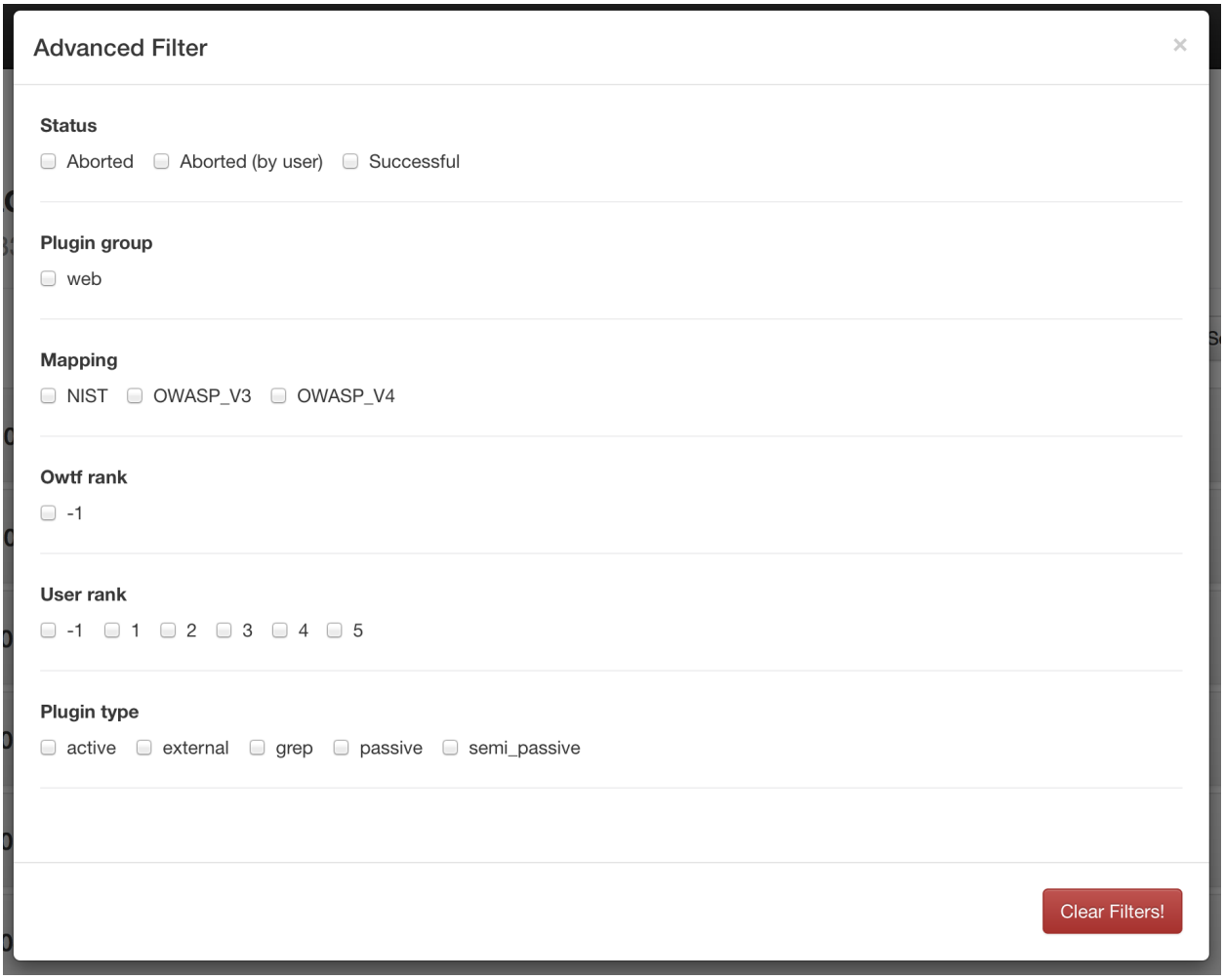
4.5.4 Transaction Log

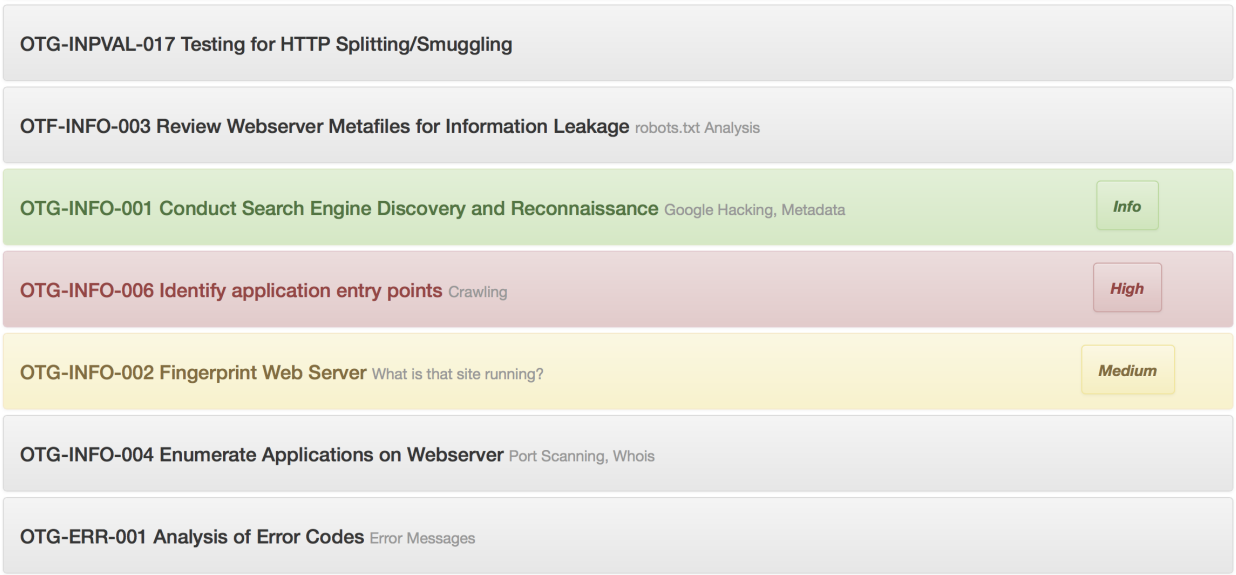
All the transactions that ever happened through the OWTF proxy can be searched through transaction log. You can search in multiple fields. A sample look of the transaction log is in


OWTF-WVS-001 Arachni Unauthenticated
High
Type:
active
external
Active

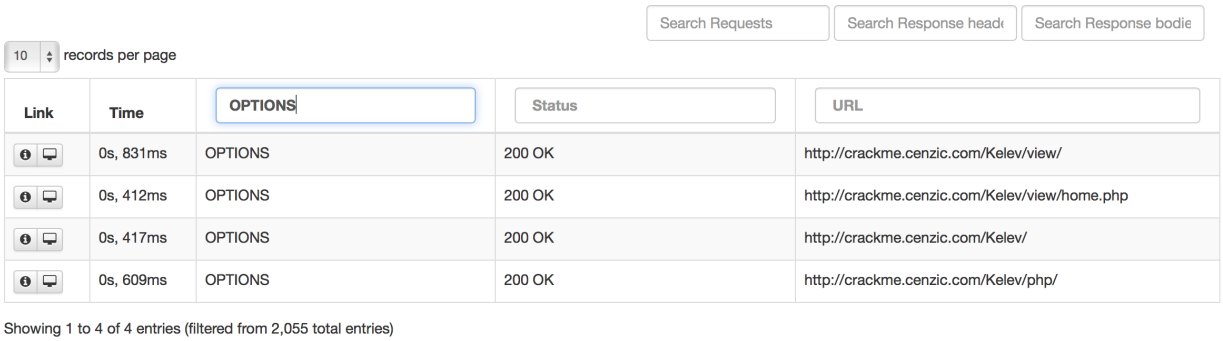

OWTF-WVS-001 Arachni Unauthenticated
Critical
Type:
active
external
Active


RUNTIME
TIME INTERVAL
STATUS
DELETE
0s, 20ms
11/09/2014-16:45
11/09/2014-16:45
Successful
Notes
Source
Styles
Normal
Admin interface found @ http://sometarget.com/workarea/login.aspx
Screenshot
ektron
User:
Pwd:
LOGIN
body p


Advanced Filter
Status
Aborted
Aborted (by user)
Successful
Plugin group
web
Mapping
NIST
OWASP_V3
OWASP_V4
Owtf rank
-1
User rank
-1
1
2
3
4
5
Plugin type
active
external
grep
passive
semi_passive
Clear Filters!


