Cacti 網管軟體

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今天討論內容

- What is Cacti?
- 使用Cacti 的原因和好處
- Cacti 在實務上的運用
- 告警類型
- 各項設定方式
- What is rrdtool?
- rrdtool和MRTG的差異
- 程式碼解說
- 資料來源



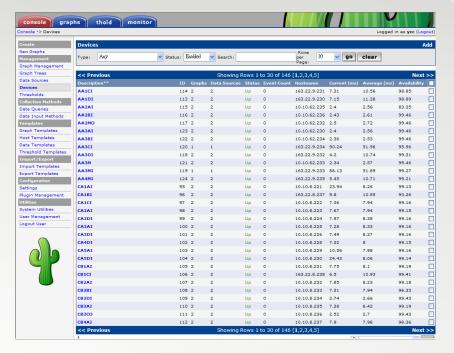
What is Cacti

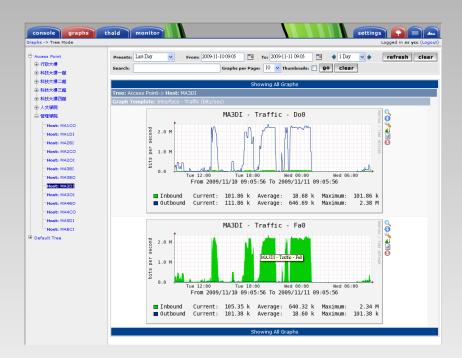
提供管理者進行遠端設備監控的平台 包括流量,負載,溫度,人數等...

