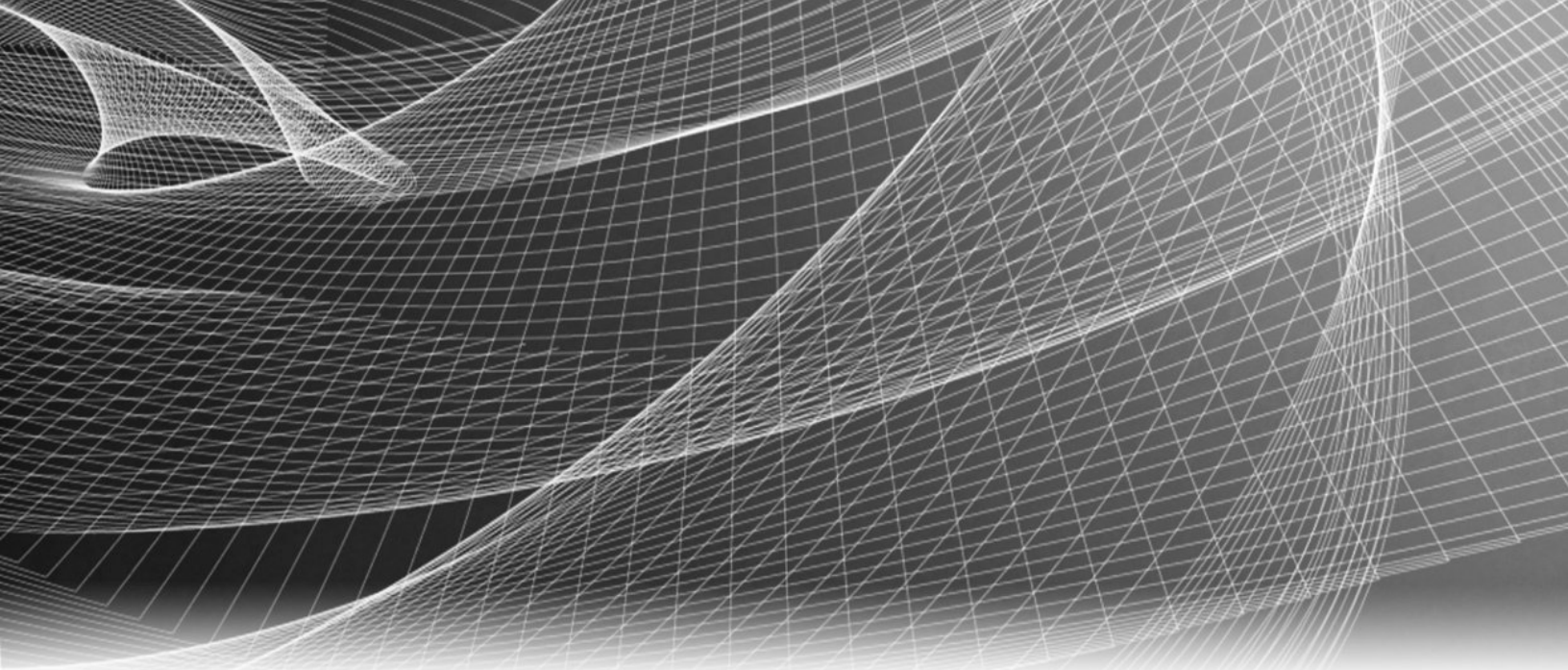




EMC® Watch4net®

Version 6.4u2

Centralized Management Guide

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Preface

Purpose

This guide provides information about configuring and using Centralized Management.

Intended Audience

This guide is for anyone who will use the Centralized Management. Although most of the options are explained in the interface, this document covers the major tasks of setting up and using Centralized Management.

Prerequisites

This guide assumes Centralized Management is installed and running on the web server, and WebServiceGateway is installed and running on any servers that will be managed by Centralized Management.

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.

1

Access

The Centralized Management can be accessed only by *APG* global administrators.

To access the interface you can log on from the *APG*frontend administration panel, or go to this URL, replacing `http` with `https` and `58080` with the *APG* port if needed:

`http://apg.webserver:58080/centralized-management/`.

For logon credentials enter your *APG* user name and password.

2

Quick Start

This section provides a brief overview of the interface, and contains links to more detailed descriptions.

1 Register a Server

The first time the interface is loaded it displays the Server Configuration panel. From here you register the local and remote *APG* servers that will be managed by Centralized Management.

If you're using a basic installation where all of the modules are on the same server, you can check that the connection is successful on the top right corner of the Server Configuration area and press Save. If a configuration does not appear or is incorrect, enter the correct URL and credentials and validate the connection before saving.

Thursday, September 29, 2011

APG Servers Configuration

Register a Server

▼ w4n-dl-apg-qualif.int.watch4net.net [localhost]

- * Server HostName: w4n-dl-apg-qualif.int.watch4net.net
- Server Alias:
- Server Description: APG server on which the centralized management GUI has been installed
- * Gateway URL: https://localhost:48443/
- Username: admin
- Password:
- SSL Validation: ☐
- * Operating System: linux-x86
- Health Values: real-time and historical data
- Report in APG:

Save
write current configuration

Figure 1: First Server Configuration

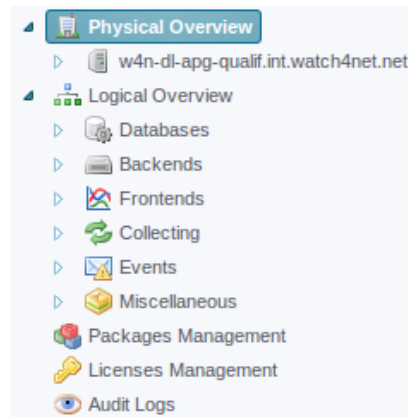


The first icon in the section header shows the current connection status. You can mouse over it to see additional information.

Check the other settings, especially the Operating System to see that they are correct. See [Remote Server Configuration](#) on page 11.

2 Tree Navigation

After you register the first server, Centralized Management connects to it and recovers information such as the server status, the modules installed on it, and provides access to it through the navigation tree on the left.



Physical Overview has a list of the registered servers and the modules installed on each. To access a server, click its name.

Logical Overview shows the distribution of the modules based on their categories.

Packages and **Licenses** give you access to managing files on the Centralized Management server, and synchronization options.

Audit Logs gives access to audit files on the configured servers.

There are two types of icons for the modules in the tree. You will see  for a module that owns a service, and  for others. This makes it easier to identify modules with log files and service management tools.

You can resize the tree by dragging its right border, and hide it by double-clicking it. The tree keeps the same size the next time you log in on the same computer.

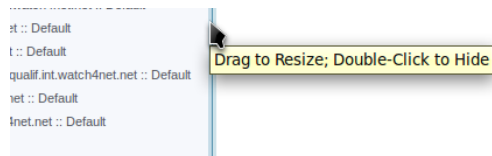


Figure 2: Resizing the Tree

3 License Installation

Centralized Management enables you to keep all your *APG* licenses in one place and automatically dispatch them to the proper servers.

To recover the archive that contains your licenses, see page [39](#).



The License File Import tool uses some features that are available in the version 4.3 of the *License Manager* module, so make sure that version 4.3 or later is installed.

4 Module Management

You can manage modules from the Server page. The Server page gives you an overview of the server status and its modules, services and licenses.

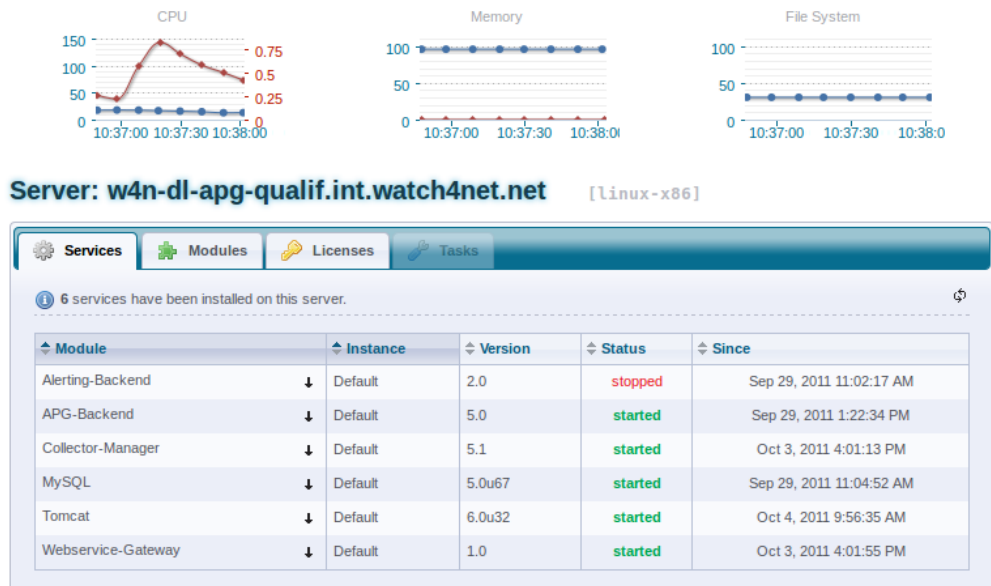


Figure 3: Server Page

The area at the top of the page contains real-time charts displaying the server health. You can configure the charts in the Server settings (see [Health Values](#) on page 13) or User settings (see [User Settings](#) on page 59).

From the tabs you can access your currently available services, installed modules, installed licenses and scheduled tasks. Tasks requires a specific module to be installed and started before it becomes available. For details about each page see [Server Management](#) on page 15.

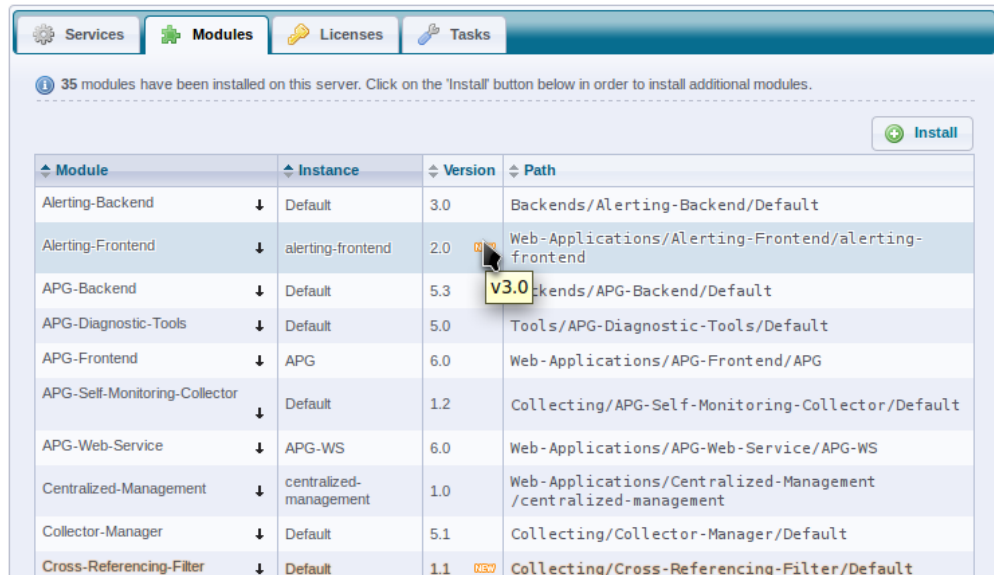
5 Services and Modules Tabs

The Services panel displays the state of services and the estimated time for startup or shutdown.



On Windows systems, some services such as *MySQL* may not display these times.

The Modules panel displays the installed modules and their services. It also highlights the ones that have updates.



35 modules have been installed on this server. Click on the 'Install' button below in order to install additional modules.

[Install](#)

Module	Instance	Version	Path
Alerting-Backend	Default	3.0	Backends/Alerting-Backend/Default
Alerting-Frontend	alerting-frontend	2.0	Web-Applications/Alerting-Frontend/alerting-frontend
APG-Backend	Default	5.3	Backends/APG-Backend/Default
APG-Diagnostic-Tools	Default	5.0	Tools/APG-Diagnostic-Tools/Default
APG-Frontend	APG	6.0	Web-Applications/APG-Frontend/APG
APG-Self-Monitoring-Collector	Default	1.2	Collecting/APG-Self-Monitoring-Collector/Default
APG-Web-Service	APG-WS	6.0	Web-Applications/APG-Web-Service/APG-WS
Centralized-Management	centralized-management	1.0	Web-Applications/Centralized-Management/centralized-management
Collector-Manager	Default	5.1	Collecting/Collector-Manager/Default
Cross-Referencing-Filter	Default	1.1	Collecting/Cross-Referencing-Filter/Default

Figure 4: Modules Panel

You can click any line to see details about a module. The module information is displayed in a new page. You can quickly move between modules to start their services and check their logs.

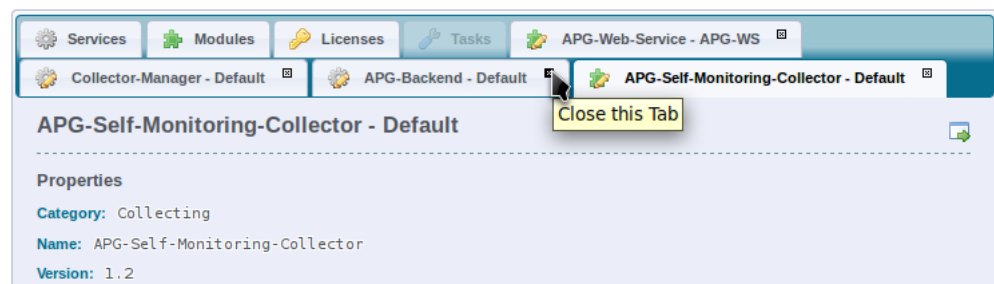


Figure 5: Additional Tabs

6 Module Installation

You install new modules through the server's Modules panel.

