



EMC[®] Watch4net[®]

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Real Time Grapher User Guide

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EMC²

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Preface

The purpose of this guide is to provide information about the real time module of the *APG* graphical user interface and the way to use it. This guide includes all necessary information for any user of the *APG Real Time Grapher*.

Prerequisites

It is assumed that the *APG* web application has been properly installed and configured on the server and that a recent web browser has been installed on the local machine. Supported browsers include Firefox 2/3 and Internet Explorer 6 and 7.

Document Organization

1. Interface Overview	This section describes the <i>APG Real Time Grapher</i> user interface and explains how to use it.
2. Configuration	This section explains how to configure the <i>APG Real Time Grapher</i> .

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.

Interface Overview

APG Real Time Grapher allows you to get Real Time performance data (up to the second) from any *SNMP* capable device. The interface has been designed to be as simple as possible and requires almost no configuration at all. You can access the *APG Real Time Grapher*:

- From the Tools menu.
- Through a direct url: <http://APGserverIP:58080/APG/grapher.jsp> (an agent name can be passed using the `agent` parameter)

The interface is divided in 3 parts:

- Some agent properties (only showing up when an agent has been selected)
- The grapher settings (see [1](#) on page [1](#))
- The Real Time graph (see [2](#) on page [3](#))

1 Grapher Settings

The settings panel let you choose the agent and what metrics you want to poll from it. The agent can be selected using its `device` name or one of its `ip` address known by *APG*. The agent selected heavily

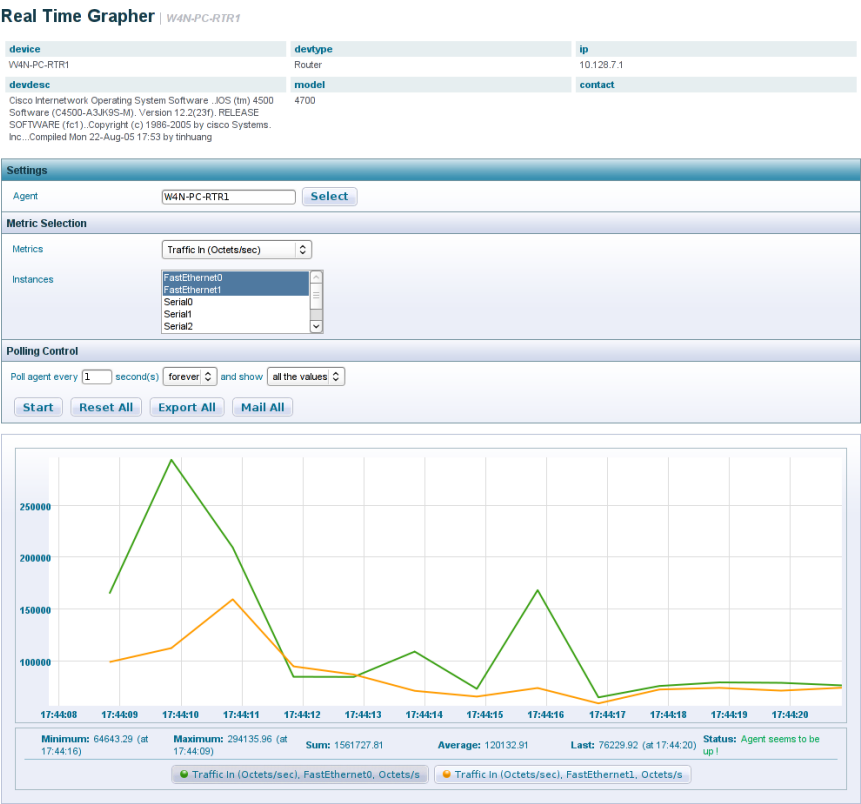


Figure 1: Interface Overview

relies on the *APG* database and leverages your existing polling configuration. Please note that agent selection is assisted by a dynamic suggestion popup as soon as you type something in the field.

Once selected, if the agent is valid for Real Time polling, the list of available metrics shows up.

Simply select the one you need, choose one or multiple instances and you are now ready to start polling.

The polling control section let you choose how you want to poll the selected metric. You can choose how often and how long you want the device to be polled. You can also change the time range if you are only interested in the last few minutes.

Finally, simply press *Start* and the data will shows up in the graph. At any time you can clear all the collected data pressing the *Reset All* button or export it using the *Export All* or *Mail All* buttons (the email address the data is sent to is the one configured in your *APG* settings).

2 The Real Time Graph

The Real Time Graph shows collected data as soon as it is retrieved from the device. By default, it shows all the collected values but you can fix the time frame in the *Polling Control* settings section.

Each time the graph gets updated, some statistics are also refreshed. At any time you can see the minimum, the maximum, the sum, the average and the last value, along with the date of the last occurrence withing the displayed time frame. These statistics only refer to the instance which has been selected in the legend (with a grayed background). Simply click on another instance to get statistics on it.

The status of the agent is also reported. It shows whether the last request succeeded or not. When a request fails, the reason will show up there.

