



Métrologie et

Cacti



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- Introduction
- Présentation très générale
- Dans le détail d'un template...

Cacti... pour la métrologie

- Poller qui collecte et stocke des données et interface de présentation de graphes (vues...)
 - Basé sur RRDTool pour créer les graphes
 - Stocke les données dans MySQL
 - Scripts et Net-SNMP pour collecter les données
- Utilisé pour mesurer les charges CPU, mémoire, trafics réseau, disques, températures, puissance, etc.
- Interface graphique assez sophistiquée, mais très « clickodrome »
- Grand nombre de modèles (templates) pour les définitions de graphs, hôtes et données.

PRÉSENTATION - MENU PRINCIPAL

console graphs

Console

Create

- New Graphs

Management

- Graph Management
- Graph Trees
- Data Sources
- Devices

Collection Methods

- Data Queries
- Data Input Methods

Templates

- Graph Templates
- Host Templates
- Data Templates

Import/Export

- Import Templates
- Export Templates

Configuration

- Settings
- Plugin Management

Utilities

- System Utilities
- User Management
- Logout User

You are now logged into Cacti. You can follow these basic steps to get started.

- [Create devices](#) for network
- [Create graphs](#) for your new devices
- [View](#) your new graphs

CREATE DEVICES

console graphs

Console -> Devices -> (Edit)

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Device [new]

General Host Options

Description
Give this host a meaningful description.

Hostname
Fully qualified hostname or IP address for this device.

Host Template
Choose the Host Template to use to define the default Graph Templates and Data Queries associated with this Host.

Number of Collection Threads
The number of concurrent threads to use for polling this device. This applies to the Spine poller only.

Disable Host
Check this box to disable all checks for this host. Disable Host

Availability/Reachability Options

Downed Device Detection
The method Cacti will use to determine if a host is available for polling.
NOTE: It is recommended that, at a minimum, SNMP always be selected.

Ping Method
The type of ping packet to sent.
NOTE: ICMP on Linux/UNIX requires root privileges.

Ping Port
TCP or UDP port to attempt connection.

Ping Timeout Value
The timeout value to use for host ICMP and UDP pinging. This host SNMP timeout value applies for SNMP pings.

Ping Retry Count
After an initial failure, the number of ping retries Cacti will attempt before failing.

SNMP Options

SNMP Version
Choose the SNMP version for this device.

SNMP Community
SNMP read community for this device.

SNMP Port
Enter the UDP port number to use for SNMP (default is 161).

SNMP Timeout
The maximum number of milliseconds Cacti will wait for an SNMP response (does not work with php-snmp support).


Maximum OID's Per Get Request
Specified the number of OID's that can be obtained in a single SNMP Get request.

NEW GRAPHS (HOST-TEMPLATES-GRAPH)

Console -> Create New Graphs

Create

- New Graphs**
- Management
- Graph Management
- Graph Trees
- Data Sources
- Devices
- Collection Methods**
- Data Queries
- Data Input Methods
- Templates**
- Graph Templates
- Host Templates
- Data Templates
- Import/Export**
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- Export Templates
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New Graphs for [irma-atlas1 (irma-atlas1) irma template]

Host: Graph Types:

Graph Templates

Graph Template Name

Create: DELL Power

Create: Host MIB - Logged In Users

Create: Host MIB - Processes

Create: MultiCPU avg

Create: ucd/net - Available Disk Space

Create: ucd/net - CPU Usage

Create: ucd/net - Load Average

Create: ucd/net - Memory Usage

Create:

Data Query [SNMP - Get Mounted Partitions]

Showing All Items

Index	Description	Storage Allocation Un
1	Physical memory	1024 Bytes
3	Virtual memory	1024 Bytes
6	Memory buffers	1024 Bytes
7	Cached memory	1024 Bytes
8	Shared memory	1024 Bytes
10	Swap space	1024 Bytes
31	/	4096 Bytes
35	/sys/fs/cgroup	4096 Bytes

VIEW GRAPH (INTERFACE À RRD-TOOL)

Graphs -> Tree Mode

- Cluster_atlas
 - cpu
 - Memory
 - load
 - disk_scratch
 - disk_root
 - disk_ssd & data
 - network_traffic
 - PowerConsumption
- Cluster_ESXI
- Data_Spaces
- FireWall
- juniper
 - juniper_backbone
- printer
 - Black toner
 - today print counter
 - total print counter
 - network traffic
 - Total Printed Pages
 - toner by %
 - toner and drum kit
- servers
- temperature sondes