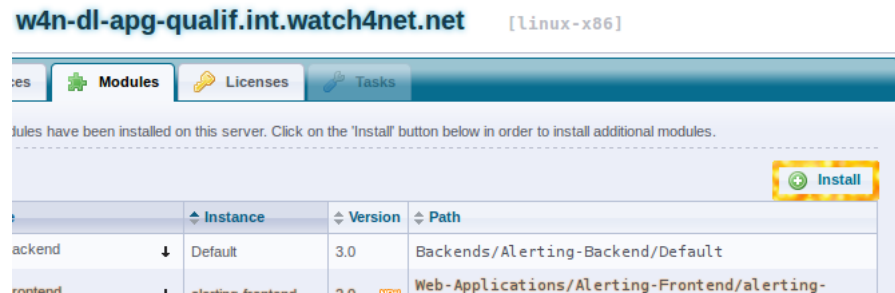


Figure 6: Module Install Access

1. First select the packages you want to install.
The packages available for the server are displayed, based on its architecture as defined in its [Operating System](#) configuration on page 13. They are grouped by category, and you can select one or more categories.

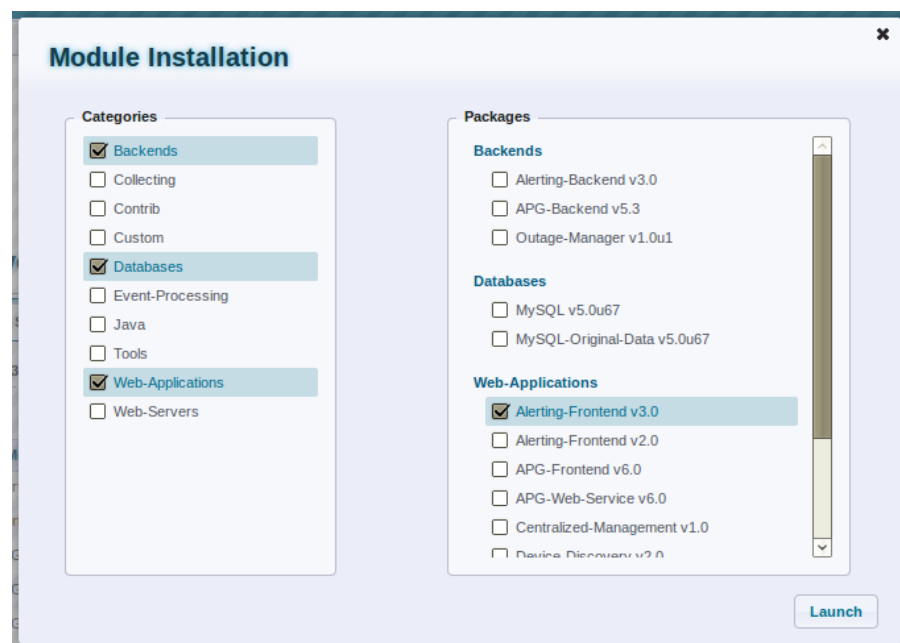


Figure 7: Module Selection

2. Select the categories for the modules you want to install and their corresponding packages and click Launch.

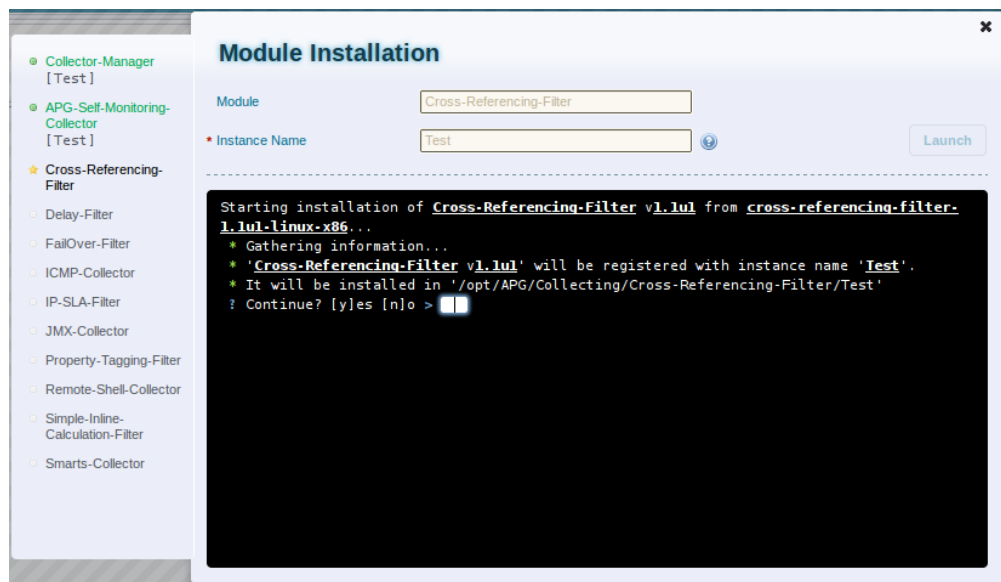


Figure 8: Module Installation

The list on the left shows the installation progress. The module in green has already been processed. The one with the star is the current one.

The installation process is the same as the one from the command line interface. There are multiple ways to answer a question. You can:

- enter the full choice in the input field and press Enter
- enter the highlighted character using the same case and press Enter
- click an answer in the list



You must answer a question within 5 minutes or the installation of the module will be cancelled. You can install the module at a later time.

Warnings and errors are displayed in the panel, with additional details in the log files of the Webservice Gateway on the remote server.

7 Update and Removal

You must update or remove a module from the module. You can remove a module by clicking Uninstall. When an update is available, a notification appears.

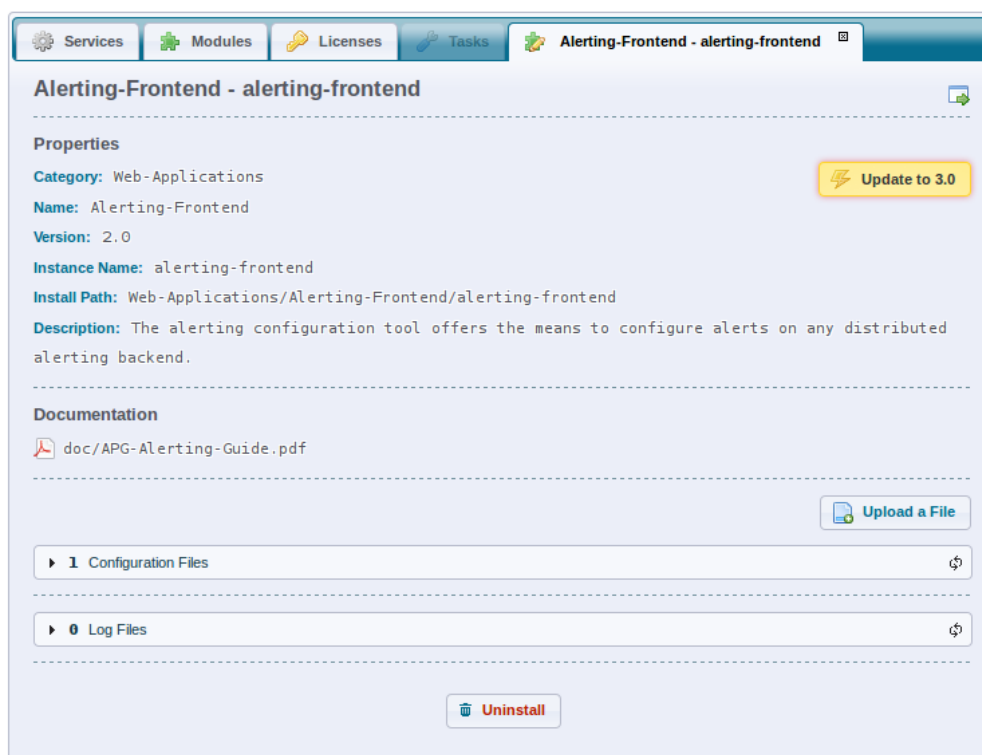


Figure 9: Module Management

3

Remote Server Configuration

This section describes how to register remote servers in Centralized Management. To configure a remote server, on the top menu click Configuration.

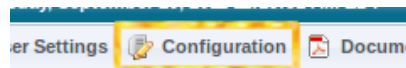


Figure 10: Servers Configuration Access

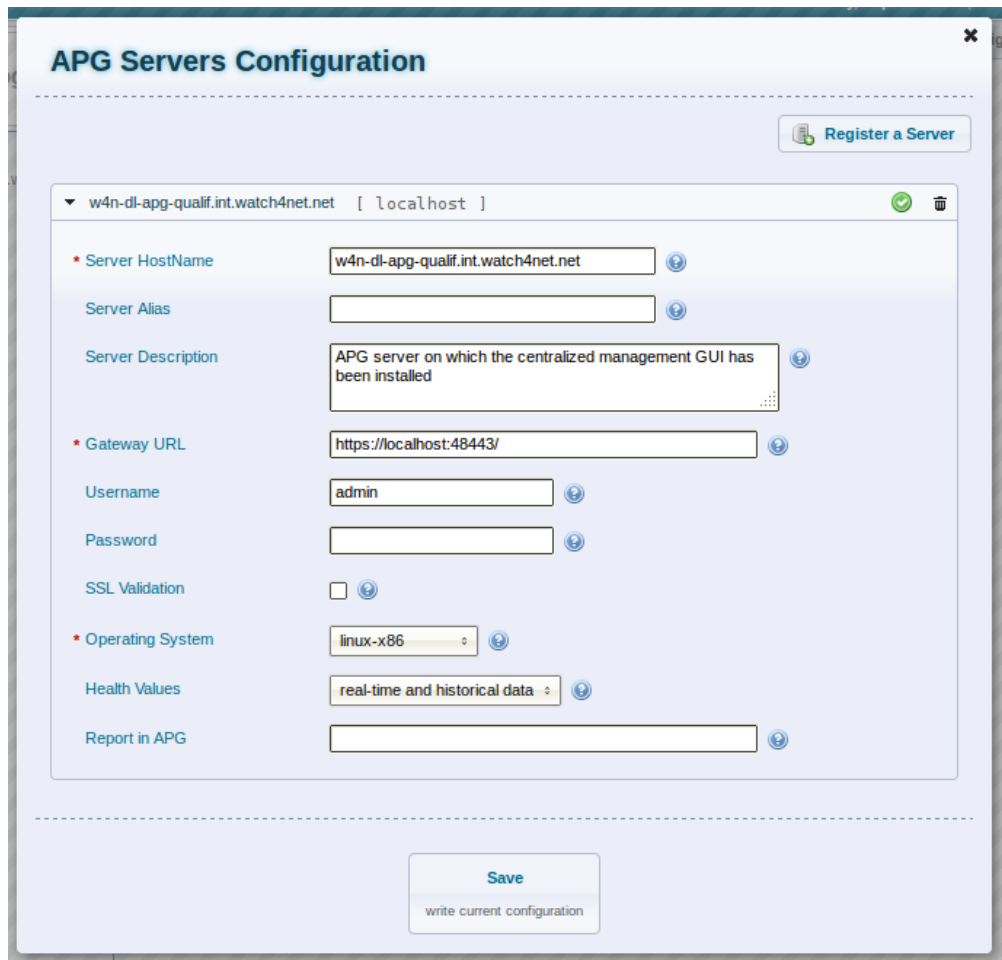
The configured servers are displayed with their connection state. You can click a section name to display or hide its settings.

To register additional servers click the corresponding button and enter the details about the server. Some settings are not mandatory, but may be required depending on the remote server configuration for Centralized Management to successfully connect to the remote server.

1 Remote Server Identification

Server HostName, Server Alias and Server Description identify the remote server throughout the interface. It is important to set them properly as they impact the server display.

Server HostName links the server to a device in the *APG* database. So in order to get historical data for the device, we recommend you use the same name as the one used by *APG*, which is the server hostname. You can confirm this by looking at *APG* Health reports in the frontend. Server HostName is also used as the server display name if you do not create an alias.



The screenshot shows the 'APG Servers Configuration' window. At the top right is a 'Register a Server' button. Below it is a dropdown menu showing 'w4n-dl-apg-qualif.int.watch4net.net' and '[localhost]'. The main configuration area contains the following fields:

- Server HostName**: w4n-dl-apg-qualif.int.watch4net.net
- Server Alias**: (empty)
- Server Description**: APG server on which the centralized management GUI has been installed
- Gateway URL**: https://localhost:48443/
- Username**: admin
- Password**: (empty)
- SSL Validation**: ☐
- Operating System**: linux-x86
- Health Values**: real-time and historical data
- Report in APG**: (empty)

At the bottom right is a 'Save' button with the text 'write current configuration' below it.

Figure 11: Servers Configuration

Server Alias customizes the server display name in Centralized Management without any other impact. If you do not create a Server Alias, the hostname is used.

Server Description is displayed on the Centralized Management home page in the Physical Overview under each server name. It can be left blank or used to describe a server role.

2 Remote Server Connection

Remote connection is handled by the Gateway URL, Username, Password and SSL Validation settings. After you configure these settings, you can click the connection check icon in the server section header (see figure [First Server Configuration](#) page 4), to perform a check.

Gateway URL contains the URL that points to the remote WebService Gateway. The default configuration is: `https://server.name.or.ip:48443/`. The WebService Gateway service must be running on the remote server for this to be working.

Username is the one from the Gateway credentials. It's configured at its level, and described in its own documentation. Default value is `admin`.

Password is the one from the Gateway credentials. It's configured at its level, and described in its own documentation. Default value is `changeme`.



On an already configured server, *Password* field is never displayed again. There is no need to fill it before saving: if left blank, it won't be removed, but rather left untouched. The only means to empty a saved password is to empty the username as well.

SSL Validation can be checked in order to validate the SSL certification before instantiating communication. When using a self-signed certificate, it should be left unchecked. When using a certificate recognized by a certificate authority, it should be checked.

3 Remote Server Setup

The next options allow you to further configure the server in the Centralized Management. They are not mandatory, except for the Operating System.

Operating System will be used to select the packages to send and use on this server. Be sure to set it to the correct value, as setting it to a wrong value causes invalid or corrupted installations.

Health Values configures the type of data that will be recovered and displayed for this server. Real-time data is collected through the APG Self-Monitoring Collector which provides real-time access to the server metrics. Historical data is retrieved from the usual APG database(s) and is also based on the metrics collected by that collector. Databases are defined in the web application context file. See the section on page 61. The physical overview displays historical data if it is enabled. The per-server view displays real-time data if it is enabled, and if not it falls back to historical data. If it is disabled, charts are hidden.

