bilean Documentation

Release

OpenStack Foundation

May 27, 2016

Contents

Bilean is a billing service for OpenStack cloud, it provides trigger-type billing based on other OpenStack services' notification.

This documentation offers information on how Bilean works and how to contribute to the project.

Overview

The mission for Bilean project is to provide a generic billing service for an OpenStack cloud, it implements trigger-type billing based on other OpenStack services' notification.

1.1 Components

The developers are focusing on creating an OpenStack style project using OpenStack design tenets, implemented in Python. We have started with a close interaction with Heat project.

1.1.1 bilean

The `bilean` tool is A CLI communicates with the `bilean-api` to manage rules, policies, users, resources, jobs and events. End developers could also use the Bilean REST API directly.

1.1.2 bilean-api

The `bilean-api` component provides an OpenStack-native REST API that processes API requests by sending them to the `bilean-engine` over RPC.

1.1.3 bilean-scheduler

The `bilean-scheduler` manages jobs related to users and scheduler job to engine to execute it.

1.1.4 bilean-engine

The `bilean-engine` does the main billing work, operates all users, rules, policies, resources, jobs and events.

1.1.5 bilean-notification

The `bilean-notification` component monitors the message bus for data provided by other OpenStack components such as Nova, then converts notifications into billing resources and sends to `bilean-engine` over AMQP.

1.2 Installation

You will need to make sure you have a suitable environment for deploying Bilean. Please refer to *Installation* for detailed instructions on setting up an environment to use the Bilean service.

Installation

There are in general two ways to isntall Bilean service: install via DevStack or install manually.

2.1 Install via DevStack

This is the recommended way to install the Bilean service. Please refer to following detailed instructions.

1. Download DevStack.

```
git clone https://git.openstack.org/openstack-dev/devstack
cd devstack
```

2. Add this repo as an external repository.

```
cat > /opt/stack/devstack/local.conf << END
[[local|localrc]]
enable_plugin bilean https://github.com/openstack/bilean master
END
```

3. Add Plugin Configuration Hooks.

   Bilean service is driven using a plugin mechanism for integrating to other services. Each integrated service may require additional configuration settings. For example, typically, you will need to add the `billing_notifications` notification topic to each service's configuration.

4. Then run devstack normally.

```
cd /opt/stack/devstack
./stack.sh
```

2.2 Manual Installation

2.2.1 Install Bilean Server

1. Get Bilean source code from Github.

```
$ cd /opt/stack
$ git clone https://github.com/lvdongbing/bilean.git
```

2. Install Bilean with required packages.

```
$ cd /opt/stack/bilean
$ sudo pip install -e .
```

3. Register Bilean service with keystone.

    This can be done using the **setup-service** script under the `tools` folder:

```
$ source ~/devstack/openrc admin
$ cd /opt/stack/bilean/tools
$ ./setup-service <HOST IP> <SERVICE_PASSWORD>
```

4. Generate configuration file for the Bilean service.

```
$ cd /opt/stack/bilean
$ tox -e genconfig
$ sudo mkdir /etc/bilean
$ sudo cp etc/bilean/api-paste.ini /etc/bilean
$ sudo cp etc/bilean/policy.json /etc/bilean
$ sudo cp etc/bilean/resource_definitions.yaml /etc/bilean
$ sudo cp etc/bilean/bilean.conf.sample /etc/bilean/bilean.conf
```

5. Modify configuration file.

    Edit file `/etc/bilean/bilean.conf` according to your system settings. The most common options to be customized include:

```
[database]
connection = mysql://root:<DB PASSWORD>@127.0.0.1/bilean?charset=utf8

[keystone_authtoken]
auth_uri = http://<HOST>:5000/v3
auth_version = 3
cafile = /opt/stack/data/ca-bundle.pem
identity_uri = http://<HOST>:35357
admin_user = bilean
admin_password = <BILEAN PASSWORD>
admin_tenant_name = service

[authentication]
auth_url = http://<HOST>:5000/v3
service_username = bilean
service_password = <BILEAN PASSWORD>
service_project_name = service

[oslo_messaging_rabbit]
rabbit_userid = <RABBIT USER ID>
rabbit_hosts = <HOST>
rabbit_password = <RABBIT PASSWORD>
```

6. Create Bilean Database

    Create Bilean database using the **bilean-db-recreate** script under the `tools` subdirectory:

```
$ cd /opt/stack/bilean/tools
$ ./bilean-db-recreate <DB PASSWORD>
```

7. Start bilean services.

    You may need four consoles for the services each:

```
$ bilean-engine --config-file /etc/bilean/bilean.conf
$ bilean-api --config-file /etc/bilean/bilean.conf
$ bilean-scheduler --config-file /etc/bilean/bilean.conf
$ bilean-notification --config-file /etc/bilean/bilean.conf
```

2.2.2 Install Bilean Client

1. Get Bilean client code from OpenStack git repository.

```
$ cd /opt/stack
$ git clone https://git.openstack.org/openstack/python-bileanclient.git
```

2. Install Bilean client.

```
$ cd python-bileanclient
$ sudo pip install -e .
```

2.2.3 Verify Installation

To check whether Bilean server and Bilean client have been installed successfully, run command `bilean user-list` in a console. The installation is successful if the command output looks similar to the following.

```
$ bilean user-list
+----------------------------------+------------------+---------+--------+------+--------+
| id                               | name             | balance | credit | rate | status |
+----------------------------------+------------------+---------+--------+------+--------+
| 675f42b2dd3a456c9890350403bce8cf | admin            | 0.0     | 0      | 0.0  | INIT   |
| 927fef3da8194718a9179f4775f5f5ce | service          | 0.0     | 0      | 0.0  | INIT   |
| c688c64711a64d06b90c2b3c5d513dde | demo             | 0.0     | 0      | 0.0  | INIT   |
| e0504e51bd0d4e8886d06bb3cc3e6e80 | alt_demo         | 0.0     | 0      | 0.0  | INIT   |
| e9950cf337be47e68a21c9b20b291142 | invisible_to_admin | 0.0   | 0      | 0.0  | INIT   |
+----------------------------------+------------------+---------+--------+------+--------+
```

Contributing to Bilean

If you're interested in contributing to the Bilean project, the following will help get you started.

3.1 Contributor License Agreement

In order to contribute to the Bilean project, you need to have signed OpenStack's contributor's agreement:

- http://docs.openstack.org/infra/manual/developers.html
- http://wiki.openstack.org/CLA

3.2 Project Hosting Details

- **Bug trackers**
    - General bilean tracker: https://launchpad.net/bilean
    - Python client tracker: https://launchpad.net/python-bileanclient
- **Mailing list (prefix subjects with `[Bilean]` for faster responses)** http://lists.openstack.org/cgi-bin/mailman/listinfo/openstack-dev
- **Wiki** https://wiki.openstack.org/wiki/Bilean
- **IRC channel**
    - #openstack-bilean at FreeNode
- **Code Hosting**
    - https://git.openstack.org/cgit/openstack/bilean
    - https://git.openstack.org/cgit/openstack/python-bileanclient
- **Code Review**
    - https://review.openstack.org/#/q/bilean+AND+status:+open,n,z
    - http://docs.openstack.org/infra/manual/developers.html#development-workflow

Indices and tables

- genindex
- modindex
- search