OTG-INPVAL-017 Testing for HTTP Splitting/Smuggling
OTF-INFO-003 Review Webserver Metafiles for Information Leakage robots.txt Analysis
OTG-INFO-001 Conduct Search Engine Discovery and Reconnaissance Google Hacking, Metadata
Info
OTG-INFO-006 Identify application entry points Crawling
High
OTG-INFO-002 Fingerprint Web Server What is that site running?
Medium
OTG-INFO-004 Enumerate Applications on Webserver Port Scanning, Whois
OTG-ERR-001 Analysis of Error Codes Error Messages

the image below.



There are two ways in which individual transactions can be viewed

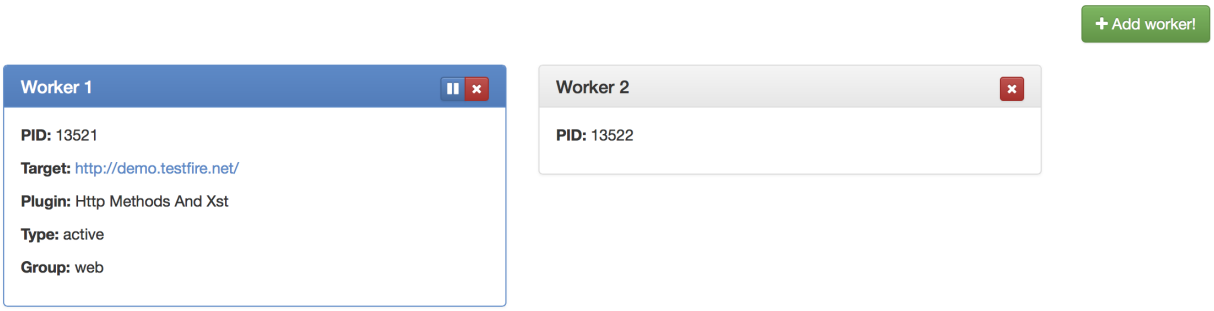
- Each transaction in new tab
- Transaction in a modal window

Clicking on the info button will open a model window which allows you to navigate back & forth between the filtered transactions. The search words are highlighted as well.

4.6 Managing Workers

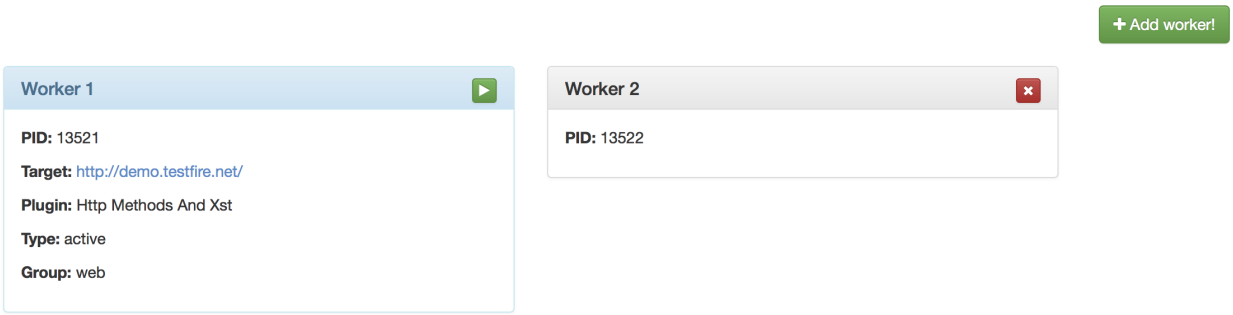
Workers are the actual processes that run the plugins. Control over these worker processes is provided from the worker manager page.

There are three main controls in the worker manager:



4.6.1 Pausing/Resuming Workers

You can **pause/resume** all the workers at the same time or pause them individually through the workers page. We care a lot about your time. If your Internet connection down or if any target is not responding and your web vulnerability scanner plugin is halfway through? Don't worry, we got your back. All you have to do is pause the worker and resume it when the target is back up. Isn't this l33t?