Report in APG can be used as a shortcut to access a report in the APGfrontend. Enter the targeted URL and this creates a link to it in the global physical overview. For example, `http://apg.server.name.or.ip:58080/APG/#0-4-52664238`.

Server Management

1 Charts

The charts on the top of the page can be configured to display a combination of historical data and real-time data, or historical data only or can be hidden. There are two levels of configuration for this: on a server basis (see [Health Values](#) page 13, or per-user (see [Chart Refresh](#) page 60).

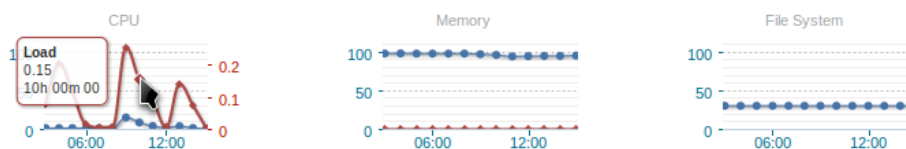


Figure 12: Server Charts

2 Tabs

Each of the initial tabs cover a specific aspect of the server management. This section discusses the way dynamic tabs are added to the navigation bar.

The Services, Modules and Tasks tabs create dynamic tabs based on the contents of their tables. Each line of the tables describes an item that you can click to see more details about.

7 services have been installed on this server.

Module	Instance	Version	Status	Since
Alerting-Backend	↓ Default	3.0	stopped	Sep 29, 2011 11:02:17 AM
APG-Backend	↓ Default	5.3	started	Oct 4, 2011 12:55:00 PM
Collector Manager	↓ Default	5.1	started	Oct 5, 2011 9:45:43 AM
MySQL	↓ Default	5.0u67	started	Sep 29, 2011 11:04:52 AM

Figure 13: Adding Tabs

Clicking a line opens a new tab or moves the focus to it if it is already open. A module never generates two tabs, even if you open it from the Services panel and the Modules panel.

3 Services

The services panel displays the modules that have a service configuration, including modules whose service entry has been removed.

The table displays the module information, its current service status, and an estimate of its last status change. The status column can have multiple values depending on both the service properties, and its current state.

- **started**: the service is currently running
- **stopped**: the service has been stopped
- **not installed**: the service has been removed and is not available anymore
- **unknown**: the current status cannot be determined. This is usually caused by a service that requires administrative privileges to run, such as the Collector Manager when you use the ICMP Collector on Unix.

8 services have been installed on this server.

Module	Instance	Version	Status	Since
Alerting-Backend	↓ Default	3.0	stopped	Sep 29, 2011 11:02:17 AM
APG-Backend	↓ Default	5.3	started	Oct 4, 2011 12:55:00 PM
Collector Manager	↓ Default	5.1	unknown	-
Event-Processing-Manager	↓ Default	1.1	not installed	-
MySQL	↓ Default	5.0u67	started	Sep 29, 2011 11:04:52 AM
Task-Scheduler	↓ Default	1.0	started	Oct 5, 2011 3:52:17 PM
Tomcat	↓ Default	6.0u32	started	Oct 5, 2011 2:42:49 PM
Webservice-Gateway	↓ Default	1.0	started	Oct 5, 2011 9:34:43 AM

Figure 14: Services Panel



Services that require administrative privileges cannot be managed through Centralized Management.

Every time the services panel is displayed, is automatically refreshed. You can manually reload the Services panel by clicking Refresh on the top of the panel.

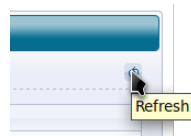


Figure 15: Reloading Services Panel

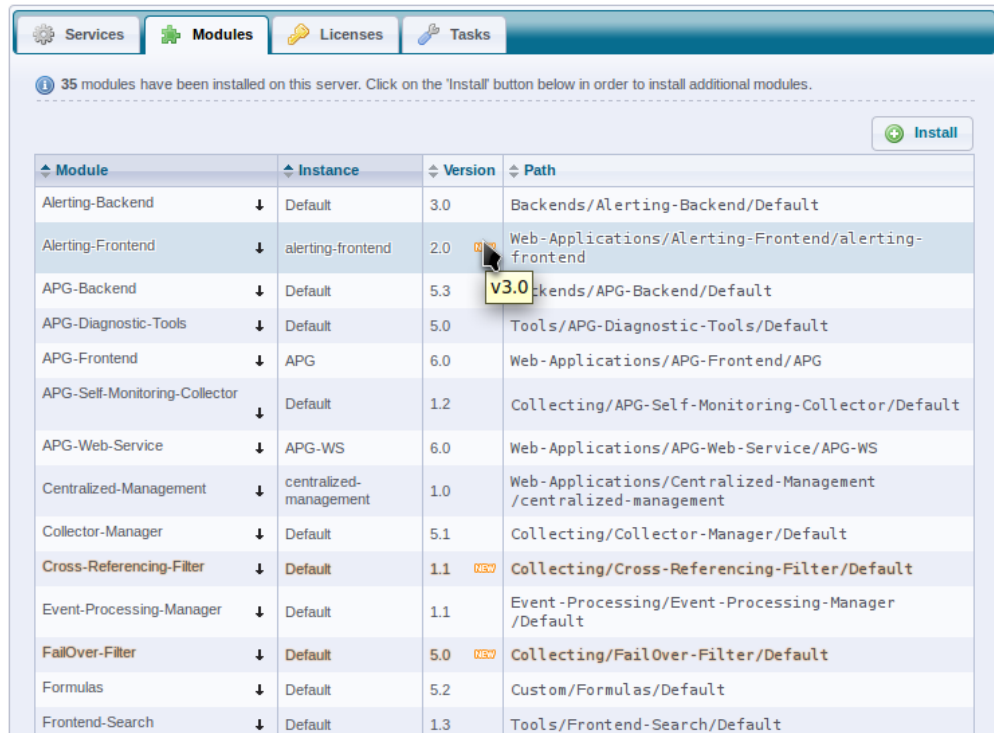
You can drill down to the Service page through the icon on the left of the module name. This does not open another tab but replaces the current page with the new module details.

Module		Instance	Version	Status
Alerting-Backend	↓	Default	3.0	stop
APG-Backend	↓	Default	5.3	start
Collector-Manager	⚙	Default	5.1	unknown
Event-Processing-Manager				not in
MySQL	↓	Default	5.0u67	start

Figure 16: Moving to Service Page

4 Modules

The Modules panel displays a list of the installed modules and their services, and the ones that have updates.



35 modules have been installed on this server. Click on the 'Install' button below in order to install additional modules.

[Install](#)

Module	Instance	Version	Path
Alerting-Backend	Default	3.0	Backends/Alerting-Backend/Default
Alerting-Frontend	alerting-frontend	2.0	Web-Applications/Alerting-Frontend/alerting-frontend
APG-Backend	Default	5.3	Backends/APG-Backend/Default
APG-Diagnostic-Tools	Default	5.0	Tools/APG-Diagnostic-Tools/Default
APG-Frontend	APG	6.0	Web-Applications/APG-Frontend/APG
APG-Self-Monitoring-Collector	Default	1.2	Collecting/APG-Self-Monitoring-Collector/Default
APG-Web-Service	APG-WS	6.0	Web-Applications/APG-Web-Service/APG-WS
Centralized-Management	centralized-management	1.0	Web-Applications/Centralized-Management/centralized-management
Collector-Manager	Default	5.1	Collecting/Collector-Manager/Default
Cross-Referencing-Filter	Default	1.1	Collecting/Cross-Referencing-Filter/Default
Event-Processing-Manager	Default	1.1	Event-Processing/Event-Processing-Manager/Default
FailOver-Filter	Default	5.0	Collecting/FailOver-Filter/Default
Formulas	Default	5.2	Custom/Formulas/Default
Frontend-Search	Default	1.3	Tools/Frontend-Search/Default

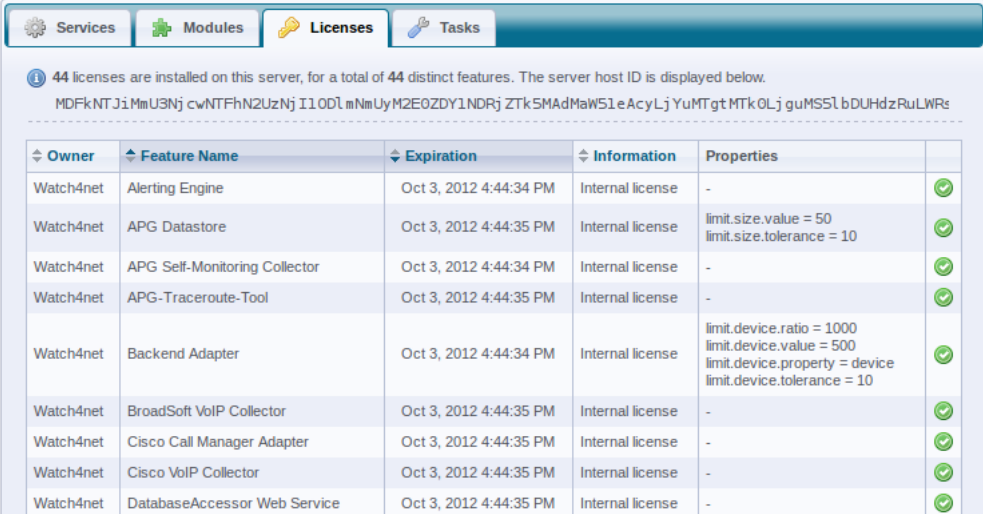
Figure 17: Modules Panel

To install a module see [Module Installation](#) on page 21.

5 Licenses

To see the Licenses panel you must have License Manager installed on the remote server with version 4.3 or later.

This panel contains the same level of information as the global licenses management (see section [License Management](#) on page 39), with the server host ID and licenses status, but only for one server. It displays the licenses that are currently installed on the server, and not the ones in the local repository.



Owner	Feature Name	Expiration	Information	Properties	Status
Watch4net	Alerting Engine	Oct 3, 2012 4:44:34 PM	Internal license	-	✓
Watch4net	APG Datastore	Oct 3, 2012 4:44:35 PM	Internal license	limit.size.value = 50 limit.size.tolerance = 10	✓
Watch4net	APG Self-Monitoring Collector	Oct 3, 2012 4:44:34 PM	Internal license	-	✓
Watch4net	APG-Traceroute-Tool	Oct 3, 2012 4:44:35 PM	Internal license	-	✓
Watch4net	Backend Adapter	Oct 3, 2012 4:44:34 PM	Internal license	limit.device.ratio = 1000 limit.device.value = 500 limit.device.property = device limit.device.tolerance = 10	✓
Watch4net	BroadSoft VoIP Collector	Oct 3, 2012 4:44:35 PM	Internal license	-	✓
Watch4net	Cisco Call Manager Adapter	Oct 3, 2012 4:44:35 PM	Internal license	-	✓
Watch4net	Cisco VoIP Collector	Oct 3, 2012 4:44:35 PM	Internal license	-	✓
Watch4net	DatabaseAccessor Web Service	Oct 3, 2012 4:44:35 PM	Internal license	-	✓

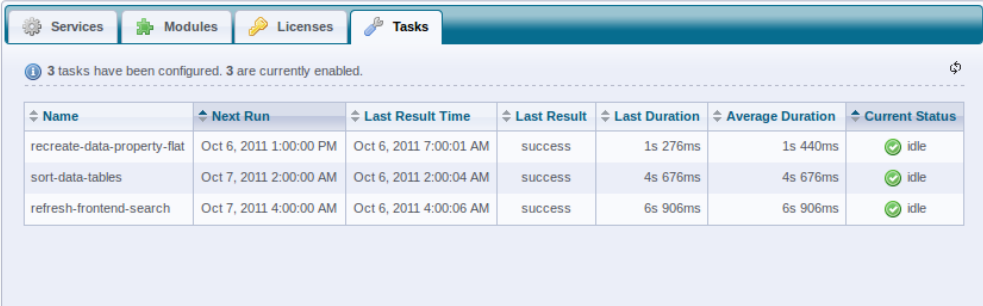
Figure 18: Licenses Panel



Refer to this panel when you are requesting licenses for the first time, as it displays the server host ID required to generate them. Click it to select it and copy and paste it.

6 Tasks

To see the Tasks panel you must have a Task Scheduler running on the remote server. It provides a summary of configured tasks and details about their execution status.



Name	Next Run	Last Result Time	Last Result	Last Duration	Average Duration	Current Status
recreate-data-property-flat	Oct 6, 2011 1:00:00 PM	Oct 6, 2011 7:00:01 AM	success	1s 276ms	1s 440ms	✓ idle
sort-data-tables	Oct 7, 2011 2:00:00 AM	Oct 6, 2011 2:00:04 AM	success	4s 676ms	4s 676ms	✓ idle
refresh-frontend-search	Oct 7, 2011 4:00:00 AM	Oct 6, 2011 4:00:06 AM	success	6s 906ms	6s 906ms	✓ idle

Figure 19: Tasks Panel

Mouse over the status icon to see details about the status of tasks. This example shows the pending task is configured to be launched when the first one finishes, which explains why it is not running yet.

Last Result	Last Duration	Average Duration	Current Status
success	1s 276ms	1s 440ms	idle
success	4s 676ms	4s 676ms	idle
success	6s 906ms	6s 906ms	idle
interrupted	16m 11s 308ms	-	idle
unknown	this task has never been launched		

Last Result	Last Duration	Average Duration	Current Status
interrupted	16m 11s 308ms	-	running
unknown	this task is waiting to be launched		
success	1s 276ms	1s 440ms	idle
success	4s 676ms	4s 676ms	idle
success	6s 906ms	6s 906ms	idle

Figure 20: Task Status Information

You can click the task to show detailed information about the task and access its configuration and log files, and management tools. These panels are covered by section [Task Management](#) on page 33.

5

Module Installation

You install modules from the [Modules](#) panel from a server page by clicking the Install button, or by using the [SolutionPacks](#) dialog from the top menu bar.