Graph Filters

Presets: Last Day From: 2015-11-04 16:22 To: 2015-11-05 16:22 1 Day Refresh Clear

Search: Graphs: Default Columns: N/A Thumbnails: Go Clear

Showing All Graphs

Tree: Cluster_atlas -> Leaf: cpu

irma-atlas - CPU Usage

	Current	Average	Maximum
System	25.87	21.56	362.19
User	106.86	156.35	3.00 k
Nice	88.89 u	29.35 m	4.00
Total	132.72	177.94	3.20 k

irma-atlas1 - CPU Usage

ARBRE DE GRAPHS... PÉRIODES DE VUE...

console graphs settings

Graphs -> Tree Mode Logged in as admin (Logout)

Graph Filters

Presets: Last Week From: 2015-10-29 16:26 To: 2015-11-05 16:26 1 Day Refresh Clear

Search: Graphs: Default Columns: 3 Columns Thumbnails: Go Clear

Showing All Graphs

Tree:temperature sondes

- Cluster_atlas
 - cpu
 - Memory
 - load
 - disk_scratch
 - disk_root
 - disk_ssd & data
 - network_traffic
 - PowerConsumption
- Cluster_ESXI
 - cpu vhost memory
 - DataStore
 - Data_Spaces
 - FireWall
 - juniper
 - juniper_backbone
 - printer
 - servers
 - temperature sondes**

sonde-m101 - temperature piece

sonde-i200 - temperature piece

sonde-i200 - temperature clim

sonde-i102 - temperature piece

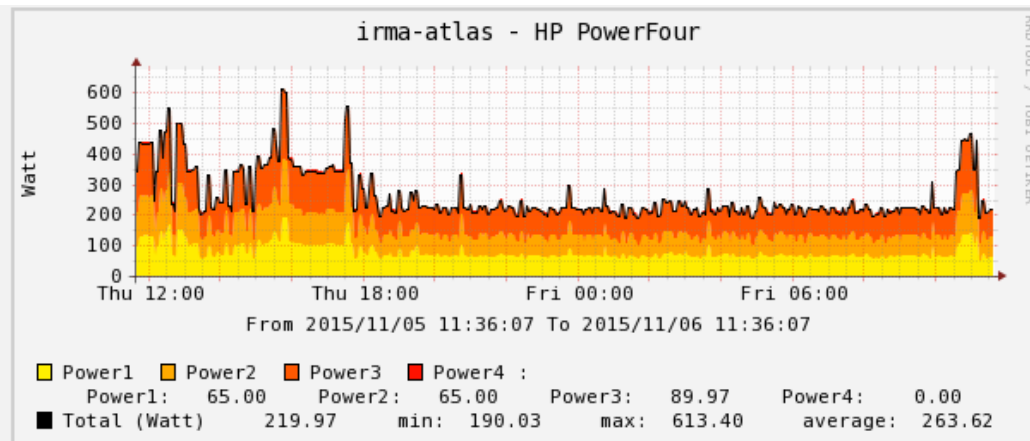
sonde-i102 - temperature clim

sonde-i102 - temperature exterieure

sonde-i102 - Hygrometrie exterieure

DANS LE DÉTAIL D'UN TEMPLATE...

- Problématique : mesurer la puissance électrique consommé par un serveur
- Serveur : HP DL 585, 3/4 alimentations, via SNMP
- `snmpwalk -c public -v 2c -O e irma-atlas .1.3.6.1.4.1.232.6.2.9.3.1.7.0`
 - SNMPv2-SMI::enterprises.232.6.2.9.3.1.7.0.1 = INTEGER: 75
 - SNMPv2-SMI::enterprises.232.6.2.9.3.1.7.0.2 = INTEGER: 75
 - SNMPv2-SMI::enterprises.232.6.2.9.3.1.7.0.3 = INTEGER: 105
 - SNMPv2-SMI::enterprises.232.6.2.9.3.1.7.0.4 = INTEGER: 0
- Chaque OID associée à une alim retourne P(watt)
- But :



AJOUT D'UN DATA TEMPLATE

Console -> Data Templates -> (Edit)

Create

New Graphs

Management

Graph Management

Graph Trees

Data Sources

Devices

Collection Methods

Data Queries

Data Input Methods

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Graph Templates

Host Templates

Data Templates

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Import Templates

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Logout User



Data Templates [edit: HP Power1dt]

Name

The name given to this data template.