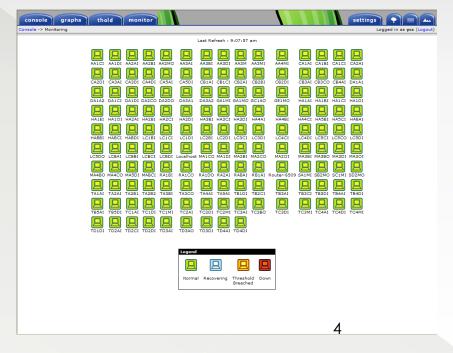
基本套件Apache、PHP、 MYSQL、SNMP

必要套件RRDTOOL 、Cacti









使用Cacti 的原因與好處

- 系統管理者
 - > 架設簡易
 - > 使用容易
 - > 實用的 plugin
 - Monitor
 - Settings
 - THOLD





Cacti在實務上的運用



Router

- CPU Loading
- 骨幹流量



Switch & AP

- 行政、教學
- 科院、管院、人院
- 學生宿舍、餐廳
- 其他地區

告警類型一



Normal Recovering Threshold Down

告警類型一

Host Error : TC2DI (163.22.19.236) is DOWN

Message : Host did not respond to SNMP

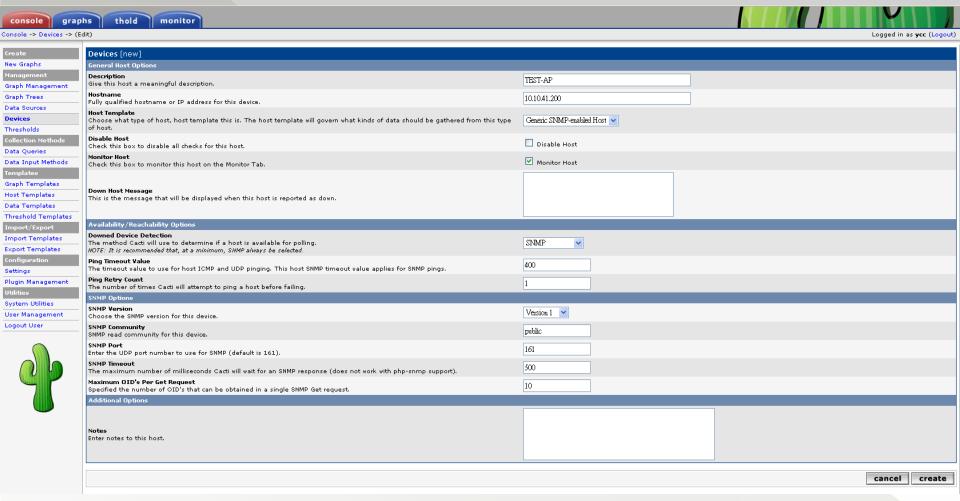
눈 ★	0 主旨	68 寄件者	▼ 例 日期
	Host Notice: 14-251 (10.10.14.251) returned from DOWN state	 Cacti-Switch 	● 2009/10/28 上午 09:19
	Host Notice: 54-247 (10.10.54.247) returned from DOWN state	 Cacti-Switch 	● 2009/10/28 上午 11:19
	Host Error : TC2DI (163.22.19.236) is DOWN	 Cacti-WLAN 	- 2009/10/19 下午 01:50
	Host Notice: TC2DI (163.22.19.236) returned from DOWN state	 Cacti-WLAN 	- 2009/10/19 下午 02:05
	Host Error: RA1BI (10.10.17.233) is DOWN	 Cacti-WLAN 	• 2009/10/27 下午 12:55
	Host Notice: RA1BI (10.10.17.233) returned from DOWN state	 Cacti-WLAN 	• 2009/10/27 下午 01:15
	Host Notice: LC2BI (10.10.41.208) returned from DOWN state	 Cacti-WLAN 	2009/11/6 上午 04:50
	Host Error: TB2CI (163.22.23.234) is DOWN	 Cacti-WLAN 	• 2009/11/7 下午 04:15
	Host Notice: TB2CI (163.22.23.234) returned from DOWN state	 Cacti-WLAN 	• 2009/11/7 下午 04:30
	Host Error : TB5AI (163.22.23.239) is DOWN	 Cacti-WLAN 	• 2009/11/7 下午 05:30
	Host Notice: TB5AI (163.22.23.239) returned from DOWN state	 Cacti-WLAN 	• 2009/11/7 下午 05:45
	Host Error: TB5AI (163.22.23.239) is DOWN	 Cacti-WLAN 	• 2009/11/7 下午 06:00
	Host Error: TB2CI (163.22.23.234) is DOWN	 Cacti-WLAN 	• 2009/11/7 下午 06:00
	Host Notice: TB2CI (163.22.23.234) returned from DOWN state	 Cacti-WLAN 	• 2009/11/7 下午 06:15
	Host Notice: TB5AI (163.22.23.239) returned from DOWN state	 Cacti-WLAN 	• 2009/11/7 下午 06:15
	主旨: Host Error: TC2DI (163.22.19.236) is DOWN		
	件者: Cacti-WLAN		
	日期 : 2009/10/19 下午 01:50		
바	[件者: ycc@ncnu.edu.tw, eshin@ncnu.edu.tw		
	- Josephine Control of		

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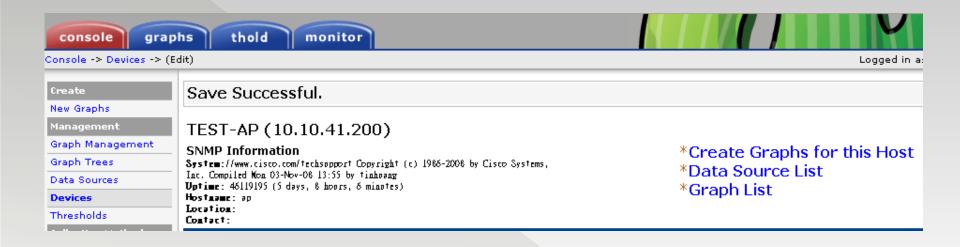
操作說明

