PHP Apps Import Integration

Treasure Data provides td-agent, to collect server-side logs and events, and to seamlessly import the data from PHP applications, through Treasure Agent.

Continue to the following topics:

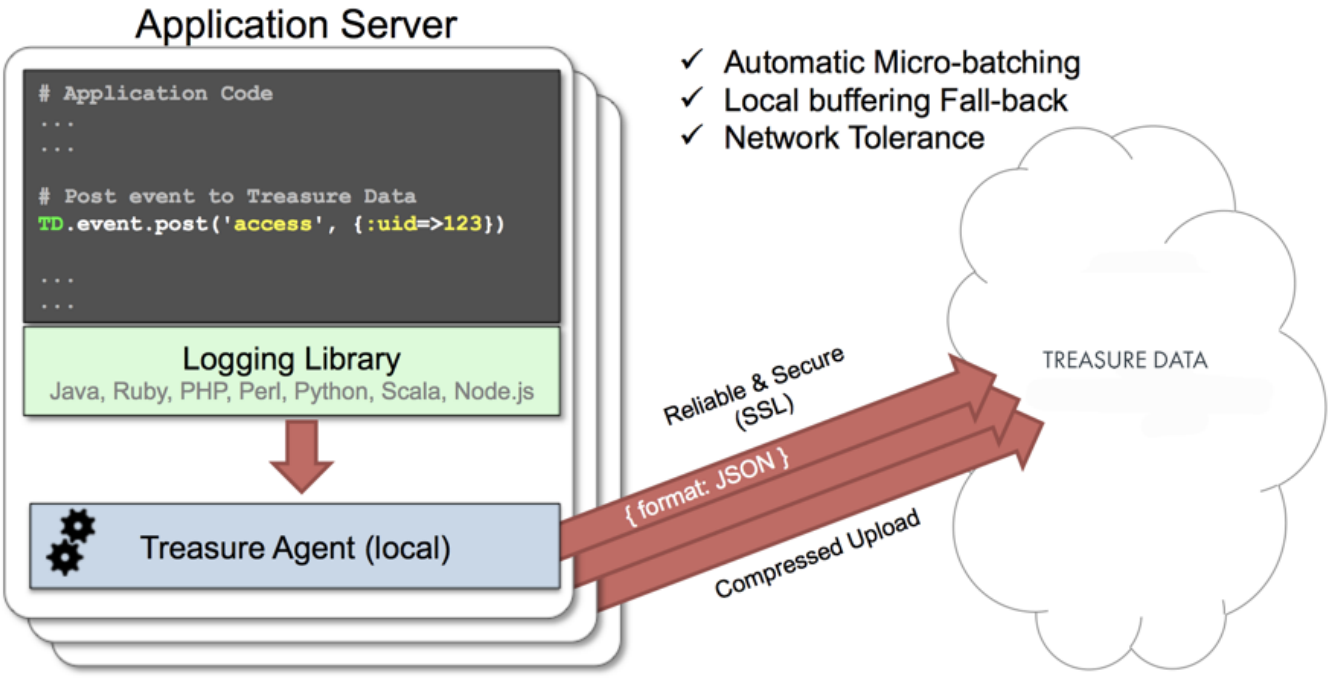
Prerequisites

- Basic knowledge of PHP.
- Basic knowledge of Treasure Data, including the TD Toolbelt.
- PHP 5.3 or higher (for local testing).

> The fluent-logger-php library does not work in Heroku (here's why).

Installing td-agent

Install `td-agent`on your application servers. td-agent sits within your application servers, focusing on uploading application logs to the cloud.



The fluent-logger-php library enables PHP applications to post records to their local td-agent. td-agent, in turn, uploads the data to the cloud every 5 minutes. Because the daemon runs on a local node, the logging latency is negligible.

td-agent Install Options

To install `td-agent`, run one of the following commands based on your environment. The agent program is installed automatically when you use the package management software for each platform like rpm/deb/dmg.

RHEL/CentOS 5,6,7

```
$ curl -L https://toolbelt.treasuredata.com/sh/install-redhat-td-agent3.sh | sh
```

Ubuntu and Debian

```
# 18.04 Bionic
$ curl -L https://toolbelt.treasuredata.com/sh/install-ubuntu-bionic-td-agent3.sh | sh
# 16.04 Xenial (64bit only)
$ curl -L https://toolbelt.treasuredata.com/sh/install-ubuntu-xenial-td-agent3.sh | sh
```

Legacy support for EOL versions is still available

```
# 14.04 Trusty
$ curl -L https://toolbelt.treasuredata.com/sh/install-ubuntu-trusty-td-agent3.sh | sh
# 12.04 Precise
$ curl -L https://toolbelt.treasuredata.com/sh/install-ubuntu-precise-td-agent3.sh | sh
# Debian Stretch (64-bit only) $ curl -L https://toolbelt.treasuredata.com/sh/install-debian-stretch-td-agent3.
sh | sh
# Debian Jessie (64-bit only)
$ curl -L https://toolbelt.treasuredata.com/sh/install-debian-jessie-td-agent3.sh | sh
# Debian Squeeze (64-bit only)
$ curl -L https://toolbelt.treasuredata.com/sh/install-debian-squeeze-td-agent2.sh | sh
```

Amazon Linux

You can choose Amazon Linux 1 or Amazon Linux 2. Refer to Installing td-agent on AWS Linux.