Figure 21: Module Installation Button

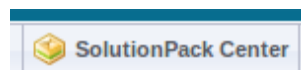


Figure 22: SolutionPacks Center Button

1 Package Selection

Packages are displayed in categories, which makes it easier to find a specific package.

1. Click a Collecting category to select packages.

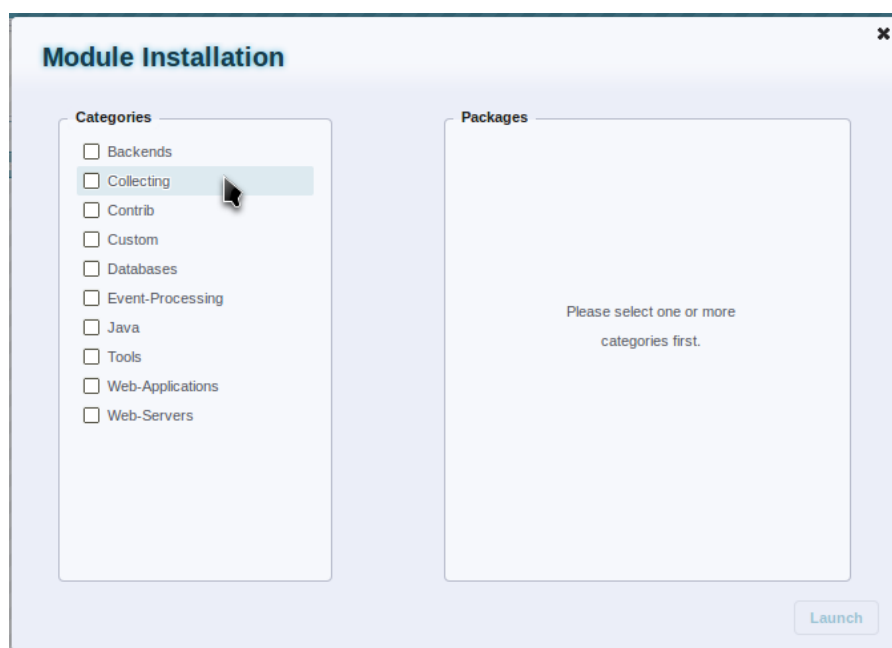


Figure 23: Category Selection

2. Select the packages you want to install.

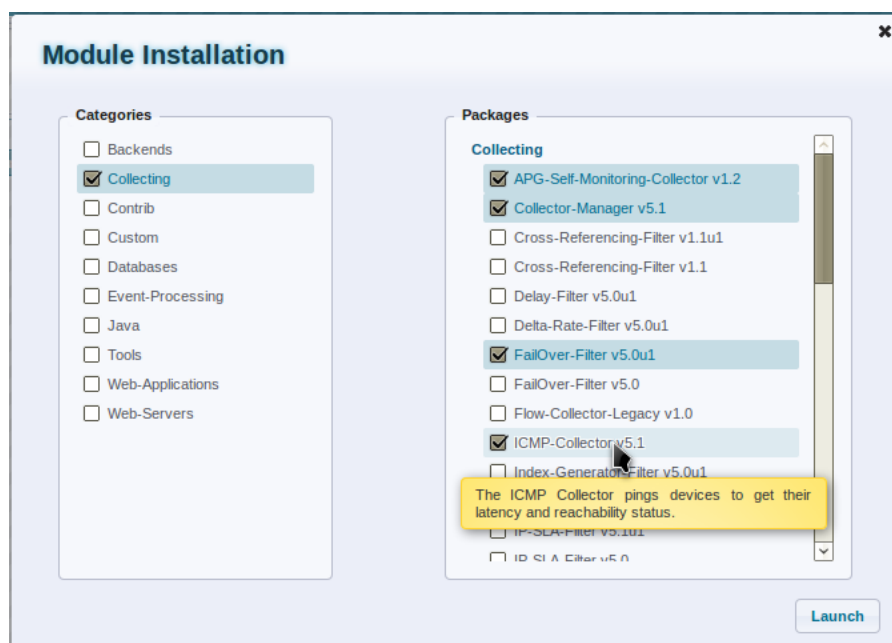


Figure 24: Package selection



To see a description of a module, mouse over a package name.

3. Click the Launch button. The Module Installation dialog box appears.

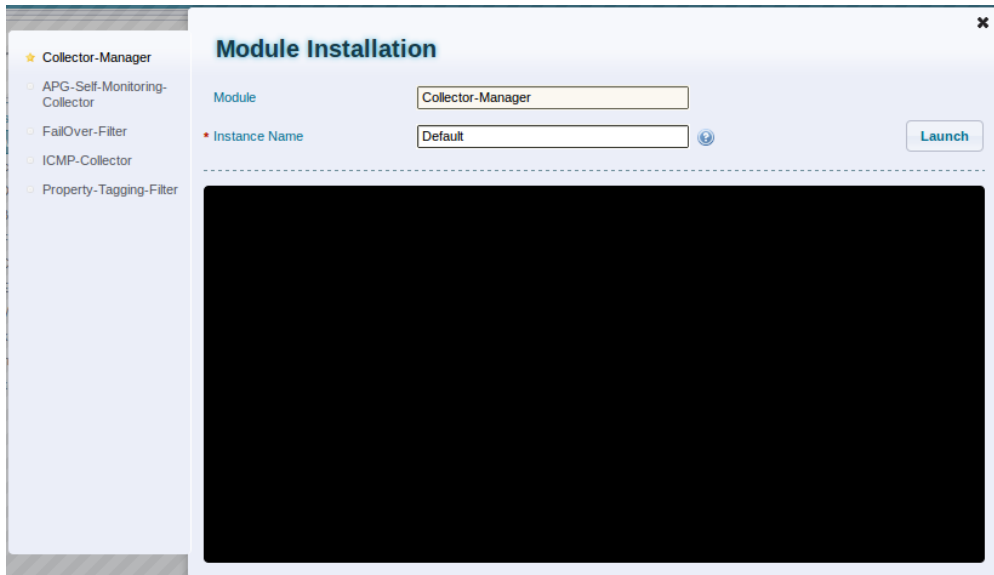


Figure 25: Module Installation Dialog

4. Specify an instance name. That field contains a default value but you can change it. Click Launch.

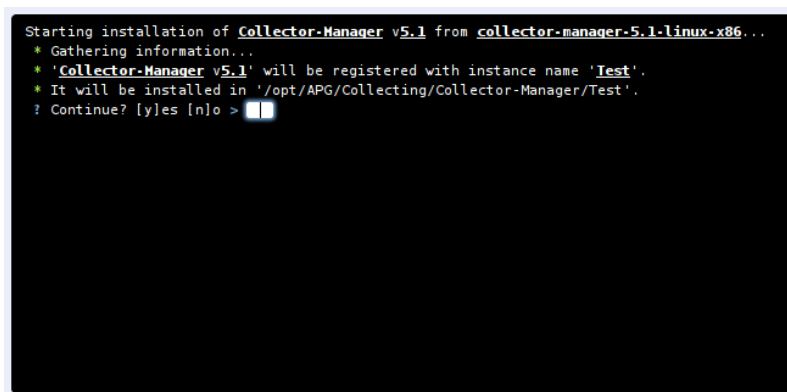


Figure 26: Sample Question

During the installation process, questions appear in the display.



You must answer each question within 5 minutes or the module installation process will be interrupted which can cause an inconsistent state on the remote server for the module.

Installed modules are displayed with an updated status.

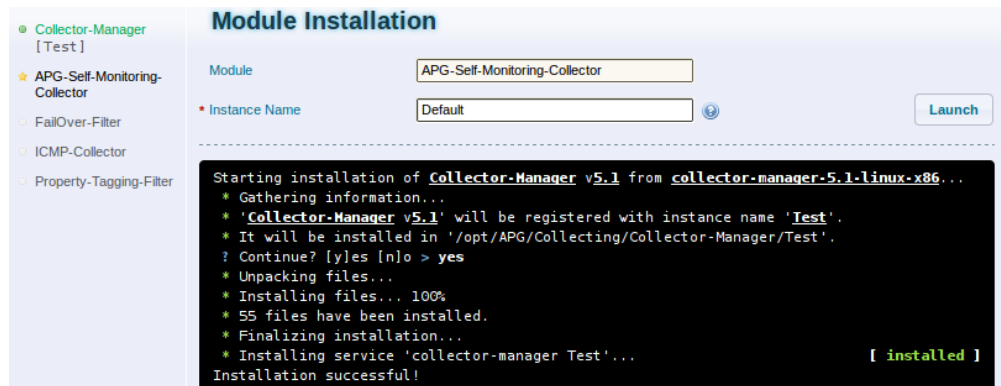


Figure 27: Successful Installation

If a module installation fails, click the Skip button to go to the next one.

6

Module Management

You can view module properties in these places:

- on the Server page, by clicking on service or module line or the drilldown icon for a service or module
- the Physical branch, by clicking a server child node
- the Logical view, by clicking a module line or a logical child node

You can view:

- module properties described on page [25](#)
- module documentation files, also described on page [25](#)
- service status information and service commands on page [26](#))
- access to configuration files and their contents on page [26](#))
- tools for log files on page [29](#)

1 Properties

This section describes basic module properties: module category, name and description.

The module current version is one of the most important properties when requesting information or support for a module. It is independant from the main *APG* release number. The path, relative to the main *APG* installation directory, gives a way to quickly find the module location.

For each modules, a link is provided to its documentation. Click it to download and display the file or right-click it to save the document to your computer.

2 Services

If the module has a service, status information is available in that section, along with buttons to Start, Stop and Restart the service. If the buttons are not available for a service, the service cannot be managed through Centralized Management.

- **no button visible** occurs on a service that needs to be running for Centralized Management to access the server; as a consequence, it cannot be started, stopped, or restarted. You must manually connect to the server using SSH or a remote desktop to perform these operations, for example the Webservices Gateway module.
- **all buttons are grayed** means the Centralized Management does not have enough rights to perform operations on this service. This can apply to any service that requires administration privileges, such as the Collector Manager when running the ICMP Collector.
- **only a restart button** occurs when looking at the Tomcat server used to run Centralized Management. The restart command is available, but if it were to fail, you must manually connect to the server to fix the issue.

3 Configuration File Access

Configuration files of each module are listed. You can edit, upload or remove them. Each module manages its own configuration files, even if the module is used within another one. For example, a collector or filter configuration that is used in a collector manager, is accessible only on the corresponding collector or filter page.

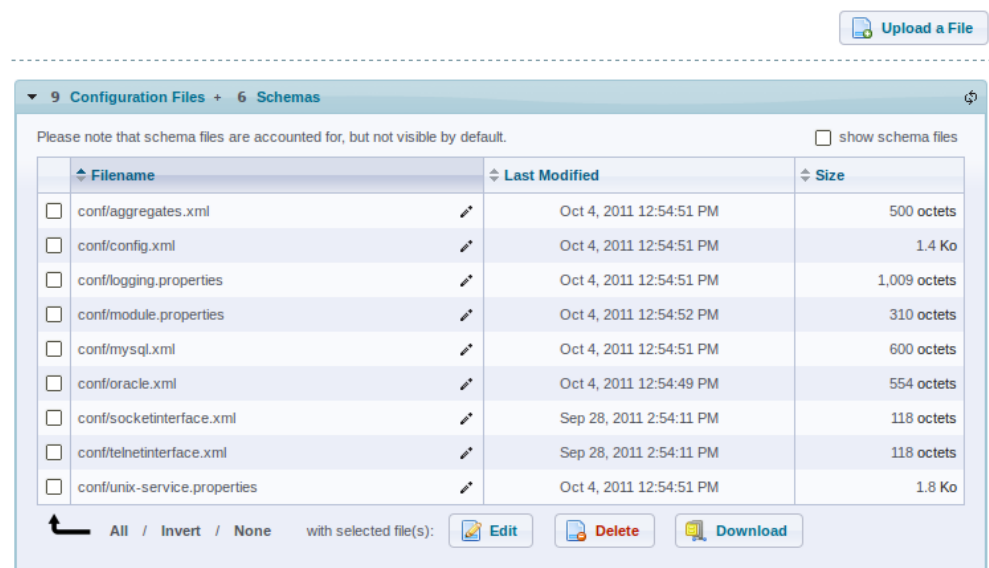


Figure 28: Access to Configuration Files



The table displays only the files that are identified by the module as configuration files.

You can click Upload a file to select a file from your computer and upload it to the remote server's conf directory. If the file is not detected as a configuration file, it does not appear in the list.

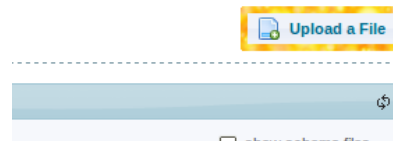


Figure 29: Uploading Files

You can reload the contents of the table by clicking the Refresh icon at the top right corner of the section. It is automatically triggered when a file is uploaded or edited.

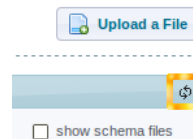


Figure 30: Refreshing Contents

Schemas may be needed when editing a file, or to check the validity of a configuration. You can display them by selecting the show schema files check box.

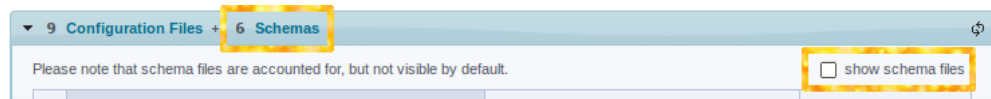


Figure 31: Displaying Configuration Schema

There are two ways to edit a configuration file. To directly edit a file, you can either select its line (click the line itself or on the corresponding checkbox), and then click the Edit button below the table (see figure 28 on page 26, or click on the pencil icon inside the Filename cell).

Filename	Last Modified
☐ conf/aggregates.xml	Oct 4, 2011
☐ conf/config.xml	Oct 4, 2011
☐ conf/logging.properties	Oct 4, 2011
☐ conf/module.properties	Oct 4, 2011

Figure 32: Editing Configuration

If Centralized Management does not detect the file type, you can manually specify it in the toolbar (the second dropdown). The editing area enables you to edit configuration files with the help of syntax highlighting. Other tools and features are available in the toolbar, but some may not render or work properly in your browser. After you have made your changes click Save and the file will be updated on the server.