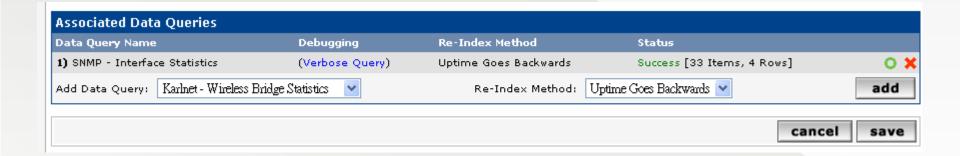
- 1.新增設備流量
- 2.新增CPU Loading
- 3.設定異常告警

新增設備流量-1

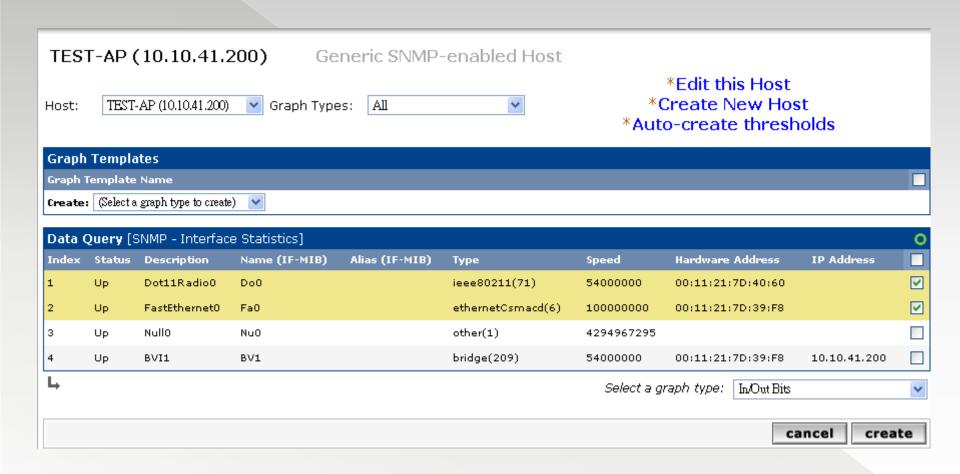


新增設備流量-2

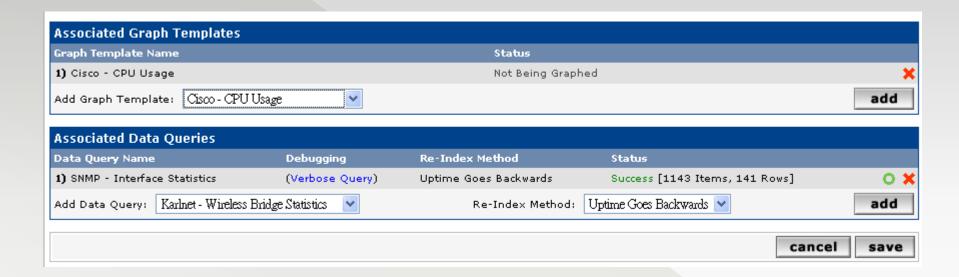




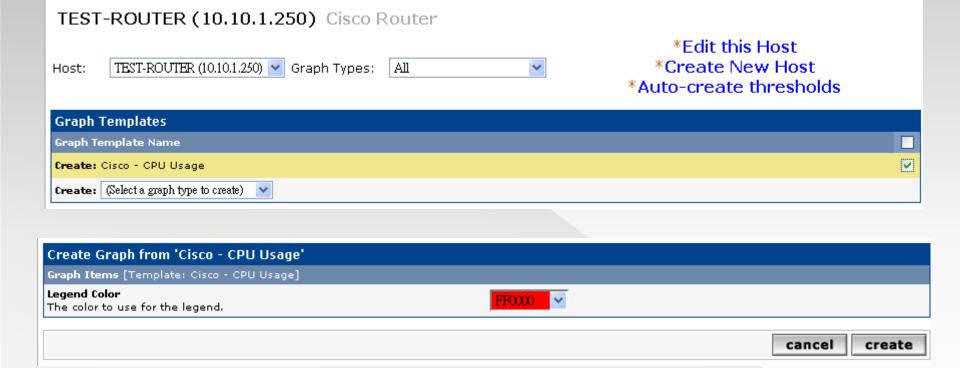
新增設備流量-3



新增 CPU loading - 1



新增 CPU loading - 2



設定異常告警 - 1

console graphs thold	monitor		
Console -> Create Threshold			
Create	Threshold Creation	Threshold Creation Wizard	
New Graphs			
Management	Please press "Cr	eate" to activate your Threshold	
Graph Management	Host:	TEST-ROUTER (10.10.1.250)	
Graph Trees	nost		
Data Sources	Graph:	TEST-ROUTER - CPU Usage 💌	
Devices	Data Source:	5min_cpu 🕶	
Thresholds			
Collection Methods		create	
Data Queries			
Data Input Methods			

設定異常告警-2

Create

New Graphs

Graph Management

Graph Trees

Data Sources

Devices

.