HP Power1dt

Data Source

Name

Use Per-Data Source Value (Ignore this Value)

|host_description| - Power

Data Input Method

This field is always templated.

Get SNMP Data

Associated RRA's

This field is always templated.

Hourly (1 Minute Average)
Daily (5 Minute Average)
Weekly (30 Minute Average)
Monthly (2 Hour Average)

Step

Use Per-Data Source Value (Ignore this Value)

300

Data Source Active

Use Per-Data Source Value (Ignore this Value)

Data Source Active

Data Source Item [hp_power1]

Internal Data Source Name

Use Per-Data Source Value (Ignore this Value)

hp_power1

Minimum Value ('U' for No Minimum)

Use Per-Data Source Value (Ignore this Value)

0

Maximum Value ('U' for No Maximum)

Use Per-Data Source Value (Ignore this Value)

6500

Data Source Type

Use Per-Data Source Value (Ignore this Value)

GAUGE

Heartbeat

Use Per-Data Source Value (Ignore this Value)

600

Custom Data [data input: Get SNMP Data]

OID

Use Per-Data Source Value (Ignore this Value)

.1.3.6.1.4.1.232.6.2.9.3.1.7.0.1

AJOUT D'UN GRAPH TEMPLATE

Console -> Graph Templates -> (Edit)

Logged

- Create
- New Graphs
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Graph Template Items [edit: HP Power Four]

Graph Item	Data Source	Graph Item Type	CF Type	Item Color
Item # 1	(hp_power1): Power1	AREA	LAST	FFF200
Item # 2	(hp_power2): Power2	STACK	LAST	FFAB00
Item # 3	(hp_power3): Power3	STACK	LAST	FF5700
Item # 4	(hp_power4): Power4 :<HR>	STACK	LAST	FF0000
Item # 5	(hp_power1): Power1:	GPRINT	LAST	
Item # 6	(hp_power2): Power2:	GPRINT	LAST	
Item # 7	(hp_power3): Power3:	GPRINT	LAST	
Item # 8	(hp_power4): Power4:<HR>	GPRINT	LAST	
Item # 9	(No Task): Total (Watt)	LINE1	LAST	000000
Item # 10	(No Task):	GPRINT	LAST	
Item # 11	(No Task): min:	GPRINT	MIN	
Item # 12	(No Task): max:	GPRINT	MAX	
Item # 13	(No Task): average:	GPRINT	AVERAGE	

Graph Item Inputs

Name

Data Source [hp_power1]

Data Source [hp_power2]

Data Source [hp_power3]

Data Source [hp_power4]

Template [edit: HP Power Four]

Name

The name given to this graph template.

HP Power Four

Graph Template

Title (--title)

Use Per-Graph Value (Ignore this Value)

[host_description] - HP PowerFour

Image Format (--imgformat)

Use Per-Graph Value (Ignore this Value)

PNG ↕

LES ITEMS... TRACÉ PREMIÈRE COURBE

Graph Template Items [edit graph: HP Power Four]

Data Source [Field Not Templated]

The data source to use for this graph item.

HP Power1dt - (hp_power1)

Color

The color to use for the legend.

FFF200

Opacity/Alpha Channel

The opacity/alpha channel of the color. Not available for rrdtool-1.0.x.

100%

Graph Item Type

How data for this item is represented visually on the graph.

AREA

Consolidation Function

How data for this item is represented statistically on the graph.

LAST

CDEF Function

A CDEF (math) function to apply to this item on the graph.

None

Value

The value of an HRULE or VRULE graph item.

GPRINT Type

If this graph item is a GPRINT, you can optionally choose another format here. You can define additional types under "GPRINT Presets".

Normal

Text Format

Text that will be displayed on the legend for this graph item.

Power1

Insert Hard Return

Forces the legend to the next line after this item.

Insert Hard Return

Sequence

1

SUITE ITEMS - TRACÉ LIGNE TOTAL P

Graph Template Items [edit graph: HP Power Four]

Data Source

The data source to use for this graph item.