There is currently no configuration validation at the moment, so the file will always be saved, even if not valid. However, restarting the component that uses the file will trigger and log an error about it.

You can select multiple files and click the global Edit button to open all files in one editor, each in its own tab. You can then quickly switch between files to modify them.

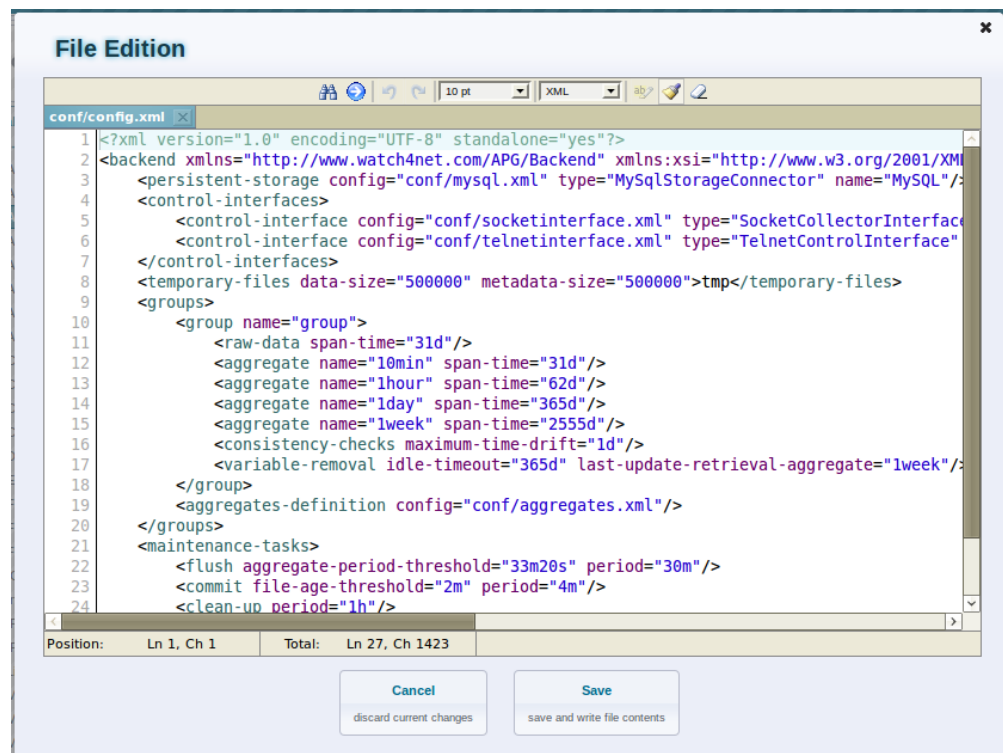


Figure 33: Configuration Editing

4 Log File Access

The Log Files area displays the files the module identifies as log files. Log files are useful for following a module that has just been started, to check if everything went fine recently, or look at the logs and stacktrace of a specific error.

Files are listed here in the order of the last modification, so usually the first one of the table is the one you want to look at. The number of files is defined in the logging configuration file, most of the times called `logging.properties`.

There are three ways to view log files: by clicking the icons in front of each log file-name, or by using the file selection tool and the Download button to archive the logs you select and display the resulting file.

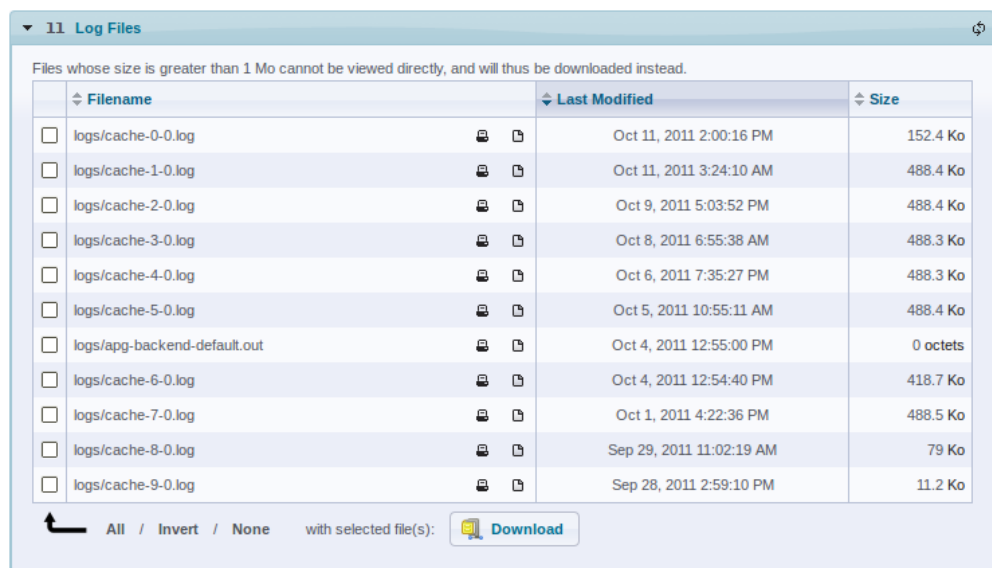


Figure 34: Log Files

To view the contents of a log file, click the View icon (see figure 35 on page 29). This opens a viewer or downloads the file if it is bigger than the size limit of 1 MB. The view is not updated if the file contents change on the disk.

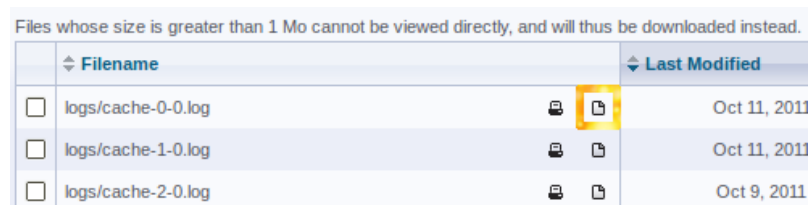


Figure 35: Viewing Log Files

To follow a log file that is being written to, click the Tail icon (see figure 36 on page

30). This opens a viewer and new lines are appended to the end of the file as they are written to the log file.

Files whose size is greater than 1 Mo cannot be viewed directly, and will thus be downloaded instead.

Filename	Last Modified
☐ logs/cache-0-0.log	Oct 11, 2011
☐ logs/cache-1-0.log	Oct 11, 2011
☐ logs/cache-2-0.log	Oct 9, 2011

Figure 36: Watching Log Files

If the viewed log is in a supported format (the default APG log formatter), in the log file viewer some fields will be highlighted in different colors. For example, WARNING and ERROR messages will be highlighted in orange and red.

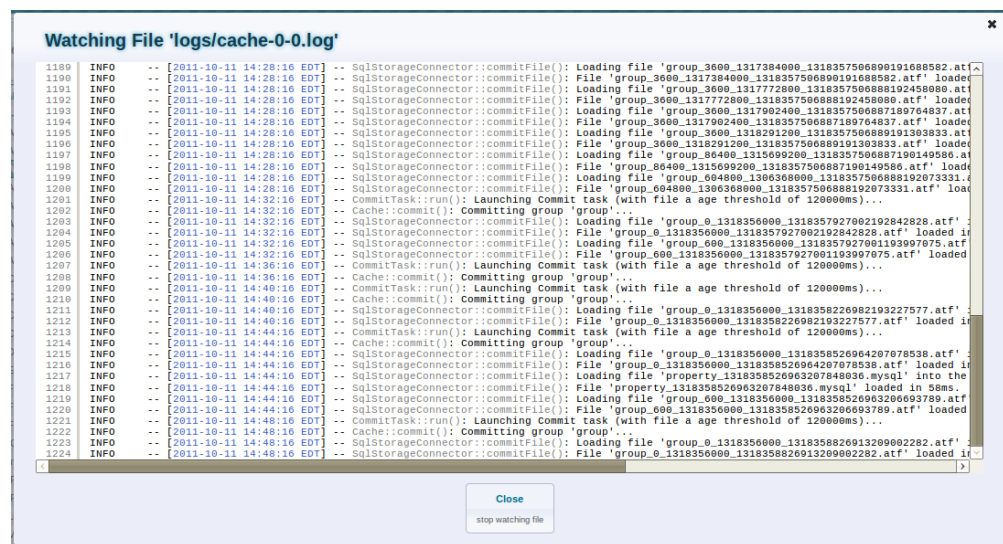


Figure 37: Log File Dialog

5 Update

When new versions of a module are available, either by running the setup of a new APG release, or uploading new packages to the central repository, a notification appears in the module page. At the top right corner of the module properties, the update button is set to update to the latest version.

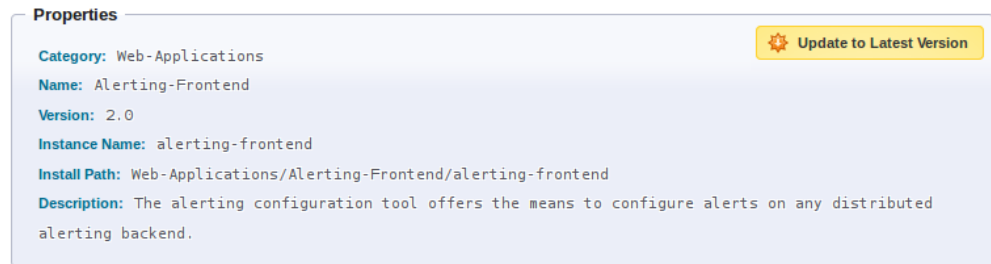


Figure 38: Module Update Button

If different versions are available, the button will have an additional option on its right in order to select the version to update to. For example, if a module is version 1.0, and versions 1.1 and 1.2 are available, all of these options appear in the list, ordered by descending version.

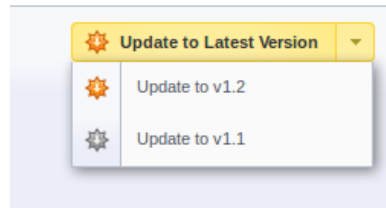


Figure 39: Module Update Choices

6 Removal

You can remove a module that has been installed by mistake, or been moved to another server by clicking the Uninstall button at the bottom of the Module page.

Task Management

You perform task management through the Server Management page. See [Tasks](#) section on page 19 for the list of tasks. Click a task in the table to display its current properties, status, and statistics. This gives an overview of the task use and its expected run time.

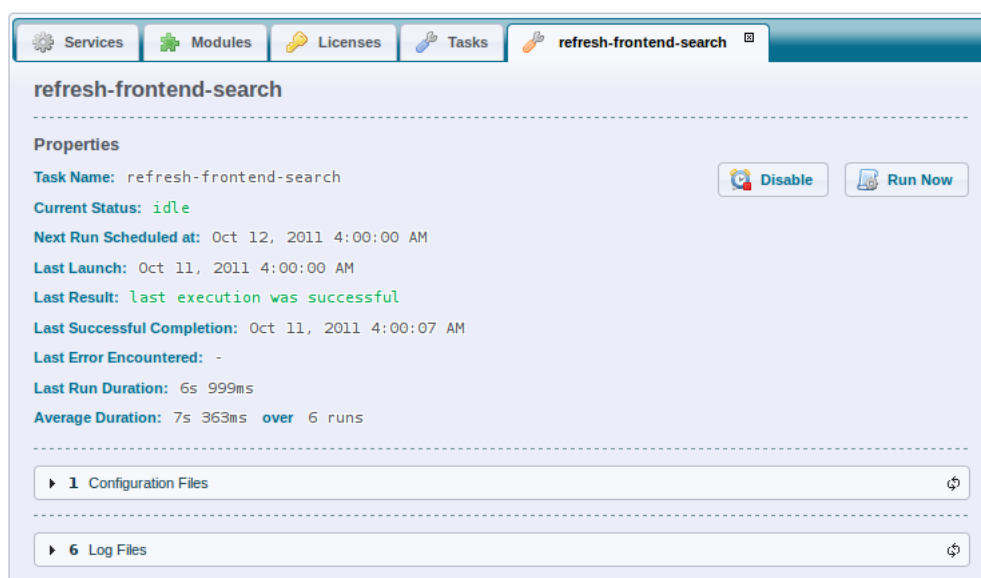


Figure 40: Task Properties

You can access the task configuration file, and the log files for each execution of the task, which can help you discover why a task did not complete successfully. See [Configuration File Access](#) page 26 and [Log File Access](#) page 29 for details about the actions available for these files.

If a task is running, or has been launched using the on-demand Run Now button, the run time is displayed with a progress estimate based on the average duration of previous runs.

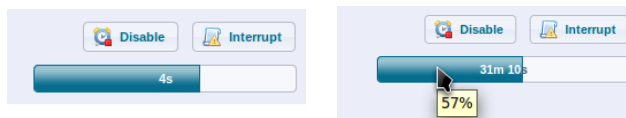


Figure 41: Task Running

You can cancel a pending task execution or interrupt it once started. There is no confirmation and the task is immediately cancelled. See the Task Scheduler documentation for details about *APG* scheduling tools.

Package Management

This section explains how to manage packages using Centralized Management, and how packages are used when installing or updating modules.

Packages Listing



i 107 packages are available, for 90 distinct modules, using a total size of 670.7 Mo.