Data Queries

Data Source Description: TEST-ROUTER - 5 Minute CPU

8382 - TEST-ROUTER - CPU Usage 🔻

Associated Graph (graphs that use this RRD):

Data Input Methods

Data Imput medious

Graph Templates

Host Templates

Data Templates

Threshold Templates

Tillesiloid Templace

Import Templates

import remplaces

Export Templates

Configuration

Settings

Plugin Management

Utilities

System Utilities

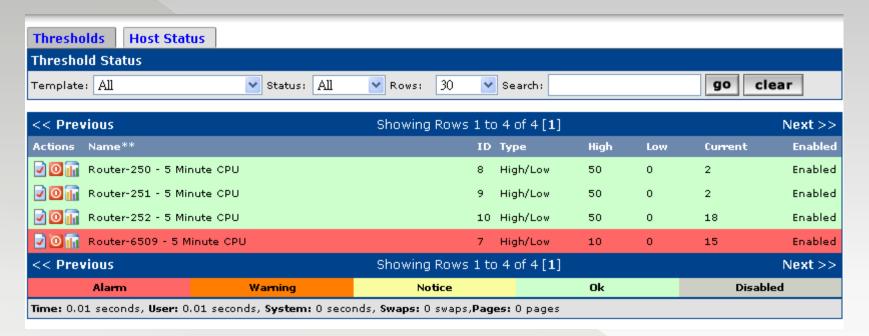
User Management

Logout User



Template settings		
Template Propagation Enabled Whether or not these settings will be propagates from the threshold template.	☐ Template Propagation Enabled	
Mandatory settings		
Threshold Name Provide the THold a meaningful name	TEST-ROUTER - 5 Minute CPU	
Threshold Enabled Whether or not this threshold will be checked and alerted upon.	✓ Threshold Enabled	
Weekend Exemption If this is checked, this Threshold will not alert on weekends.	☐ Weekend Exemption	
Disable Restoration Email If this is checked, Thold will not send an alert when the threshold has returned to normal status.	Disable Restoration Email	
Threshold Type The type of Threshold that vill be monitored.	High /Low Values 💌	
High / Low Settings		
High Threshold If set and data source value goes above this number, alert will be triggered	30	
Low Threshold If set and data source value goes below this number, alert will be triggered	0	
Breach Duration The amount of time the data source must be in breach of the threshold for an alert to be raised.	5 Minutes 💌	
Data Manipulation		
Data Type Special formatting for the given data.	Exact Value	
Other setting		
Re-Alert Cycle Repeat alert after this amount of time has pasted since the last alert.	Every Hour	
Notify accounts This is a listing of accounts that will be notified when this threshold is breached.	ycc - Email	
Extra Alert Emails You may specify here extra e-mails to receive alerts for this data source (comma separated)		