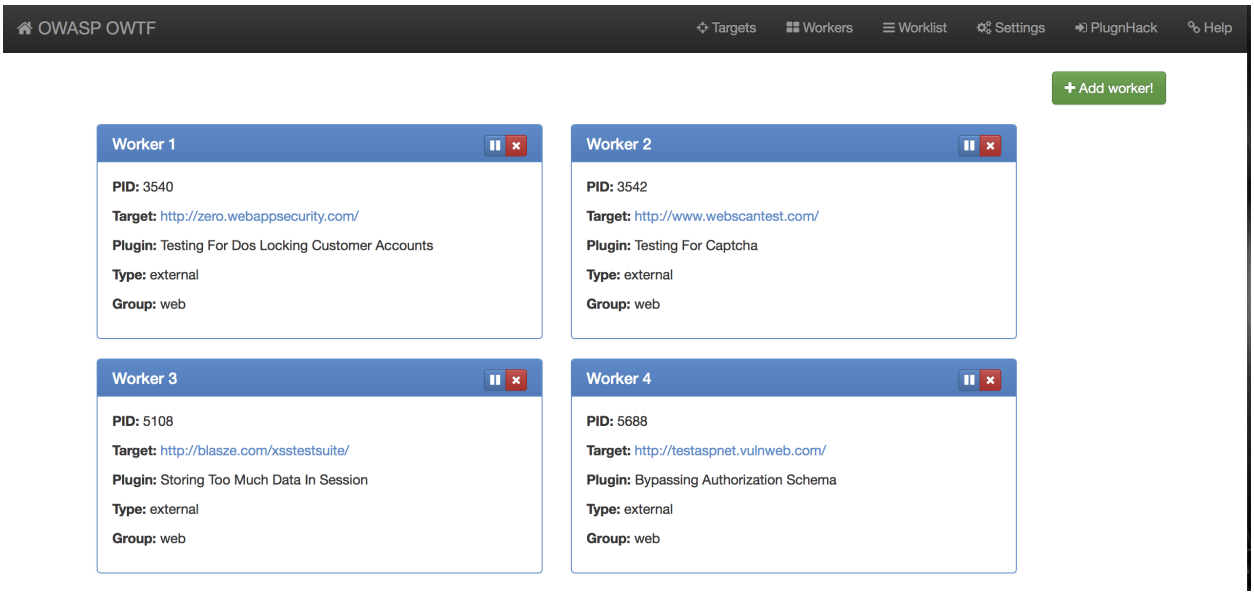
4.6.2 Abort Workers

You can **abort** any worker. If you wish to abort any plugin during execution, just click on the red cross. Do the same if you wish to remove an extra idle worker.

4.6.3 Add Workers

You can **add new workers** on the fly if you have many targets and are running many plugins simultaneously.

> **Warning:** Maximum of one plugin per target will be running at any moment in time

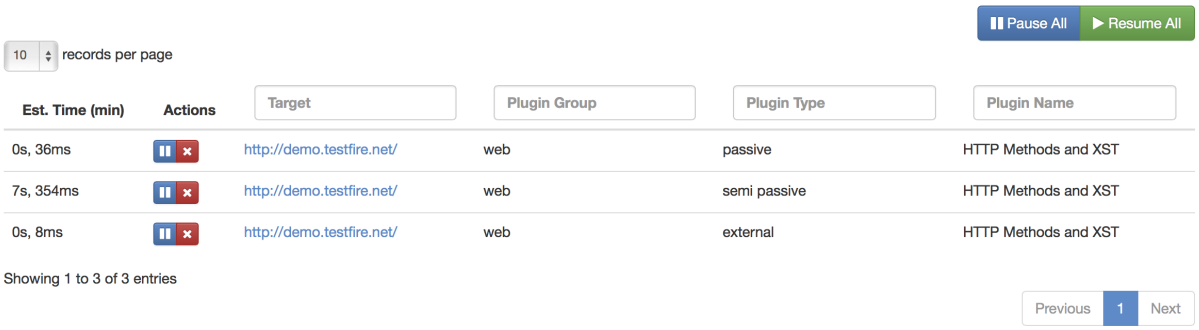


4.7 Controlling Worklist

work When any plugin is launched against a target, it adds a (plugin, target) combination to the worklist. This combination is known as work.

worklist The list consisting of all work which are yet to be assigned to a worker.

