

Collecting Critical Application Information via Logs

Module Objectives

In this module, you will learn how to:

- Create log messages in your Applications
 - Two methods for viewing log messages
 - Downloading log messages using REST
 - Viewing messages through the Reactor Dashboard
-

Logging

- The Reactor supports logging through standard **SLF4J (Simple Logging Facade for Java)** APIs
- API described at <http://www.slf4j.org/manual.html>

In a Flowlet you can write:

```
private static Logger LOG = LoggerFactory.getLogger(WordCounter.class);

// ...
@ProcessInput
public void process(String line) {
    LOG.info(this.getContext().getName() + ": Received line " + line);

    // ... processing
    LOG.info(this.getContext().getName() + ": Emitting count " + wordCount);
    output.emit(wordCount);
}
```

Viewing Log Messages

Log messages emitted by Application code can be viewed in two different ways

1. Using the Continuity Reactor **HTTP REST interface**

- The REST interface details the available contexts that can be called to retrieve log messages
- Available for *Flows*, *MapReduce* jobs or *Procedures*

2. Using The Continuity Reactor **Dashboard**

- All log messages of an Application can be viewed in the Continuity Reactor Dashboard by clicking the *Logs* button in the Flow, MapReduce or Procedure screens
 - This launches the Log Explorer for the Flow, MapReduce job or Procedure
-

Downloading Logs using REST

Logs that are emitted by any of the *Flows*, *MapReduce* jobs or *Procedures* running in the Continuity Reactor can be downloaded using REST

Send an HTTP GET request:

```
GET <base-url>/apps/<app-id>/<element-type>/<element-id>/logs?start=<ts>&stop=<ts>
```

Parameter

<app-id>

Description

Name of the Application being called

Parameter

<element-type>

Description

One of flows, mapreduce, Or procedures

Parameter

<element-id>

Description

Name of the element (*Flow*, *MapReduce*, or *Procedure*) being called

Parameter

<ts>

Description

Start and *stop* time, given as seconds since the start of the Epoch

Example of Downloading Logs using REST

Return the logs for all the events from the Flow *CountTokensFlow* of the *CountTokens* Application, beginning Thu, 24 Oct 2013 01:00:00 GMT and ending Thu, 24 Oct 2013 01:05:00 GMT (five minutes later)

```
GET <base-url>/apps/CountTokens/flows/CountTokensFlow/  
logs?start=1382576400&stop=1382576700
```

Example Log Output

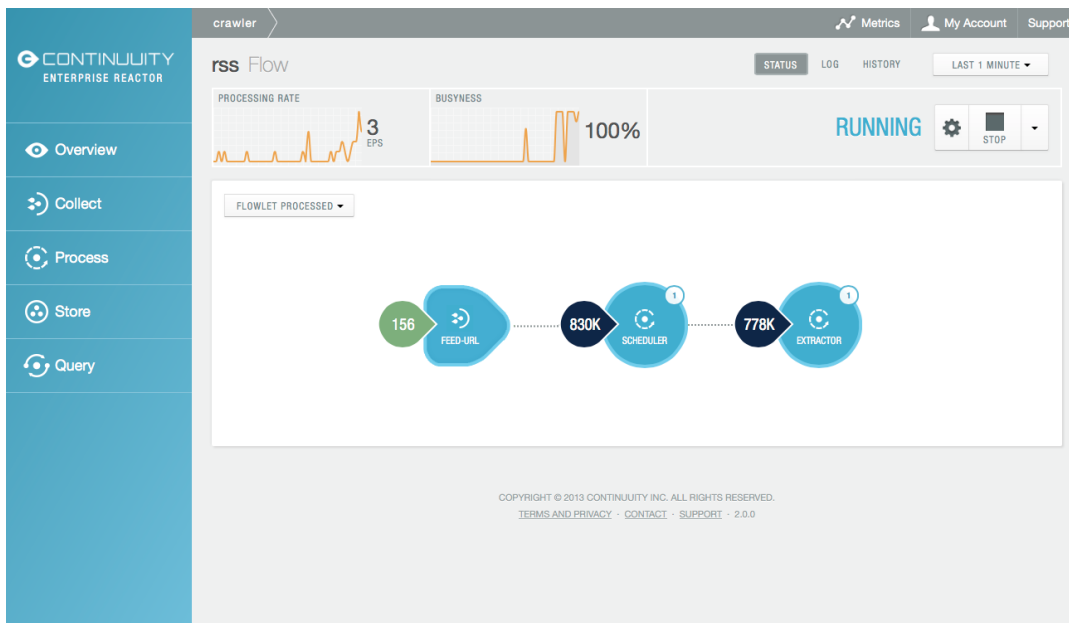
A line of the log may look like this:

```
2013-10-23 18:03:09,793 - INFO [FlowletProcessDriver-source-0-  
executor:c.c.e.c.StreamSource@-1] - source: Emitting line: this is an & character
```