	Category	Module Name	Version	OS	Status	Size
☐	Backends	Alerting-Backend	3.0	linux-x86	installed [1]	7.6 Mo
☐	Backends	APG-Backend	5.3	linux-x86	installed [1]	12.8 Mo
☐	Backends	Outage-Manager	1.0u1	linux-x86	-	5.2 Mo
☐	Collecting	APG-Self-Monitoring-Collector	1.2	linux-x86	installed [2]	2.8 Mo
☐	Collecting	Collector-Manager	5.1	linux-x86	installed [2]	2.5 Mo
☐	Collecting	Cross-Referencing-Filter	1.1u1	linux-x86	-	1.2 Mo
☐	Collecting	Cross-Referencing-Filter	1.1	linux-x86	installed [1]	1.1 Mo
☐	Collecting	Delay-Filter	5.0u1	linux-x86	-	4.8 Mo
☐	Collecting	Delta-Rate-Filter	5.0u1	linux-x86	-	4.8 Mo
☐	Collecting	FailOver-Filter	5.0u1	linux-x86	-	102.1 Ko
☐	Collecting	FailOver-Filter	5.0	linux-x86	installed [1]	35.7 Ko
☐	Collecting	Flow-Collector-Legacy	1.0	linux-x86	-	6.2 Mo
☐	Collecting	ICMP-Collector	5.1	linux-x86	installed [1]	6 Mo
☐	Collecting	Index-Generator-Filter	5.0u1	linux-x86	-	107 Ko
☐	Collecting	Index-Generator-Filter	5.0	linux-x86	installed [1]	100.8 Ko
☐	Collecting	IP-SLA-Filter	5.1u1	linux-x86	-	5.4 Mo
☐	Collecting	IP-SLA-Filter	5.0	linux-x86	installed [1]	5.4 Mo
☐	Collecting	JMX-Collector	1.2	linux-x86	-	419.8 Ko

Figure 42: Packages Management

The Packages Listing displays the package names, versions and operating systems. Operating system is important as it determines whether the package can be installed

on a server. See server [Operating System](#) configuration on page 13.

Mouse over the Status column to see where packages are installed. You can install a package multiple times on a same server, so the installation count can be higher than the number of servers shown in the tooltip.

1 Package Upload

Click the Upload button to upload a package to the Centralized Management package repository, which is usually located at Tools/Module-Repository.

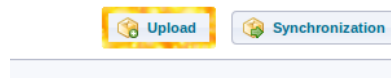


Figure 43: Packages Upload

You can either select the file to be uploaded or use the synchronization options.

2 Synchronization

Synchronization has these options: packages can be retrieved, cleaned up remotely, or discarded from the repository. Most packages can be selected together in a single synchronization action.

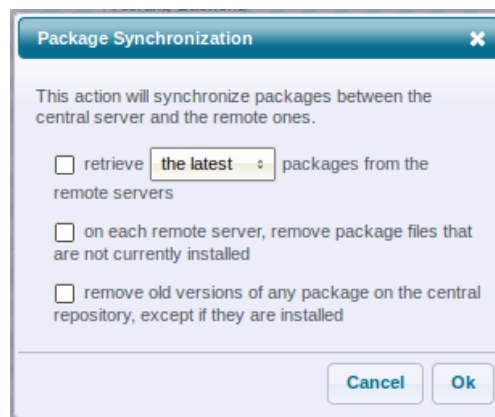


Figure 44: Package synchronization

Retrieve the latest packages connects to each server and fetches the latest version of their packages. This is the easiest way to install new packages as it runs the APG installer and then runs the synchronization.

Retrieve all the packages retrieves every available package from the servers, not just the latest ones. This is useful if you need a version that is not the most recent one.

Remove remote packages performs a cleanup on the remote servers. For each server, every package that is not installed on it is removed from its repository to free the disk space on the server.

Remove old versions from repository performs a cleanup on the Centralized Management package repository and keeps the most recent version of each package, as well as all the versions that are currently installed on the remote servers.

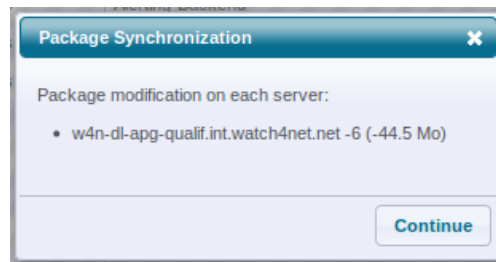


Figure 45: Package synchronization result

A summary is displayed for each server with the count of globally added or removed packages and the file size. On the central repository, adding 2 packages and removing 5 results in a count of -3.

License Management

This section explains how licenses can be managed using Centralized Management and how it facilitates their installation.

1 Licensing System

Starting with *APG* 6.0, licenses are linked to a host. To generate a license you require a license key. You can recover your license keys from the Licenses Management page but this requires that you have at least one available license, or from the the Server Licenses panel see page 18, which is available for each registered server.

Click the host ID and copy it. A manual *APG* installation, on which the License Manager or Centralized Management are installed does not require a license. So it can be installed, and then used to know the host ID of the server before requesting the licenses.



The host ID is a unique identifier generated by *APG*. It does not come from the command `hostid`. You can use the License Manager executable, `manage-license`, in the *APG*`bin` directory to generate the host ID of the server.

The first time this page loads it is empty, but after you upload some licenses, it lists all the available licenses, ordered by their host ID.

There is one section per host ID, with the license count and matched server. A message appears if a set of licenses does not match the registered server. Each line has a status icon that shows the current license status.

Licenses are stored on the Centralized Management server, under `Tools, License-Repository`, which contains one directory per server host ID with the associated licenses. We recommend you do not manage licenses manually from this repository, but instead manage them from Centralized Management.

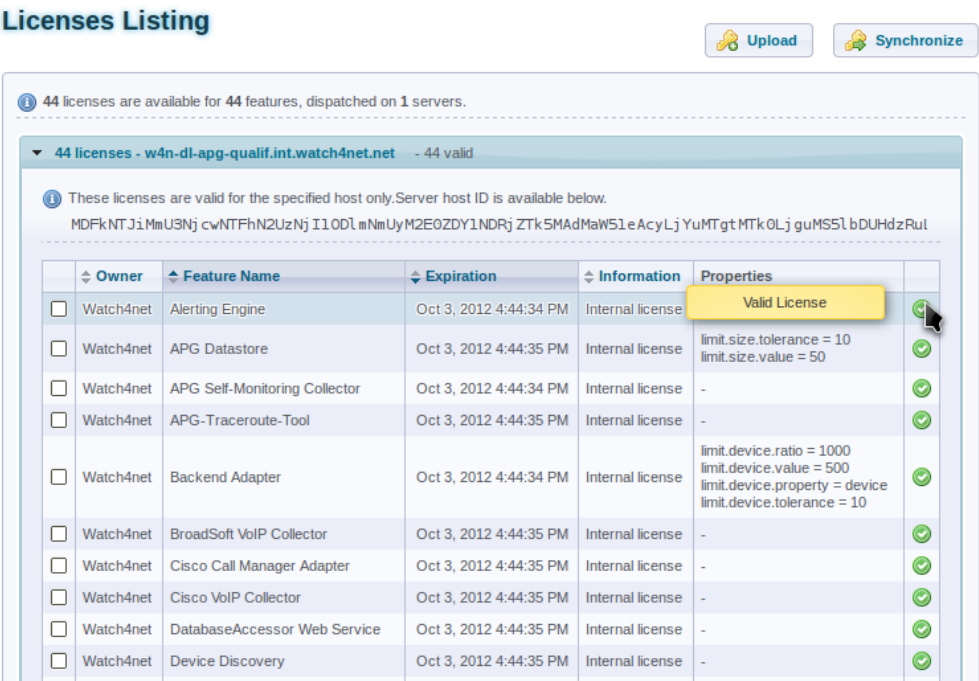


Figure 46: Licenses listing

2 License Upload

Centralized Management can perform the automatic dispatch of licenses, which makes it easy to install licenses on multiple servers. To add new licenses click Upload. You can upload .lic files or .zip archives.

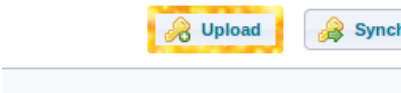


Figure 47: License Upload

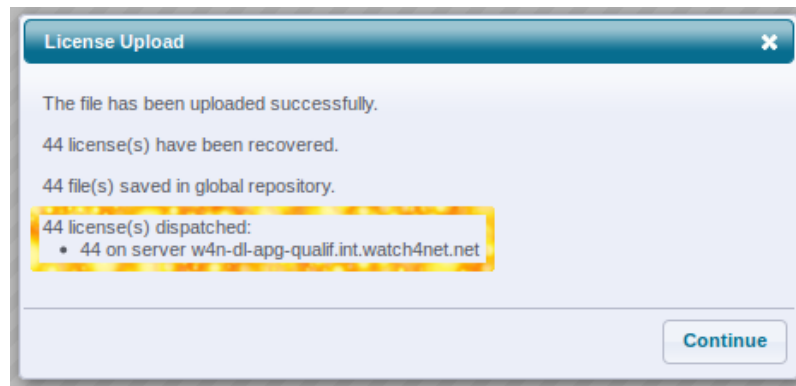


Figure 48: License upload result

A message appears to confirm the licenses are installed.

3 Synchronization

License synchronization is also available. This is useful when licenses have been installed or removed while the server was not reachable or unregistered. Synchronization is done based on the Centralized Management license repository. It does not recover licenses that are already installed.

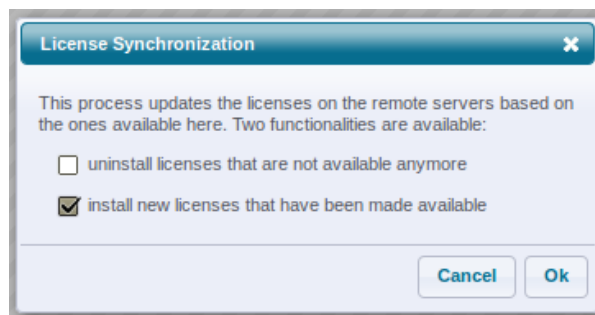


Figure 49: License Synchronization

Uninstall licenses uninstalls and removes licenses that are not available in the Centralized Management license repository. You cannot recover these licenses except if you have stored the license files elsewhere.

Install new licenses searches the licenses in the Centralized Management repository and makes sure they are properly installed on every remote server that is reachable. This is the most commonly used synchronization option.

10

Audit Logs

The Audit Files page connects to the registered servers and recovers the available audit log files. They are listed in order of the last modification time, and you can view them individually or download them as an archive.

Audit Files

 Here are the audit files available across all configured servers.

Files whose size is greater than 1 Mo cannot be viewed directly, and will thus be downloaded instead.

☐	Server Name	Module	Filename		Last Modified	Size
☐	w4n-dl-apg-qualif.int.watch4net.net	Tomcat :: Default	logs/audit.2011-10-11.log	 	Oct 11, 2011 12:48:08 PM	1.2 Ko
☐	w4n-dl-apg-qualif.int.watch4net.net	Tomcat :: Default	logs/audit.2011-10-06.log	 	Oct 6, 2011 4:34:19 PM	515.2 Ko
☐	w4n-dl-apg-qualif.int.watch4net.net	Tomcat :: Default	logs/audit.2011-10-05.log	 	Oct 5, 2011 6:03:55 PM	3.6 Ko
☐	w4n-dl-apg-qualif.int.watch4net.net	Tomcat :: Default	logs/audit.2011-10-04.log	 	Oct 4, 2011 4:21:08 PM	1.9 Ko
☐	w4n-dl-apg-qualif.int.watch4net.net	Tomcat :: Default	logs/audit.2011-10-03.log	 	Oct 3, 2011 4:02:30 PM	276 octets
☐	w4n-dl-apg-qualif.int.watch4net.net	Tomcat :: Default	logs/audit.2011-09-30.log	 	Sep 30, 2011 1:52:24 PM	12.7 Ko
☐	w4n-dl-apg-qualif.int.watch4net.net	Tomcat :: Default	logs/audit.2011-09-29.log	 	Sep 29, 2011 5:22:33 PM	7.4 Ko
☐	w4n-dl-apg-qualif.int.watch4net.net	Tomcat :: Default	logs/audit.2011-09-28.log	 	Sep 28, 2011 3:54:54 PM	1.2 Ko

 All / Invert / None with selected file(s):  Download

Figure 50: Audit Logs

SolutionPacks

The SolutionPacks are the easiest way to install and configure all that is needed for a specific collect and reporting. To install a new SolutionPacks, click on the SolutionPacks Center button in the top menu bar.

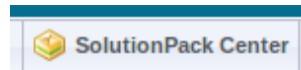


Figure 51: SolutionPacks Center Button

This will lead to all the available SolutionPacks in your installation.

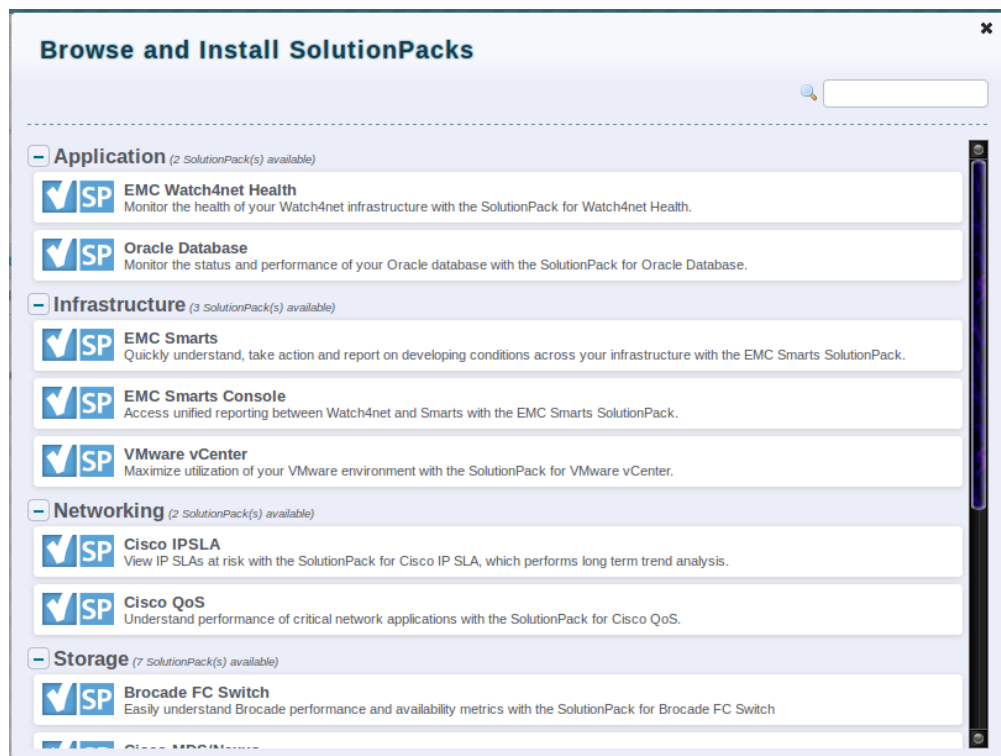


Figure 52: SolutionPacks Center Button

Each SolutionPack has its own details page explaining their benefits and expected content. Choosing a SolutionPack to install will lead to the servers selection options if all the required licenses are available.

