Stackalytics

Release 1.0.0

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Contents

Stackalytics is a service that collects and processes development activity data such as commits, lines of code changed, and code reviews, and makes it possible to visualize them in a convenient web dashboard. The Stackalytics dashboard makes it possible to view data by project, company, contributor, and other factors.

CHAPTER 1

Overview

- Wiki

CHAPTER 2

API

2.1 Stackalytics JSON API v1.0

Note: JSON API v1.0 corresponds to Stackalytics v0.X

2.1.1 1 General API information

This section contains base info about the Stackalytics JSON API design.

1.2 Request / Response Types

The Stackalytics API default response format is “application/json”. However if HTTP attribute ‘callback’ is specified then JSONP response is returned. That allows to use response in client-side code and avoid same-host requests limitations.

Example:

```
GET /api/1.0/stats/companies
```

or

```
GET /api/1.0/stats/companies?callback=myCallback
Accept: application/javascript
```

1.3 Faults

The Stackalytics API returns an error response if a failure occurs while processing a request. Stackalytics uses only standard HTTP error codes. 4xx errors indicate problems in the particular request being sent from the client and 5xx errors indicate server-side problems.

2.1.2 2 Methods

2.1 Common Parameters

All requests support common set of parameters that allow to filter resulting data.

Parameter	Description
release	Name of OpenStack release or 'all', by default current release
project_type	Type of project, by default 'openstack'
module	Name of module (repository name)
company	Company name
user_id	Launchpad id of user or email if no Launchpad id is mapped.
metric	Metric: e.g. 'commits', 'loc', 'marks', 'emails'

2.1.1 Other query parameters

Data can be queried by time period:

Parameter	Description
start_date	When the period starts
end_date	When the period ends

Both `start_date` and `end_date` take as their argument Unix time

For example to specify `'Thu Jan 1 00:00:00 UTC 2015'` the value would be `1420070400`

Note that if both release and time period are specified then the data is selected for the intersection (thus the useful way is to specify release as `all`).

2.2 Contribution by Modules

Description

Stats on contribution per modules. The data contains list of modules with their metric. Modules which metric is 0 are omitted.

Request

Verb	URI	Description
GET	/api/1.0/stats/modules	Contribution by Modules

Example Request

```
GET /api/1.0/stats/modules?release=havana&metric=commits&project_type=openstack&user_
↪id=zulcss
```

Example Response

```
{
    "stats": [
        {
            "metric": 18,
```

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```
            "id": "oslo-incubator",
            "name": "oslo-incubator"
        },
        {
            "metric": 7,
            "id": "keystone",
            "name": "keystone"
        },
        {
            "metric": 1,
            "id": "python-neutronclient",
            "name": "python-neutronclient"
        }
    ]
}
```

2.3 Contribution by Companies

Description

Stats on contribution per companies. The data contains list of companies with their metric. Companies which metric is 0 are omitted.

Request

Verb	URI	Description
GET	/api/1.0/stats/companies	Contribution by Companies

Example Request

```
GET /api/1.0/stats/companies?release=havana&metric=commits&project_type=openstack&
↪module=neutron
```

Example Response

```
{
    "stats": [
        {
            "metric": 155,
            "id": "VMware",
            "name": "VMware"
        },
        {
            "metric": 76,
            "id": "Mirantis",
            "name": "Mirantis"
        },
        {
            "metric": 53,
            "id": "Red Hat",
            "name": "Red Hat"
        },
        {
            "metric": 49,
            "id": "Cisco Systems",
```

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```
            "name": "Cisco Systems"
        },
        {
            "metric": 46,
            "id": "*independent",
            "name": "*independent"
        }
    ]
}
```

2.4 Contribution by Engineers

Description

Stats on contribution per engineers. The data contains list of engineers with their metric. Engineers who has metric 0 are omitted. For reviews also added column with review distribution.

Request

Verb	URI	Description
GET	/api/1.0/stats/engineers	Contribution by Engineers

Example Request: Commits

```
GET /api/1.0/stats/engineers?release=havana&metric=commits&project_type=openstack&
↪module=pbr
```

Example Response

```
{
    "stats": [
        {
            "metric": 54,
            "id": "mordred",
            "name": "Monty Taylor"
        },
        {
            "metric": 6,
            "id": "jdanjou",
            "name": "Julien Danjou"
        },
        {
            "metric": 4,
            "id": "doug-hellmann",
            "name": "Doug Hellmann"
        },
        {
            "metric": 3,
            "id": "slukjanov",
            "name": "Sergey Lukjanov"
        }
    ]
}
```