Configuration

1 Metrics Configuration

The metrics configuration is the file where all the metrics get defined. By default, it is located at <APG>/Custom/WebApps-Resources/Default/real-time-grapher/metrics.xml. Here is a short example:

```
<?xml version="1.0" encoding="UTF-8"?>
<metrics xmlns="http://www.watch4net.com/APG-RT/Metrics"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <metric
    category="My_Metrics" name="MyMetricId" display-name="My_Metric"
    filter="devtype='Host'" description="My_Description."
    xsi:type="SNMPBaseMetric" as="VALUE" oid="1.2.3.4.5.6.7.8" />
</metrics>
```

Each metric is declared in a `metric` element. There are 3 types of metrics (the type is specified in the `xsi:type` attribute), each of them support specific attributes.

1.1 Metric

This is the base type for every metric which is available on a device to poll. Every metric type supports at least the following attributes.

Attribute	Description
name	The identifier of a metric. It must be unique.
display-name	The display name is the name that is exposed to the user. It doesn't have to be unique and should be as meaningful as possible to the user.
category	An optional category this metric belongs to. It will be used to classify metrics. If the category name is <code>hidden</code> , the metric will not be shown in the list but can be referenced by an expression.
filter	An optional filter to determine on which device this metric should be available.
description	A optional description of the metric.
unit	The unit of the metric, if any.
min	The minimum value the metric can have, if any. This value will be used to force the vertical axis of the graph.
max	The maximum value the metric can have, if any. This value will be used to force the vertical axis of the graph.
criticalThreshold	The critical threshold the metric can have (if any). It will be shown as a red dashed line on the graph.
majorThreshold	The major threshold the metric can have (if any). It will be shown as an orange dashed line on the graph.
criticityAscending	This attribute is used when either major or critical threshold is missing or if they are equals.

defaultValue

An optional value to use when the metric value is unavailable.

1.2 SNMPBaseMetric

A *SNMPBaseMetric* metric is a metric coming from a single *SNMP OID* (e.g. *sysUptime*).

Attribute	Description
	This attribute describes how we should handle the retrieved values. Possible values are: • RATE: Poll the metric as a rate. • RATEP: Poll the metric as a positive rate. • DELTA: Poll the metric as a positive delta. • DELTAP: Poll the metric as a positive delta. • VALUE: Poll the metric as a simple value.
as	
oid	The <i>OID</i> of the value.

1.3 SNMPIndexedMetric

An *SNMPIndexedMetric* metric is a specific *SNMPBaseMetric* which handles indexed metrics which is typically contained in a table and which has multiple instances.

Attribute	Description
instanceNameOid	This is the instance name root <i>OID</i> . The actual metric instance names will be retrieved walking the agent from this root <i>OID</i> .
instanceNameFilter	This optional attribute is used to filter out some instances retaining only those which name matches the regular expression.

1.4 SimpleExpressionMetric

SimpleExpressionMetric metrics can be used to create values from several others for a given instance. Please note that referenced metric instances must be consistent.

Attribute	Description
expression	The metric expression. Any valid <i>JavaScript</i> expression is allowed. References will be substituted actual values for a given instance.
references	The list of referenced metrics. Any of them can be used in the expression then.

2 Agents Finders Configuration

The agent finders configuration file defines several way to find how agents should be configured (*ip*, *port*, *community string*, ...). By default, it is located at <APG>/Custom/WebApps-Resources/Default/real-time-grapher/agents.xml. Here is a short example:

```
<?xml version="1.0" encoding="UTF-8"?>
<agent-finders xmlns="http://www.watch4net.com/APG-RT/Agents"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <agent-finder xsi:type="DistributionFileAgentFinder">
    <distribution-file-path>path/to/polling-distribution.xml</distribution-file-path>
  </agent-finder>
</agent-finders>
```

Each agent finder is declared in a <agent-finder element. There are multiple types of finders (the type is specified in the *xsi:type* attribute), each of them support specific attributes.

2.1 DistributionFileAgentFinder

This finder will browse *APG SNMP Poller* configuration file to find agent configuration.

Element	Description
distribution-file-path	The path of the polling distribution file. This path can be either relative to the configuration location or absolute.

2.2 SmartsAgentFinder

This finder connects to a *EMC² Smarts InCharge* domain to retrieve *SnmpAgent* configuration.

Attribute	Description
agent-timeout	The timeout value to use when querying the agent (in milliseconds).
agent-retries	The number of retries querying the agent.
domain-timeout	The timeout value to use when querying the <i>EMC² Smarts InCharge</i> domain (in milliseconds).

Element	Description
broker	The broker location.
broker-username	The user name to connect to the broker (if broker authentication is required).
broker-password	The password to connect to the broker (if broker authentication is required).
domain	The domain name.
domain-username	The user name to connect to the domain.
domain-password	The password to connect to the domain.

2.3 SamAgentFinder

This finder connects to a *SAM* domain, finds the agent instance and then connects to the correct domain to retrieve *SnmpAgent* configuration.

Attribute	Description
agent-timeout	The timeout value to use when querying the agent (in milliseconds).
agent-retries	The number of retries querying the agent.
domain-timeout	The timeout value to use when querying the <i>EMC² Smarts InCharged</i> domain (in milliseconds).

Element	Description
domain	The <i>SAM</i> domain name to use.
smDiscoveryFile	The <i>SmDiscovery</i> collector configuration file, which provides user name and password for each domains.