設定異常告警-3







What is rrdtool

● rrdtool 和 MRTG 是相同的作者

● 面對MRTG的缺點進行改進,但並非完美

● 使用動機 – 效率問題 使用rrdtool的出發點,是因為在相同伺服器下,使用rrdtool會比使用MRTG監測更多的遠端網路設備

rrdtool & MRTG 的差異

MRTG 因資料儲存格式的關係,所以時間單位為日、週、月。

● rrdtool透過數值再運算的方式,提供比較好的處理方法在數值差異過大問題 上

● 因架構的改變,rrdtool 具有強大的繪圖能力

rrdtool 的運作流程

rrdtool create

- rrd的資料庫 副檔名為*.rrd
- 例如 AA1CI.rrd AA1DI.rrd

• • • • •

rrdtool update

- 將snmpget 取得的資料 更新到資料 庫內,例如 AA1CI.rrd
 - 五分鐘一次

rrdtool graph

只需要繪圖 的時候才執 行,可以減 少 server 的 loading

rrdtool create

```
rdtool create $1.rrd -s 300 \
DS:tt:GAUGE:600:0:U \
DS:hh:GAUGE:600:0:U \
RRA:AVERAGE:0.5:1:603 \
|RRA:AVERAGE:0.5:6:603
|RRA:AVERAGE:0.5:24:603
RRA: AVERAGE: 0.5:288:800
RRA:MAX:0.5:1:603
RRA:MAX:0.5:6:603
|RRA:MAX:0.5:24:603
RRA:MAX:0.5:288:800
RRA:MIN:0.5:1:603
RRA:MIN:0.5:6:603
RRA:MIN:0.5:24:603
RRA:LAST:0.5:1:603
RRA:LAST:0.5:6:603
RRA:LAST:0.5:24:603
RRA:LAST:0.5:288:800
```

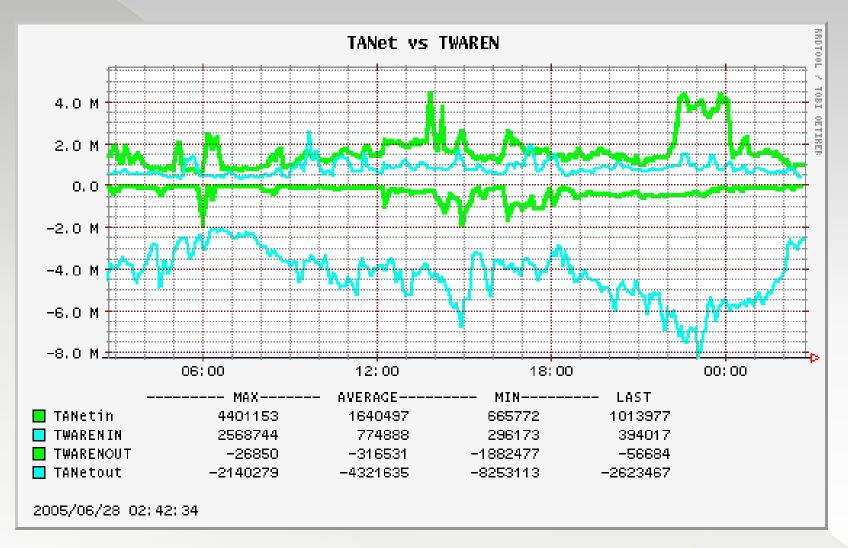
rrdtool update

```
#!/bin/bash
now=`date +%s`
in=`snmpwalk -v l -c 密碼 ip-address ifInOctets.l | gawk '{ print $4 }'`$in
out=`snmpwalk -v l -c 密碼 ip-address ifOutOctets.l | gawk '{ print $4 }'`$out
rrdtool update /home/rrdtool/sslvpn/sslvpn.rrd $now:${in}:${out}
```