Example Request: Reviews

```
GET /api/1.0/stats/engineers?release=havana&metric=marks&project_type=openstack&
↪module=pbr
```

Example Response

```
{
    "stats": [
        {
            "comment": "1|3|55|45 (96.2%)",
            "metric": 104,
            "id": "mordred",
            "name": "Monty Taylor"
        },
        {
            "comment": "0|13|18|51 (84.1%)",
            "metric": 82,
            "id": "cboylan",
            "name": "Clark Boylan"
        },
        {
            "comment": "0|13|11|36 (78.3%)",
            "metric": 60,
            "id": "doug-hellmann",
            "name": "Doug Hellmann"
        }
    ]
}
```

2.5 Activity log

Description

Depending on selected metric Activity log contains commits, reviews, emails or blueprints.

Request

Verb	URI	Description
GET	/api/1.0/activity	Activity log

When querying the activity log, the page_size and start_record parameters can be used to manage the paging of results (splitting results over multiple requests/responses). The default value of page_size is 10.

Example Response

```
{
    "activity": [
        {
            "record_type": "commit",
            "primary_key": "63580a7298887e6909602d8d96859b4e96b017e3",
            "commit_id": "63580a7298887e6909602d8d96859b4e96b017e3",
            "user_id": "zulcss",
            "launchpad_id": "zulcss",
            "author_name": "Chuck Short",
            "author_email": "chuck.short@canonical.com",
            "module": "ceilometer",
            "release": "havana",
```

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```
                "blueprint_id": [],
                "bug_id": [],
                "date": 1370134263,
                "branches": "master",
                "message": "Introduce py33 to tox.ini to make testing with python3 easier.
↪\n",
                "subject": "python3: Introduce py33 to tox.ini",
                "change_id": [
                    "I96d1ecd3f0069295e27127239c83afc32673ffec"
                ],
                "company_name": "Canonical",
                "loc": 2,
                "files_changed": 1,
                "lines_added": 1,
                "lines_deleted": 1
            }
        ]
}
```

2.6 Contribution summary

Description

Get contribution summary: number of commits, locs, emails, drafted and completed blueprints, review marks with distribution per mark (-2..+2).

Request

Verb	URI	Description
GET	/api/1.0/contribution	Contribution summary

Example Response

```
{
    "contribution": {
        "loc": 252,
        "new_blueprint_count": 2,
        "email_count": 7,
        "commit_count": 5,
        "competed_blueprint_count": 0,
        "marks": {
            "0": 0,
            "1": 12,
            "2": 2,
            "-1": 5,
            "-2": 0
        }
    }
}
```

CHAPTER 3

CLI Tools

3.1 stackalytics-processor

Run Stackalytics processor

```
usage: stackalytics-processor [-h] [--config-dir DIR] [--config-file PATH]
                              [--corrections-uri CORRECTIONS_URI]
                              [--days_to_update_members DAYS_TO_UPDATE_MEMBERS]
                              [--debug] [--default-data-uri DEFAULT_DATA_URI]
                              [--fetching-user-source FETCHING_USER_SOURCE]
                              [--gerrit-retry GERRIT_RETRY]
                              [--git-base-uri GIT_BASE_URI]
                              [--log-config-append PATH]
                              [--log-date-format DATE_FORMAT]
                              [--log-dir LOG_DIR] [--log-file PATH]
                              [--members-look-ahead MEMBERS_LOOK_AHEAD]
                              [--nodebug] [--nouse-journal] [--nouse-syslog]
                              [--nowatch-log-file]
                              [--read-timeout READ_TIMEOUT]
                              [--review-uri REVIEW_URI]
                              [--runtime-storage-uri RUNTIME_STORAGE_URI]
                              [--sources-root SOURCES_ROOT]
                              [--ssh-key-filename SSH_KEY_FILENAME]
                              [--ssh-username SSH_USERNAME]
                              [--syslog-log-facility SYSLOG_LOG_FACILITY]
                              [--translation-team-uri TRANSLATION_TEAM_URI]
                              [--use-journal] [--use-syslog]
                              [--watch-log-file]