- The context of the log line shows the name of the Flowlet (*source*), its instance number (0) as well as the original line in the Application code
 - The output is formatted as HTML-embeddable text
 - Characters that have a special meaning in HTML will be escaped
 - The character & is escaped as &; turn off escaping by adding the parameter &escape=false to the request URL
-

Launching The Dashboard's *Log Explorer*

To launch, visit the element (*Flow, Procedure, MapReduce*) of interest:



Use the *Log* button in the upper right to launch the *Log Explorer*

Using The Dashboard's *Log Explorer*

The *Log Explorer* pane shows a sample from the logs, with filters for a standard set of filters: *Info*, *Warn*, *Error*, *Debug*, and *Other*:

The screenshot shows the Continuity Enterprise Reactor dashboard. On the left is a blue sidebar with navigation links: Overview, Collect, Process, Store, and Query. The main area is titled 'crawler' and 'rss Flow'. It features a filter bar with tabs for ALL(63), INFO(57), WARN(6), ERROR(0), DEBUG(0), and OTHER(0). Below the filter bar is a log viewer showing a list of log entries. Each entry includes a timestamp, a log level (INFO), a component name, and a message. The log entries are as follows:

Timestamp	Log Level	Component	Message
2014-01-30 00:49:36,466	INFO	[FlowletProcessDriver-extractor-0-executor:c.c.c.f.Extractor@156]	- Got 20 items in feed http://www.readwriteweb.com/rss.xml
2014-01-30 00:49:36,613	INFO	[FlowletProcessDriver-extractor-0-executor:c.c.c.f.Extractor@156]	- Got 25 items in feed http://www.engadget.com/rss.xml
2014-01-30 00:49:36,766	INFO	[FlowletProcessDriver-extractor-0-executor:c.c.c.f.Extractor@156]	- Got 18 items in feed http://news.yahoo.com/rss/
2014-01-30 00:49:36,847	INFO	[FlowletProcessDriver-extractor-0-executor:c.c.c.f.Extractor@156]	- Got 1 items in feed http://feeds.feedburner.com/GamasutraNews/
2014-01-30 00:49:37,734	INFO	[FlowletProcessDriver-extractor-0-executor:c.c.c.f.Extractor@156]	- Got 10 items in feed http://ohmyveggies.com/feed/
2014-01-30 00:49:37,916	INFO	[FlowletProcessDriver-extractor-0-executor:c.c.c.f.Extractor@156]	- Got 10 items in feed http://feeds.feedburner.com/smittenkitchen
2014-01-30 00:49:38,259	INFO	[FlowletProcessDriver-extractor-0-executor:c.c.c.f.Extractor@156]	- Got 21 items in feed http://feeds.gawker.com/gizmodo/full
2014-01-30 00:49:39,331	INFO	[FlowletProcessDriver-extractor-0-executor:c.c.c.f.Extractor@156]	- Got 30 items in feed http://bleacherreport.com/articles/feed
2014-01-30 00:49:39,666	INFO	[FlowletProcessDriver-extractor-0-executor:c.c.c.f.Extractor@156]	- Got 13 items in feed http://feeds.gawker.com/deadspin/full
2014-01-30 00:49:39,948	INFO	[FlowletProcessDriver-extractor-0-executor:c.c.c.f.Extractor@156]	- Got 9 items in feed http://sports.yahoo.com/top/rss.xml

At the bottom of the dashboard, there is a copyright notice: COPYRIGHT © 2013 CONTINUITY INC. ALL RIGHTS RESERVED. Below this are links for TERMS AND PRIVACY, CONTACT, and SUPPORT, followed by the version number 2.0.0.

Module Summary

You should now be able to:

- Create log messages in your Applications
 - Download log messages using REST
 - View messages using the Reactor Dashboard
-

Module Completed