



Rust at Sentry

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Hi, I'm Armin
...and I do Open Source,
lots of Python and SaaS

Flask
Sentry

...

... and here is
where you
can find me

twitter.com/@mitsuhiko

github.com/mitsuhiko













lucumr.pocoo.org/

we show you your crashes





Q is:unresolved

<input type="checkbox"/>	<input checked="" type="checkbox"/> Resolve	<input type="checkbox"/>	<input checked="" type="checkbox"/> Ignore	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	GRAPH:	24H	14D	EVENTS	USERS
Error	SalesforceError <code>salesforce.apply_update</code> <input type="checkbox"/> TotalRequests Limit exceeded. https://na35.salesforce.com/services/data/v38.0/subjects/Acc... SENTRY-3M8 3 minutes ago — a month old									1.8m	0	
Error	ExpiredSignatureError <code>/plugins/jira-ac/plugin</code> <input type="checkbox"/> Signature has expired SENTRY-1Z0 4 minutes ago — 10 months old 1									874k	24k	
Error	PluginError <code>sentry.tasks.commits.fetch_commits</code> <input type="checkbox"/> Unauthorized: either your access token was invalid or you do not have access SENTRY-39Q 5 minutes ago — 2 months old sentry.tasks.commits									900	0	
Error	ValueError <code>/api/{project_id}/store/</code> <input type="checkbox"/> too many values to unpack SENTRY-3H 6 minutes ago — 2 years old sentry.api									9.4k	12	
Error	PluginError <code>sentry.tasks.commits.fetch_commits</code> <input type="checkbox"/> Bitbucket returned a 404. Please make sure that the repo exists, you have access to it, and it h... SENTRY-3V7 7 minutes ago — 4 hours old sentry.tasks.commits									21	0	
Error	Exception <code>sentry.tasks.check_auth_identity</code> <input type="checkbox"/> HTTP 500 (internal_failure): no description available SENTRY-1A1 7 minutes ago — a year old sentry.auth									3.2k	0	



EXCEPTION (most recent call first)

App Only

Full

Raw

KeyError

'project'

sentry/coreapi.py in insert_data_to_database at line 783

```
778.  
779.     def insert_data_to_database(self, data, from_reprocessing=False):  
780.         # we might be passed LazyData  
781.         if isinstance(data, LazyData):  
782.             data = dict(data.items())  
783.             cache_key = 'e:{1}:{0}'.format(data['project'], data['event_id'])  
784.             default_cache.set(cache_key, data, timeout=3600)  
785.             task = from_reprocessing and \  
786.                 preprocess_event_from_reprocessing or preprocess_event  
787.             task.delay(cache_key=cache_key, start_time=time(),  
788.                       event_id=data['event_id'])
```

data {}

from_reprocessing True

Show More

sentry/tasks/reprocessing.py in reprocess_events at line 35

sentry/tasks/base.py in _wrapped at line 54

Called from: celery/app/trace.py in __protected_call__

Release: e8d35d7

Tags

environment 100% prod

level 100% error

machine.provider 94% softlayer

release 10% a9783ab2469e

server_name 42% app-7c83c5

transaction 100% sentry.tasks.reproces...

1 Participant

AR

Notifications

You're receiving updates because you were assigned to this issue.

Unsubscribe

ADDITIONAL DATA

chapter 0

a bit about us

“sentry”

Open Source Project

“sentry.io”

Cloud Hosted

relatively flexible stack

postgres, mysql, cassandra, riak, ...

chapter 1

our general tech stack

The Python logo, consisting of two interlocking snakes, is rendered in a dark purple color and serves as a background for the text.

Lots of Python

Simple Stack

Python
RabbitMQ
Postgres
Riak
Redis

Conservative Approach to Adding New Systems

prefer **Internal Modularity**
over
building More **Services**

how does rust fit?

chapter 2

why is there Rust?

a bit of a hobby of mine

turned into **sentry-cli**

(command line client to manage organizations / build integration)

later reused components
for Python modules

now part of our tech stack

chapter 3

how we started

why we use Rust for sentry-cli


```
$ otool -L which sentry-cli
```

```
/usr/local/bin/sentry-cli:
```

```
    /System/Library/Frameworks/Security.framework/Versions/A/Security
```

```
    /usr/lib/libiconv.2.dylib
```

```
    /System/Library/Frameworks/CoreFoundation.framework/Versions/A/CoreFoundation
```

```
    /usr/lib/libcurl.4.dylib
```

```
    /usr/lib/libz.1.dylib
```

```
    /usr/lib/libSystem.B.dylib
```

```
$ curl -sL https://sentry.io/get-cli/ | bash
```

```
$ npm install sentry-cli-binary
```

that and crates.io

rejected alternatives

go

JavaScript (bundled node)

C / C++

Python / Ruby

things that work well

serialization / deserialization

error handling

console UX

file size

chapter 4

from client to server



sourcemap parsing

reused sentry-cli
code for server

processing time

+20 sec → < 500ms

debug symbols

proguard

chapter 5

marrying python and rust

github.com/mitsuhiko/snaek

```
from setuptools import setup, find_packages

setup(
    name='example',
    version='0.0.1',
    packages=find_packages(),
    include_package_data=True,
    zip_safe=False,
    platforms='any',
    install_requires=[
        'snaek',
    ],
    snaek_rust_modules=[
        ('example._native', 'rust/'),
    ]
)
```

build *rust* library
expose rust -> *cabi*
snake to consume

```
#[repr(C)]
```

```
pub struct Point {  
    pub x: f32,  
    pub y: f32,  
}
```

```
#[no_mangle]
```

```
pub unsafe extern "C" fn example_get_origin() -> Point {  
    Point { x: 0.0, y: 0.0 }  
}
```

```
from example._native import lib

def get_origin():
    point = lib.example_get_origin()
    return (point.x, point.y)
```

chapter 6

things in rust to love

```
#[derive(Serialize, Deserialize, Debug, Default)]
pub struct Deploy {
    #[serde(rename="environment")]
    pub env: String,
    pub name: Option<String>,
    pub url: Option<String>,
    #[serde(rename="dateStarted")]
    pub started: Option<DateTime<UTC>>,
    #[serde(rename="dateFinished")]
    pub finished: Option<DateTime<UTC>>,
}
```

```
/// Lists all deploys for a release
pub fn list_deploys(&self, org: &str, version: &str)
    -> ApiResponse<Vec<Deploy>>
{
    self.get(&format!("/organizations/{}/releases/{}/deploys/",
                     PathArg(org), PathArg(version)))?
        .convert()
}
```


super flexible
(de)serialization layer

chapter 7

crates we use / built

always useful

if_chain

lazy_static

error-chain

for serialization

serde

serde_derive

serde_json

serde_yaml

for pretty console UI

console
indicatif
dialoguer

ours :)

HTTP stuff

rust-curl

openssl-probe

XML

elementtree

ours :)

chapter 8

things we don't like

compile times :'(

chapter 9

things rust needs

“what not to do” guide

incremental compilation

higher level C ABI tools

Questions?