Worklist can be managed from the worklist manager which looks like this

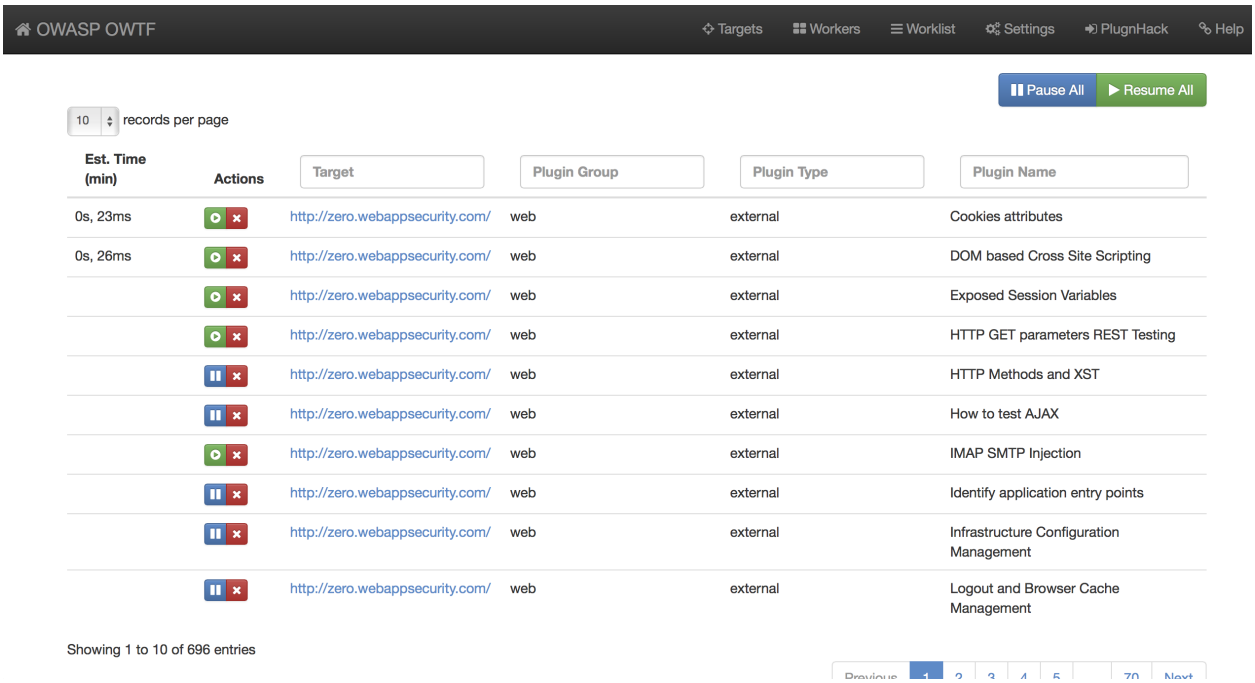


Worklist table provides interesting information like:

- Estimated time for which the plugin will run
- All details about the plugin and the target against which it is launched

4.7.1 Pausing Work

Individual works or whole worklist can be paused. This will stop the work from getting assigned to any worker. The interesting part is `worklist is persistent` ,i.e. if you pause the whole worklist and exit OWTF, the works will still be there in paused state when you start OWTF again.



4.7.2 Deleting Work

Any work can be deleted from the worklist. The search boxes will help in filtering of the works when there are many entries.

CHAPTER 5

Troubleshooting

- Unable to install **pycurl** library, getting **main.ConfigurationError: Could not run curl-config**?

  Luckily, we have faced this issue. If you ran the install script and still got this error, you can let us know. If not, check this issue on how to fix it.

- Unable to run OWTF because of **ImportError: No module named cryptography.hazmat.bindings.openssl.binding**?

  This actually means you do not have cryptography python module installed. It is recommended to rerun the install script (or) to just install the missing python libraries using the following command.

  ```
  pip2 install --upgrade -r install/owtf.pip
  ```

- Unable to run OWTF because of **TypeError: parse_requirements() missing 1 required keyword argument: 'session'**

  This is because of an older version of pip installed in your System. To resolve this run the following commands

  ```
  pip install --upgrade pip (run as root if required)
  python install/install.py
  ```

CHAPTER 6

Want Help or Request a feature?

There are many ways in which you can reach the OWTF Team

- IRC channel (irc.freenode.net)
- Github Issue Tracker
- User mailing list
- Developers mailing list

Python Module Index

o

Index

H

I

L

M

O

P

R

S

T

U

V

W