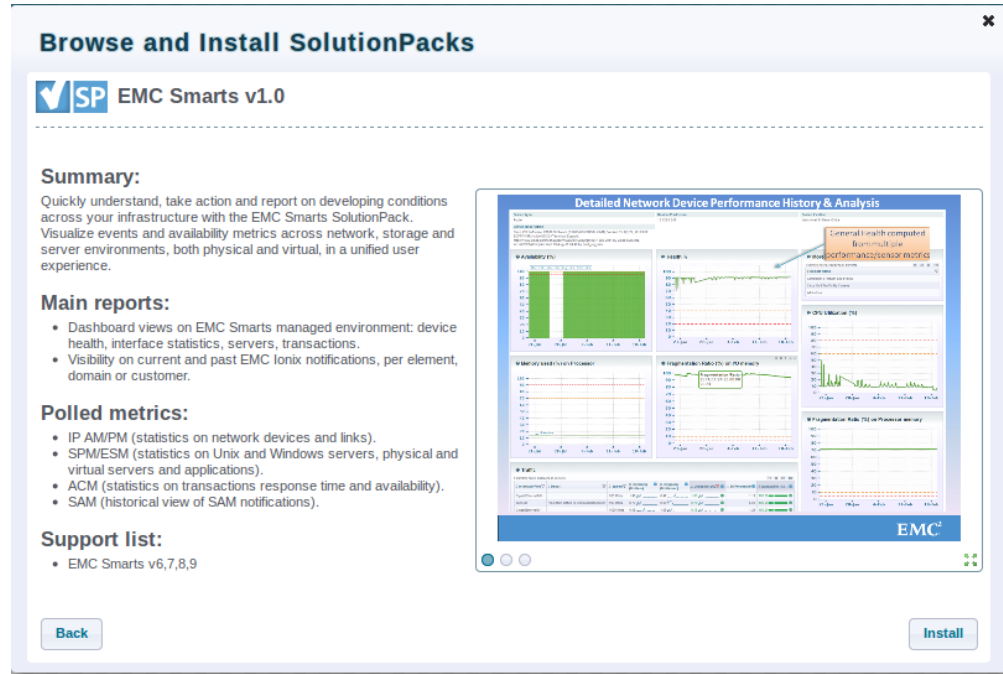
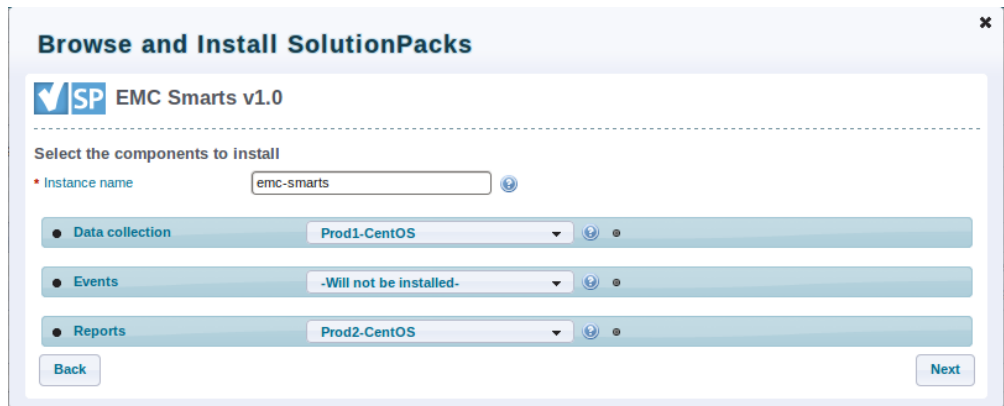


Figure 53: SolutionPacks Center Button

In this page, you'll be prompted to select an installation name that must be unique on each selected servers. Each components can be distruted among all the available servers and/or if needed, be installed multiple time on the same server with a different instance name. A server may be disable for the following reasons:

- Instance already used: If the component is already installed with the same instance name, the server won't be selectable.
- Missing licences: Some servers may not be up to date in term of installed licenses. If a server is missing a needed license for a specific component, it won't be selectable.
- Server unreachable: If there's a communication problem between the Centralized Management and a specific server, it won't be selectable.



Browse and Install SolutionPacks

✓ SP EMC Smarts v1.0

Select the components to install

• Instance name

• Data collection

• Events

• Reports

Figure 54: SolutionPacks Center Button

Once all the desired components are distributed on the right server, the next steps will be a series of questions per component in order to configure them correctly.

All the installed SolutionPacks are available in the SolutionPacks node of the browsing tree.

The screenshot shows the 'SolutionPacks Center' window. On the left is a navigation tree with 'SolutionPacks' selected. The main area is titled 'Installed SolutionPacks' and contains two tables.

Top Table: List of all the available SolutionPacks with at least one SolutionPackBlock installed.

Name	Version	Family	Installed SolutionPackBlocks	Description
EMC Smarts	1.0	Infrastructure	2	Quickly understand, take action and report on developing conditions across your infrastructure with the EMC Smarts SolutionPack.
EMC WatchNet Health	1.0	Application	2	Monitor the health of your WatchNet infrastructure with the SolutionPack for WatchNet Health.
VMware vCenter	1.0	Infrastructure	1	Maximize utilization of your VMware environment with the SolutionPack for VMware vCenter.

Showing 1 to 3 of 3 entries

Bottom Table: List of all the installed SolutionPackBlocks not owned by any SolutionPack.

Instance	SolutionPackBlock	Version	Server Distribution
Generic-SNMP	generic-snmp	1.0	Prod1-CentOS
Load-Balancer	load-balancer-arbitrator	1.0	Prod1-CentOS

Showing 1 to 2 of 2 entries

Figure 55: SolutionPacks Center Button

Each known SolutionPack will have its own entry in the top table while the unknown installed components will be displayed on the bottom table. Selecting a SolutionPack will lead to the page describing all the installed components and their location. For each component, it's possible to do the following:

- Remove: Uninstalling the component and all its configuration.
- Reconfigure: Change the running configuration of the component by modifying the answers to the installation questions.
- Update: Update the component to the latest version (will only be available if there's a newer version of the component in the repository).

EMC Smarts

Properties

SolutionPackBlocks updates available

Name: EMC Smarts

Version: 1.0

Family: Infrastructure

Summary:

Quickly understand, take action and report on developing conditions across your infrastructure with the EMC Smarts SolutionPack. Visualize events and availability metrics across network, storage and server environments, both physical and virtual, in a unified user experience.

Main reports:

- Dashboard views on EMC Smarts managed environment: device health, interface statistics, servers, transactions.
- Visibility on current and past EMC Ionix notifications, per element, domain or customer.

Polled metrics:

- IP AM/PM (statistics on network devices and links).
- SPM/ESM (statistics on Unix and Windows servers, physical and virtual servers and applications).
- ACM (statistics on transactions response time and availability).
- SAM (historical view of SAM notifications).

Support list:

- EMC Smarts v6,7,8,9

Documentation

EMC-Smarts-SolutionPack-Guide.pdf

Show 10 entries

Search:

Instance		SolutionPackBlock	Version	Server Distribution
emc-smarts		Data collection	1.0	Prod1-CentOS
emc-smarts		Reports	1.0	Prod1-CentOS

Showing 1 to 2 of 2 entries

First

Previous

1

Next

Last

Figure 56: SolutionPacks Center Button

Data collection

Update the SolutionPackBlock to the latest version

Figure 57: SolutionPacks Center Button

12

Central Configuration Repository

The Central Configuration Repository provides a simple way to edit configuration elements that are shared between several SolutionPacks and SolutionPackBlocks. For instance, the same Event Database could be used for the SMARTS Events as well as VMware Events.

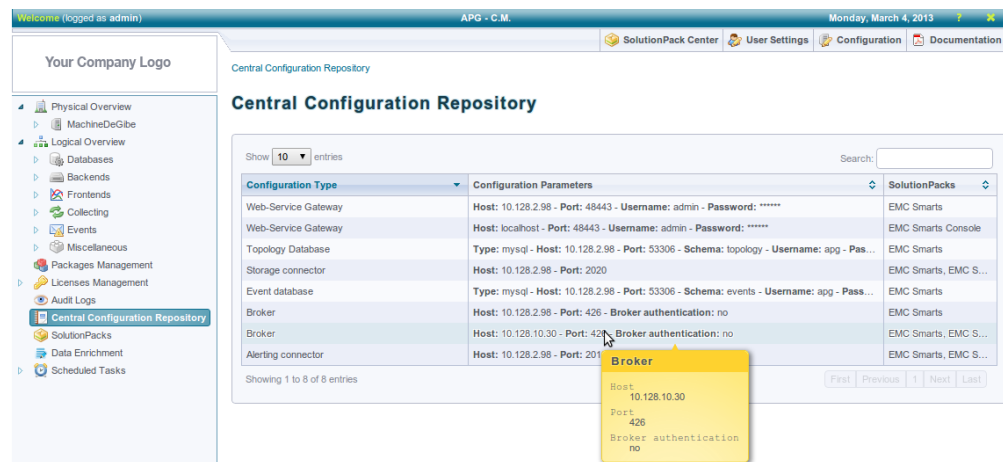


Figure 58: Central Configuration Repository

The main page of the Central Configuration Repository contains all the editable configuration elements across the registered servers. Each element is described by its name, its parameters and the SolutionPacks referencing it. Clicking on an item of the list opens the edition page of this particular element.



As the list size quickly increases with the installation of new SolutionPacks, it is recommended to use the search field to easily retrieve a specific configuration element.

In the figure above, a SMARTS Broker configuration is selected. Its name is Broker, its parameters are an IP address and a port and it is referenced by two SolutionPacks.

An other SMARTS Broker also appears, but with an other IP address.

The screenshot shows the 'Broker' configuration page in the Central Configuration Repository. The top header indicates the user is logged in as 'admin' and the date is Monday, March 4, 2013. The sidebar on the left contains various navigation options, including 'Physical Overview', 'Logical Overview', 'Databases', 'Backends', 'Frontends', 'Collecting', 'Events', 'Miscellaneous', 'Packages Management', 'Licenses Management', 'Audit Logs', 'Central Configuration Repository', 'SolutionPacks', 'Data Enrichment', and 'Scheduled Tasks'. The main content area is titled 'Broker' and includes a 'New Broker' form with fields for 'Broker hostname or IP address' (10.128.10.30) and 'Broker port' (426). Below the form is a table of existing configuration elements.

SolutionPack	Server Distribution	SolutionPackBlock	Instance	Configuration Type
☒ EMC Smarts - 1.0	MachineDeGibe	Data collection	emc-smarts	Broker
☐ EMC Smarts - 1.0	MachineDeGibe	Events	emc-smarts	Broker
☐ EMC Smarts - 1.0	MachineDeGibe	Reports	emc-smarts	Broker
☒ EMC Smarts Console - 1.0	MachineDeGibe	Data collection	emc-smarts-console	Broker
☐ EMC Smarts Console - 1.0	MachineDeGibe	Reports	emc-smarts-console	Broker

Below the table, there is a 'Show 10 entries' dropdown and a search bar. At the bottom, there is an 'Apply' button with the text 'Update the selected configurations'.

Figure 59: Edition of a configuration element

The top of the edition page contains the element's parameters while the bottom contains the list of SolutionPackBlocks referencing this element.

Modifying a configuration element requires the following steps:

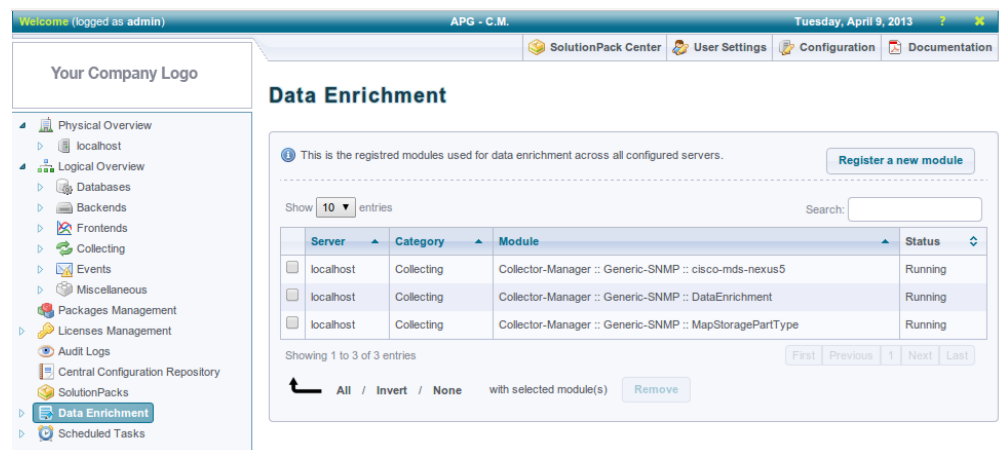
- Enter new parameters for the element.
- Select the SolutionPackBlocks that will be updated with the new parameters. The SolutionPackBlocks that are not selected will keep the previous configuration.
- Click on the Apply button.

13

Data Enrichment

The data enrichment page allows the user to quickly add some tagging on data coming from a collector-manager or an event-processing-manager.

To be able to tag some data the collector manager and/or the event-processing-manager must be running, and they must contain at least one property tagging filter (for the collector manager) and one event property tagger (for the event processing manager).