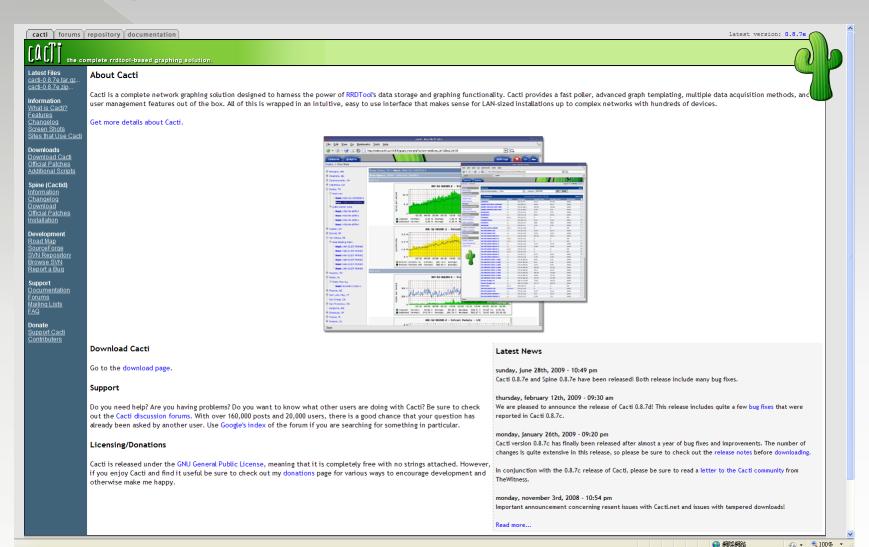
rrdtool graph

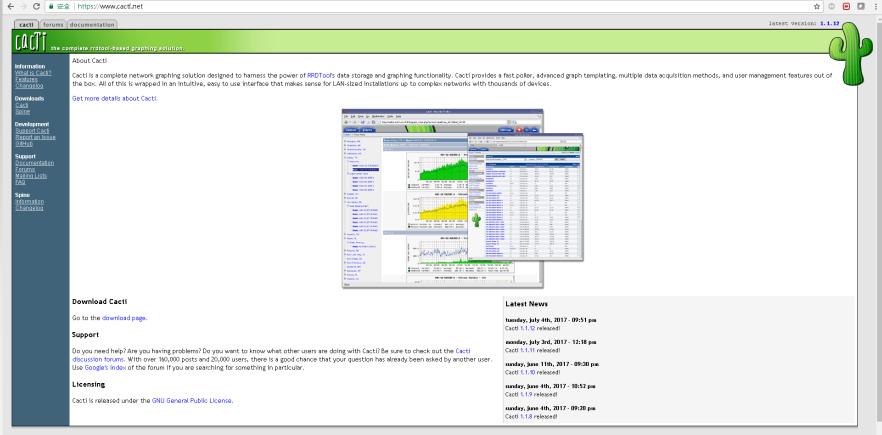
```
_ANG=UTF-8
time="hour day week month"
for t in $time
rrdtool graph /home/rrdtool/www/sslvpn_$t.png \
DEF:in=/home/rrdtool/sslvpn/sslvpn.rrd:in:AVERAGE \
DEF:out=/home/rrdtool/sslvpn/sslvpn.rrd:out:AVERAGE \
COMMENT: "
LINE2: in:
GPRINT: in: MAX: "
GPRINT: in: AVERAGE: "%
GPRINT: in:MIN:"
GPRINT: in:LAST: "%1
LINE2:out
GPRINT: out: MAX:"
GPRINT: out: AVERAGE: "%12
GPRINT: out: MIN: "9
GPRINT:out:LAST:"%12.01f \n"
COMMENT: " date "+%Y/%m/%d" "
```

rrdtool 繪製的圖



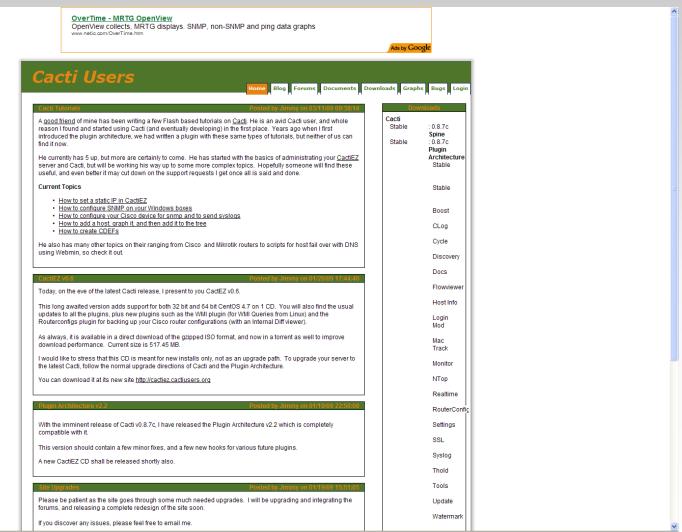
http://www.cacti.net/





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http://cactiusers.org



https://docs.cacti.net/plugins

