



EMC® Watch4net®

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Delta Rate Filter Administration Guide

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Preface

Purpose

The purpose of this guide is to provide configuration and usage information about the Delta Rate Filter.

Intended Audience

APG administrators and system integrators, as well as users responsible of managing data collection configuration should read this document.

Prerequisites

- The *APG* collector manager must be installed. This filter module may be used with *APG* versions 5.0 and later.

Document Organization

1. Description	A description of this filter function.
2. Installation	Instructions on how to install this filter.
3. Configuration	Instructions on how to configure this filter.

Common Abbreviations and Acronyms

Not Applicable

There are no abbreviations used in this document.

Where to get help

EMC support, product, and licensing information can be obtained as follows:

PRODUCT INFORMATION - For documentation, release notes, software updates, or information about EMC products, go to EMC Online Support at:

<https://support.emc.com>

TECHNICAL SUPPORT - Go to EMC Online Support and click Service Center. You will see several options for contacting EMC Technical Support. Note that to open a service request, you must have a valid support agreement. Contact your EMC sales representative for details about obtaining a valid support agreement or with questions about your account.

Description

The Delta Rate Filter is used to calculate rates and deltas on raw values. This filter may be useful when using stateless collectors and a DELTA or RATE calculation is required. Several calculation mode variations are available:

- Pure Delta calculation (HandleDeltaModule): Handles delta. No roll over support. Delta is negative or positive.
- Positive Delta calculation, no roll over support: Handles positive deltas only. If the new value is less than the old, delta = new value.
- Positive Delta with roll over calculation: Handles positive delta with roll over support. The maximum counter value must be specified. $\Delta = (\text{MaxValue} - \text{LastValue}) + \text{NewValue}$.
- Pure Rate calculation: Handle values as rate. May be positive or negative. No roll over is supported (result value will be negative if the new value is less than the previous).
- Positive Rate calculation: Handles values as a positive rate. No roll over is supported. If New-Value is less than OldValue: $\text{Rate} = \text{NewValue} / \text{delta}(\text{Timestamp})$.

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Installation

The Delta Rate Filter module may be installed like any other module. The package name is: “delta-rate-filter”.

Then, edit the `APG/Collecting/Collector-Manager/Default/conf/collecting.xml` file (location may vary depending upon installation location and Collector-Manager instance name) and insert the following line in the existing configuration. Please refer to the *APG* Backend Administration Guide if unsure on how to do this.

```
<?xml version="1.0" encoding="UTF-8"?>
<config ...>
  <connectors>
    ... connector already defined ...
  </connectors>
  <filters>
    ... next filter ...
    <filter enabled="true" name="MyFilter" next="NextFilter"
      conf="Delta-Rate-Filter/Default/conf/MyFilterConf.xml" />
    ... previous filter ...
  </filters>
```

The “MyFilterConf.xml” configuration file should be located in the APG/Collecting/Delta-Rate-Filter/Default/conf/ directory. This file will contain your customized configuration for this filter. Create and edit as explained in this document’s Configuration section. Then restart the *APG* Collector Manager service.

Configuration

This section contains a configuration example as well as the description of the available configuration elements.

1 Configuration example

Let's use the following example in order to create a configuration for this filter (Delta-Rate-Filter/Default/conf/MyFilterConf.xml):

```
<?xml version="1.0" encoding="UTF-8"?>
<tns:delta-rate-config xmlns:tns="http://www.example.org/delta-rate-filter" xmlns:xsi="http://www.w3.org
/2001/XMLSchema-instance" xsi:schemaLocation="http://www.example.org/delta-rate-filter_delta-rate-filter
.xsd">
  <tns:handled-variables>
    <tns:variable as="rate" name="testVariable1"/>
  </tns:handled-variables>
  <tns:handling-modules>
    <tns:handling-module handles-as="rate" module-class-name="com.watch4net.apg.v2.collector.plugins.
deltaratefilter.handlingmodules.HandleRateModule"/>
    <tns:handling-module handles-as="deltaP" module-class-name="com.watch4net.apg.v2.collector.plugins
.deltaratefilter.handlingmodules.HandleDeltaPositiveWithRollOver" config-file="conf/positive-delta-rate-
with-rollover.xml"/>
  </tns:handling-modules>
</tns:delta-rate-config>
```