MacOS X 10.11+

```
$ open 'https://td-agent-package-browser.herokuapp.com/3/macosx/td-agent-3.1.1-0.dmg'
```

MacOS X 10.11.1 (El Capitan) introduces some security changes. After the td-agent is installed, edit the **/Library/LaunchDaemons/td-agent.plist** file to change **/usr/sbin/td-agent** to **/opt/td-agent/usr/sbin/td-agent**.

Windows Server 2012+

The Windows installation requires the steps detailed in:

- Installing Treasure Agent using .msi Installer (Windows)

Opscode Chef Repository

```
$ echo 'cookbook "td-agent"' >> Berksfile
$ berks install
```

AWS Elastic Beanstalk is also supported. Windows is currently NOT supported.

Modifying /etc/td-agent/td-agent.conf

Next, specify your API key by setting the `apikey` option. You can view your API key from your profile in the TD Console.

```
# Unix Domain Socket Input
<source>
  type unix
  path /var/run/td-agent/td-agent.sock
</source>

# Treasure Data Output
<match td.*.*>
  type tdlog
  endpoint api.treasuredata.com
  apikey YOUR_API_KEY
  auto_create_table
  buffer_type file
  buffer_path /var/log/td-agent/buffer/td
  use_ssl true
</match>
```

YOUR_API_KEY should be your actual apikey string. Using a [write-only API key](access-control#rest-apis-access) is recommended.

Restart your agent when the following lines are in place.

```
# Linux
$ sudo /etc/init.d/td-agent restart

# MacOS X
$ sudo launchctl unload /Library/LaunchDaemons/td-agent.plist
$ sudo launchctl load /Library/LaunchDaemons/td-agent.plist
```

td-agent now accepts data via port 24224, buffers the data (*var/log/td-agent/buffer/td*), and automatically uploads the data into the cloud.

Using fluent-logger-php

To use fluent-logger-php, use Composer as a package manager. First, create `composer.json` in your directory with the following content.

```
{
  "require": {
    "fluent/logger": "v1.0.0"
  }
}
```

Then, install `Composer` and install necessary libraries.

```
$ curl -sS https://getcomposer.org/installer | php
$ php composer.phar install
```

Next, initialize and post the records as follows.

```
<?php
require_once __DIR__.'/vendor/autoload.php';
use Fluent\Logger\FluentLogger;
$logger = new FluentLogger("unix:///var/run/td-agent/td-agent.sock");
$logger->post("td.test_db.test_table", array("hello"=>"world"));
$logger->post("td.test_db.follow", array("from"=>"userA", "to"=>"userB"));
```

Confirming Data Import

Execute the preceding program.

```
$ php test.php
```

Sending a SIGUSR1 signal flushes td-agent's buffer. The upload starts immediately.

```
# Linux
$ kill -USR1 `cat /var/run/td-agent/td-agent.pid`

# MacOS X
$ sudo kill -USR1 `sudo launchctl list | grep td-agent | cut -f 1`
```

To confirm that your data has been uploaded successfully, issue the *td tables* command as follows:

```
$ td tables
+------------+------------+------+-----------+
| Database   | Table      | Type | Count     |
+------------+------------+------+-----------+
| test_db    | test_table | log  | 1         |
| test_db    | follow     | log  | 1         |
+------------+------------+------+-----------+
```

The first argument of post() determines the database name and table name. If you specify `td.test_db.test_table`, the data is imported into the table *test_table* within the database *test_db*. They are automatically created at upload time.

Tips on Production Deployment

Use Apache and mod_php

We recommend that you use Apache and mod_php. Other setups have not been fully validated.

Use Apache prefork MPM

Use Apache prefork MPM. Other MPMs such as worker MPM should not be used. You can confirm your current settings with the *apachectl -V* command.

```
$ apachectl -V | grep MPM:
Server MPM:     Prefork
```

Set MaxRequestsPerChild

We recommend that you periodically restart your PHP processes by setting *MaxRequestsPerChild* in your Apache conf.

```
<IfModule mpm_prefork_module>
  StartServers          32
  MinSpareServers       32
  MaxSpareServers       32
  MaxClients            32
  MaxRequestsPerChild 4096
</IfModule>
```

Do not set MaxRequestsPerChild to zero.

Production Deployments

High-Availability Configurations of td-agent

For high-traffic websites (more than 5 application nodes), use a high availability configuration of td-agent to improve data transfer reliability and query performance.

- High-Availability Configurations of td-agent

Monitoring td-agent

Monitoring td-agent itself is also important. Refer to this document for general monitoring methods for td-agent:

- Monitoring td-agent

td-agent is fully open-sourced under the Fluentd project.

FAQs

“Resource temporarily unavailable” warning message appears in my PHP application

This problem occurs when you have either a relatively high volume, or an old Linux kernel version. You must tune up the Linux kernel a little bit.

Increase Max # of File Descriptors

First, increase the max number of file descriptors per process. When you type `ulimit -n` command and the result shows `1024`, complete the follow instructions to increase to 65535:

- Increase Max # of File Descriptors

Optimize Kernel Parameters

Add the following parameters to your `/etc/sysctl.conf` file. Either type `sysctl -w` or reboot your node to have the changes take effect. You need a root permission.

```
net.core.somaxconn = 1024
net.ipv4.tcp_tw_reuse = 1
net.ipv4.ip_local_port_range = 10240    65535
```

Next Steps

We offer a schema mechanism that is more flexible than that of traditional RDBMSs. For queries, we leverage the Hive and Presto Query Languages.

- Schema Management
- Presto Query Language
- Hive Query Language
- Programmatic Access with REST API and its Bindings