The screenshot shows the 'Data Enrichment' page in a web application. The page header includes 'Welcome (logged as admin)', 'APG - C.M.', and the date 'Tuesday, April 9, 2013'. The left sidebar contains a navigation menu with items like 'Physical Overview', 'Logical Overview', 'Databases', 'Backends', 'Frontends', 'Collecting', 'Events', 'Miscellaneous', 'Packages Management', 'Licenses Management', 'Audit Logs', 'Central Configuration Repository', 'SolutionPacks', 'Data Enrichment', and 'Scheduled Tasks'. The main content area is titled 'Data Enrichment' and contains a message: 'This is the registered modules used for data enrichment across all configured servers.' Below this is a table with the following data:

Server	Category	Module	Status
localhost	Collecting	Collector-Manager :: Generic-SNMP :: cisco-mds-nexus5	Running
localhost	Collecting	Collector-Manager :: Generic-SNMP :: DataEnrichment	Running
localhost	Collecting	Collector-Manager :: Generic-SNMP :: MapStoragePartType	Running

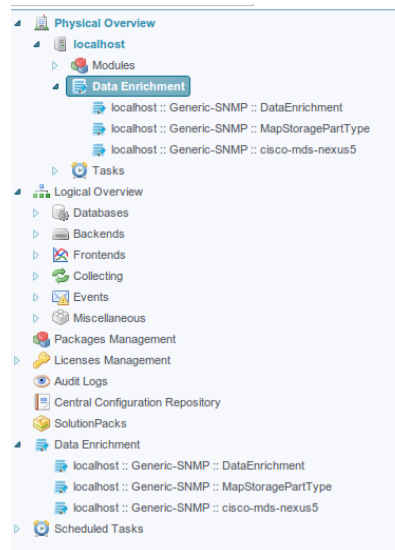
Below the table, it says 'Showing 1 to 3 of 3 entries'. There are also buttons for 'First', 'Previous', '1', 'Next', and 'Last'. At the bottom, there are buttons for 'All', 'Invert', 'None', and 'with selected module(s)', along with a 'Remove' button.

Figure 60: Data Enrichment page

Here is a definition of each possible **status** of the tagging.

- **Running**: Everything is fine, module is running.
- **Module is not running**: The module is not running.
- **Server not reachable**: The target server might be down.

- **WS not Supported:** The module is running but we cannot get a response from the webservice. Maybe the module is too old and doesn't support the web service.
- **Unknown:** Any other errors.



To access the data enrichment page, you can select the data enrichment root node from the tree, or select data enrichment node located under the physical node.

If the data enrichment page is selected under the physical node, then only tagging related to that host is displayed. Otherwise all the tagging, for all hosts, will be displayed.

Register a new module allows the user to add a new property tagging filter or a new event property tagger to the list of tagging.

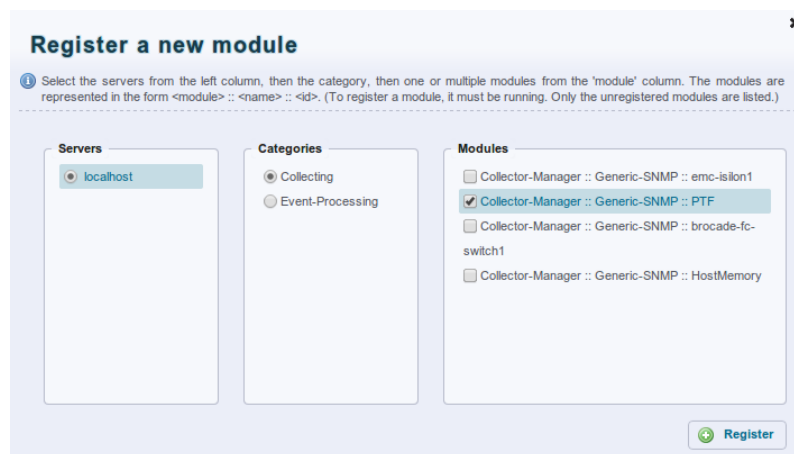


Figure 61: Registering a new module

After opening the Register a new module page, the user must select a server, then a category and finally the list of property tagging filter and event property tagger

to register.



To be able to register a module, the target collector manager and/or event processing manager must be running.

Remove allows the user to remove one or multiple tagging. First, the user must select the tagging(s) to be removed, and then press the **Remove** button.

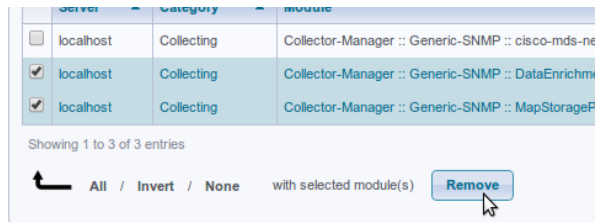


Figure 62: Removing a module

To access the tagging, the user must either click on the tagging from the list of the data enrichment page, or directly select the node from the tree. Then the following page will be displayed.

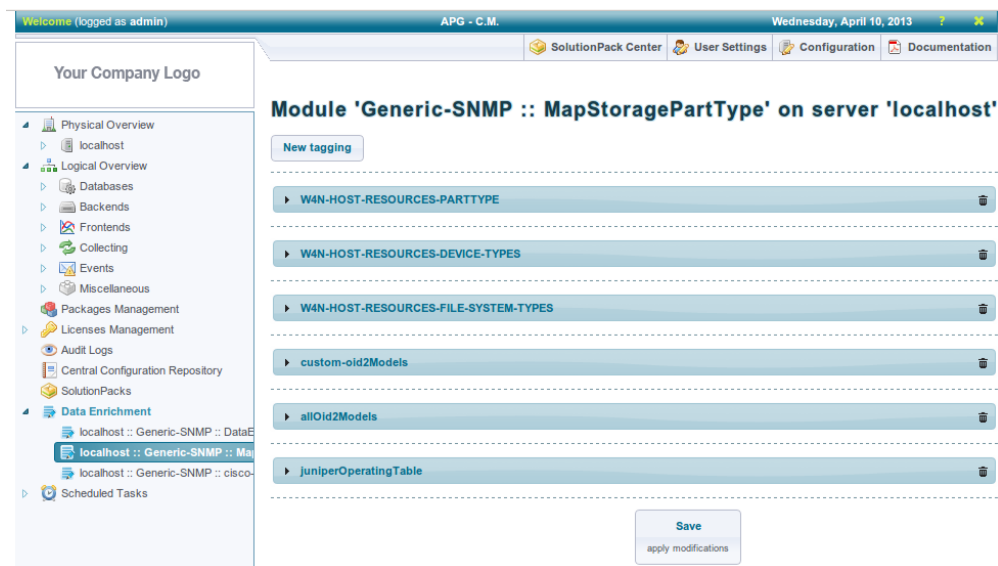
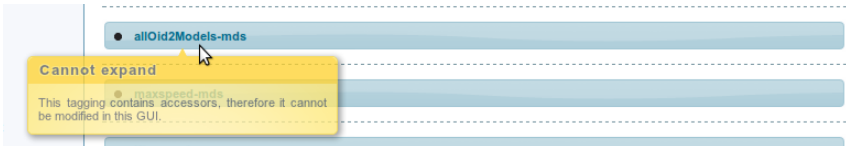


Figure 63: Data enrichment tagging page

New tagging will create a new tagging.

Save will save all the changes made to all the tagging.

Delete (small trashcan on the right) will completely remove the selected tagging.



If the property tagging filter or event property tagger configuration contains some accessors, it will not be possible to use the GUI to modify the data.

To make some change on a tagging, simply expand the tagging by clicking on it.

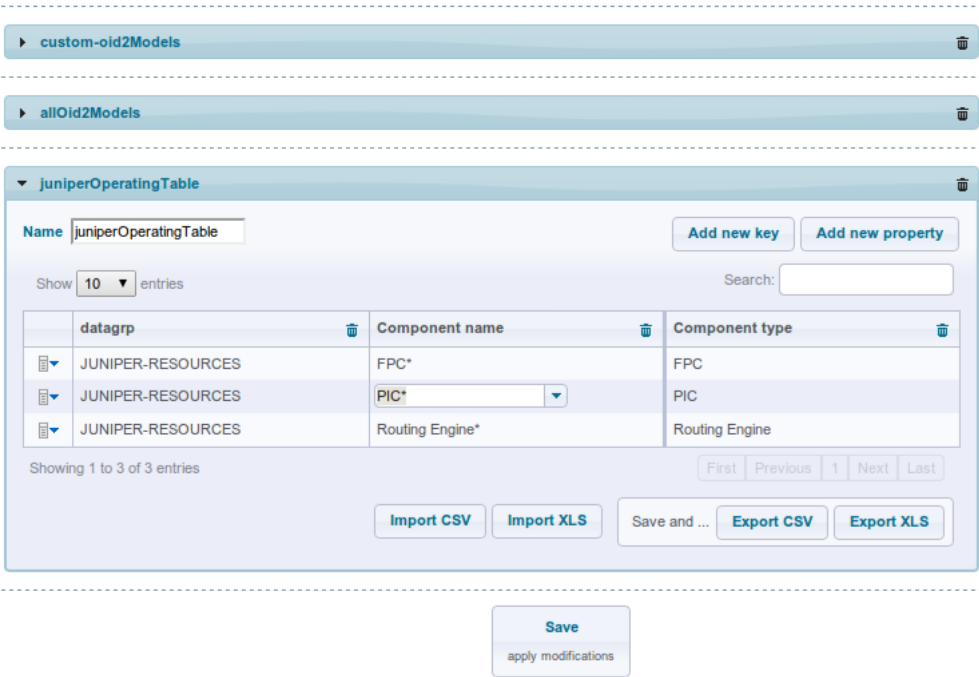


Figure 64: Data enrichment tagging detail

To **modify a value**, you must click on it. A textbox will appear and the user will be able to modify the value, pressing the `Enter` key will commit the change. The modified value will then be in blue italic. Example:

JUNIPER-RESOURCES	<i>New value</i>
JUNIPER-RESOURCES	Routing Engine*

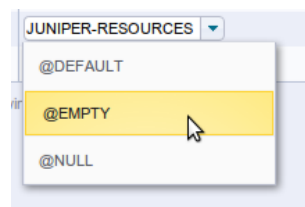
The user can also press the `TAB` key which has the same impact, except that after the commit the focus will move on the next cell.



	<i>*JUN*,*PIC*,*PIC*,*TEST*</i>		
	JUNIPER-RESOURCES	Routing Engine*	Rou

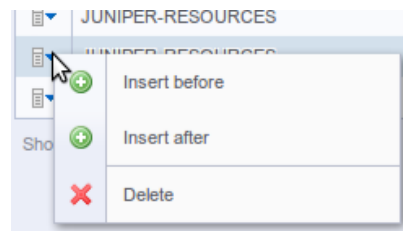
If you see a value in red italic, it means that the value was not correctly written in the property tagging filter or event property tagger data file. You cannot modify that value, but you can delete the row.

When clicking on a key value, a list of special values can be selected. The @EMPTY and @NULL options are there to differentiate between an empty and a null value. The @DEFAULT option represent the default-symbol attribute of the property tagging filter or event property tagger configuration, see the documentation of those modules for more information on that attribute.



The @NULL option is only available if the null-symbol attribute is present in the property tagging filter or in the event property tagger configuration.

For **creating and deleting rows**, you must click on the small icon at the left of the row, and then the following contextual menu will be displayed.



- **Insert before** will create a new row on top of the selected one.
- **Insert after** will create a new row below the selected one.
- **Delete** will delete the selected row.

To **add a new key or property**, you must click on the appropriate button, either Add new key or Add new property, then the following windows will be displayed.

Create a new key

New column

after

Default value

Type

Delete after use ☐

Save

- **New column** is the name of the new key.
- **after** determines the position of the column.
- **Default value** will write the input value for all existing rows.
- **Type** is the type of column. Possible values are:
 - **String**: a normal string column
 - **Regex**: Java regular expression
 - **Wildcard**: can replace a character with (?) and multiple characters with (*), escape character is (\)
 - **Range**: a range of numbers, example: [5;20] any number between 5 and 20
- **Delete after use** mean that the column will be deleted after the enrichment has been done.

Create a new property

New column

after

Default value

Save

- **New column** is the name of the new property.
- **after** determines the position of the column.
- **Default value** will write the input value for all existing rows.

To **remove a key or property**, you must click on the icon (small trashcan) beside the column name.

It is possible to **import or export** data in CSV or excel format. To execute these tasks, just click on the corresponding button. When importing, if the imported file contains more columns than the configuration, they will be stripped.

User Settings

This section describes the settings available for each user in Centralized Management. To access the user settings, on the top right of the menu bar click User Settings.

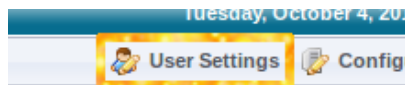


Figure 65: User Settings Access

A screenshot of a 'User Settings' dialog box. The title bar says 'User Settings' with a close button (X) on the right. Inside, there are two settings: 'Language' with a dropdown menu showing 'English' and a help icon; and 'Charts Refresh' with a dropdown menu showing 'automatically', the word 'every', a text input field with '20', and the letter 's', followed by a help icon. At the bottom, there is a 'Save' button and a smaller button labeled 'apply modifications'.

Figure 66: User Settings

Language defines the language used for the interface. The language you choose here determines the language used for *APG*, so if you change the language here, it also changes in *APG*.

Chart Refresh controls the refresh rate of the real-time charts shown on the server pages.

- **default** uses the default settings of an automatic refresh with a period of 10 seconds.
- **automatically** specify the refresh rate in seconds. A value of 0 in that field disables auto-refresh.
- **never** disables real-time charting and uses historical charts, if enabled for the server.

15

WebApp Context Configuration

This configuration file, located in the Tomcat `conf/Catalina/localhost` directory, is available after you deploy and run the application on the server. This file contains the definition of the master table with the users, and the *APG* timeseries databases.

The timeseries databases are used to retrieve and display historical health data for the registered servers. Check that the configured sources fit your installation, or the charts will be empty.

```
<?xml version="1.0" encoding="UTF-8" ?>
<Context reloadable="false">

    <!-- Gives access to the users, profiles, roles and rights. -->
    <ResourceLink name="jdbc/master" global="jdbc/master" type="javax.sql.DataSource" />

    <!-- Gives access to the timeseries database. -->
    <ResourceLink name="jdbc/APG-DB" global="jdbc/APG-DB" type="javax.sql.DataSource" />

</Context>
```