None

Color

The color to use for the legend.



Opacity/Alpha Channel

The opacity/alpha channel of the color. Not available for rrdtool-1.0.x.

100% ↕

Graph Item Type

How data for this item is represented visually on the graph.

LINE1 ↕

Consolidation Function

How data for this item is represented statistically on the graph.

LAST ↕

CDEF Function

A CDEF (math) function to apply to this item on the graph.

Total All Data Sources

Value

The value of an HRULE or VRULE graph item.

GPRINT Type

If this graph item is a GPRINT, you can optionally choose another format here. You can define additional types under "GPRINT Presets".

Normal ↕

Text Format

Text that will be displayed on the legend for this graph item.

Total (Watt)

Insert Hard Return

Forces the legend to the next line after this item.

Insert Hard Return

Sequence

9

SUITE ITEM - TEXTE MOYENNE (TOTAL)

Graph Template Items [edit graph: HP Power Four]

Data Source

The data source to use for this graph item.

None

Color

The color to use for the legend.

None

Opacity/Alpha Channel

The opacity/alpha channel of the color. Not available for rrdtool-1.0.x.

100%

Graph Item Type

How data for this item is represented visually on the graph.

GPRINT

Consolidation Function

How data for this item is represented statistically on the graph.

AVERAGE

CDEF Function

A CDEF (math) function to apply to this item on the graph.

Total All Data Sources

Value

The value of an HRULE or VRULE graph item.

GPRINT Type

If this graph item is a GPRINT, you can optionally choose another format here. You can define additional types under "GPRINT Presets".

Normal

Text Format

Text that will be displayed on the legend for this graph item.

average:

Insert Hard Return

Forces the legend to the next line after this item.

Insert Hard Return

Sequence

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ASSOCIATION GRAPH - HOST

Console -> Data Sources -> (Edit)

- Create
- New Graphs
- Management
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irma-atlas - HPowerConso

*Turn

Data Template Selection [edit: irma-atlas - HPowerConso]

Selected Data Template

The name given to this data template.

HP Power Conso

Host

Choose the host that this graph belongs to.

irma-atlas (irma-atlas)

Supplemental Data Template Data

Data Source Fields

Data Source Path

The full path to the RRD file.

<path_rra>/irma-atlas_hppowerconso_2635.rrd

Data Source Debug

```
/usr/bin/rrdtool create \  
/var/www/html/cacti-0.8.8f/rra/irma-atlas_hppowerconso_2635.rrd \  
--step 300 \  
DS:HPpowerConso:GAUGE:600:0:10000 \  
RRA:AVERAGE:0.5:1:500 \  
RRA:AVERAGE:0.5:1:600 \  
RRA:AVERAGE:0.5:6:700 \  
RRA:AVERAGE:0.5:24:775 \  
RRA:AVERAGE:0.5:288:797 \  
RRA:MIN:0.5:1:500 \  
RRA:MIN:0.5:1:600 \  
RRA:MIN:0.5:6:700 \  
RRA:MIN:0.5:24:775 \  
RRA:MIN:0.5:288:797 \  
RRA:MAX:0.5:1:500 \  
RRA:MAX:0.5:1:600 \  
RRA:MAX:0.5:6:700 \  
RRA:MAX:0.5:24:775 \  
RRA:MAX:0.5:288:797 \  
RRA:LAST:0.5:1:500 \  
RRA:LAST:0.5:1:600 \  
RRA:LAST:0.5:6:700 \  
RRA:LAST:0.5:24:775 \  
RRA:LAST:0.5:288:797
```



CONCLUSION : AVANTAGES

- Concept de templates très intéressant
- Graphiques sophistiqués complètement paramétrables
- Découverte des « attributs métrologiques » d'un host via les templates associés
- Produit « rodé » toujours en développement, forte communauté
- Partages des plugins et templates...

CONCLUSION : INCONVÉNIENTS

- Approche de l'outil aisée, mais complexité dans sa gestion fine et le développement.
Documentation moyenne !
- Tout est « graphique » dans l'interface de gestion.
Problème pour de gros déploiements.
- A la limite « usine à gaz » 😊
- Outils de métrologie pure, pas de supervision sauf « host down » !
- Toujours un problème de couplage avec d'autres outils, ex. Nagios !