optional arguments:
  -h, --help            show this help message and exit
  --config-dir DIR      Path to a config directory to pull `*.conf` files
                        from. This file set is sorted, so as to provide a
                        predictable parse order if individual options are
```

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```
                        over-ridden. The set is parsed after the file(s)
                        specified via previous --config-file, arguments hence
                        over-ridden options in the directory take precedence.
  --config-file PATH    Path to a config file to use. Multiple config files
                        can be specified, with values in later files taking
                        precedence. Defaults to None.
  --corrections-uri CORRECTIONS_URI
                        The address of file with corrections data
  --days_to_update_members DAYS_TO_UPDATE_MEMBERS
                        Number of days to update members
  --debug, -d           If set to true, the logging level will be set to DEBUG
                        instead of the default INFO level.
  --default-data-uri DEFAULT_DATA_URI
                        URI for default data. A local file can be used with
                        the prefix "file://". For example, default_data_uri =
                        file:///path/to/default_data.json
  --fetching-user-source FETCHING_USER_SOURCE
                        Source for fetching user profiles
  --gerrit-retry GERRIT_RETRY
                        How many times to retry after Gerrit errors
  --git-base-uri GIT_BASE_URI
                        git base location
  --log-config-append PATH, --log-config PATH, --log_config PATH
                        The name of a logging configuration file. This file is
                        appended to any existing logging configuration files.
                        For details about logging configuration files, see the
                        Python logging module documentation. Note that when
                        logging configuration files are used then all logging
                        configuration is set in the configuration file and
                        other logging configuration options are ignored (for
                        example, logging_context_format_string).
  --log-date-format DATE_FORMAT
                        Defines the format string for %(asctime)s in log
                        records. Default: None . This option is ignored if
                        log_config_append is set.
  --log-dir LOG_DIR, --logdir LOG_DIR
                        (Optional) The base directory used for relative
                        log_file paths. This option is ignored if
                        log_config_append is set.
  --log-file PATH, --logfile PATH
                        (Optional) Name of log file to send logging output to.
                        If no default is set, logging will go to stderr as
                        defined by use_stderr. This option is ignored if
                        log_config_append is set.
  --members-look-ahead MEMBERS_LOOK_AHEAD
                        How many member profiles to look ahead after the last
  --nodebug             The inverse of --debug
  --nouse-journal       The inverse of --use-journal
  --nouse-syslog        The inverse of --use-syslog
  --nowatch-log-file    The inverse of --watch-log-file
  --read-timeout READ_TIMEOUT
                        Number of seconds to wait for remote response
  --review-uri REVIEW_URI
                        URI of review system
  --runtime-storage-uri RUNTIME_STORAGE_URI
                        Storage URI
  --sources-root SOURCES_ROOT
```

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```
                        The folder that holds all project sources to analyze
  --ssh-key-filename SSH_KEY_FILENAME
                        SSH key for gerrit review system access
  --ssh-username SSH_USERNAME
                        SSH username for gerrit review system access
  --syslog-log-facility SYSLOG_LOG_FACILITY
                        Syslog facility to receive log lines. This option is
                        ignored if log_config_append is set.
  --translation-team-uri TRANSLATION_TEAM_URI
                        URI of translation team data
  --use-journal         Enable journald for logging. If running in a systemd
                        environment you may wish to enable journal support.
                        Doing so will use the journal native protocol which
                        includes structured metadata in addition to log
                        messages.This option is ignored if log_config_append
                        is set.
  --use-syslog          Use syslog for logging. Existing syslog format is
                        DEPRECATED and will be changed later to honor RFC5424.
                        This option is ignored if log_config_append is set.
  --watch-log-file      Uses logging handler designed to watch file system.
                        When log file is moved or removed this handler will
                        open a new log file with specified path
                        instantaneously. It makes sense only if log_file
                        option is specified and Linux platform is used. This
                        option is ignored if log_config_append is set.
```

CHAPTER 4

Developer Guide

Other Resources

4.1 Project hosting with Launchpad

The Stackalytics project homepage on Launchpad is https://launchpad.net/stackalytics.

4.1.1 Bug tracking

Report Stackalytics bugs at https://bugs.launchpad.net/stackalytics

4.1.2 Feature requests (Blueprints)

Stackalytics uses Launchpad Blueprints to track feature requests. Blueprints are at https://blueprints.launchpad.net/stackalytics.

4.2 Code Reviews with Gerrit

Stackalytics uses the Gerrit tool to review proposed code changes. The review site is https://review.openstack.org.

Gerrit is a complete replacement for Github pull requests. *All Github pull requests to the Stackalytics repository will be ignored*.

See Gerrit Workflow Quick Reference for information about how to get started using Gerrit. See Development Workflow for more detailed documentation on how to work with Gerrit.

4.3 Continuous Integration with Jenkins

Each change made to Stackalytics core code is tested with unit and integration tests and style checks flake8.

Unit tests and style checks are performed on public OpenStack Jenkins managed by Zuul. Unit tests are checked using both python 2.6 and python 2.7.

The result of those checks and Unit tests are +1 or -1 to *Verify* column in a code review from *Jenkins* user.