Elements and attributes are as follows:

- `<tns:delta-rate-config...>`: The base configuration element. Do not edit this.
- `<tns:handled-variables>` : The list of variables explicitly handled by this filter. This section is required, even though it may be empty (no `<tns:variable>` defined).
- `<tns:variable>` : The raw values to handle with this filter, specified by their name property (the name attribute). The way these variables are handled is defined by the as attribute. The as attribute can contain any value, as long as it is mapped in the `<tns:handling-modules>` section, where the handling behaviour is defined.
- `<tns:handling-modules>` : This section defines the modules used to handle values. It must contain at least 1 handling-module.
- `<tns:handling-module>` : This element configures a value handling module. This module contains the logic to handle the variables defined in the `<tns:handled-variables>` section. The `<tns:variable>` with the attribute as value set to this `<tns:handling-module>` handles-as attribute will be handled by this module. Also, any raw value with a property named "as" will be handled by this module if the module configuration attribute handles-as matches the raw value's "as" property value. The handles-as attribute is required. The module-class-name attribute specifies the module's java full class name; it is mandatory. The config-file attribute is used only when the specified handling module requires a configuration file.

The available handling modules are:

Class prefix: com.watch4net.apg.v2.collector.plugins.deltaratefilter.handlingmodules.

- HandleDeltaModule
- HandleDeltaPositiveModule
- HandleDeltaPositiveWithRollOver
- HandleRateModule
- HandleRatePositiveModule

Edit the configurable handling module configuration (required only for: HandleDeltaPositiveWithRollOver module). In this particular case, the file should be named “conf/positive-delta-rate-with-rollover.xml”.

The HandleDeltaPositiveWithRollOver module use a similar configuration file format:

```
<?xml version="1.0" encoding="UTF-8"?>
<tns:handle-delta-rate-with-rollover-config calculate-rollover-from-last-value="true" xmlns:tns=
"http://www.example.org/positive-delta-rate-with-rollover" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance" xsi:schemaLocation="http://www.example.org/positive-delta-rate-with-rollover.../positive-delta-
rate-with-rollover.xsd">
  <tns:min-counter>
    <tns:min-counter-value>-10</tns:min-counter-value>
  </tns:min-counter>
  <tns:max-counter>
    <tns:max-counter-value>10</tns:max-counter-value>
  </tns:max-counter>
</tns:handle-delta-rate-with-rollover-config>
```

- `<tns:handle-delta-rate-with-rollover-config>` : Base configuration element. Required. The `calculate-rollover-from-last-value` attribute specifies if the value output after a counter rollover (counter wrap around) must be calculated from the last known valid value (true), or from the counter's minimum value (false).
- `<tns:min-counter>` : Contains a choice of either `<tns:min-counter-value>` or `<tns:min-counter-property>`.
- `<tns:min-counter-value>` : Contains the minimum counter value. May be a float or an integer. This value will be used to calculate the delta/rate after a counter overflow. Overflow is assumed when the last raw value's value is smaller than the previous one.
- `<tns:min-counter-property>` : Specifies the property (in a raw value) used to specify the counter's minimum value. The handled raw value's properties will be inspected. If one of the property name matches this value, the property value will be used as a counter minimum value, used for the delta/rate calculation if a counter overflow occurs.

- `<tns:max-counter>` : Contains a choice of either `<tns:max-counter-value>` or `<tns:max-counter-property>`.
- `<tns:max-counter-value>` : Contains the maximum counter value. May be a float or an integer. This value will be used to calculate the delta/rate after a counter overflow. Overflow is assumed when the last raw value's value is smaller than the previous one.
- `<tns:max-counter-property>` : Specifies the property (in a raw value) used to specify the counter's maximum value. The handled raw value's properties will be inspected. If one of the property name matches this value, the property value will be used as a counter maximum value, used for the delta/rate calculation if a counter overflow occurs.