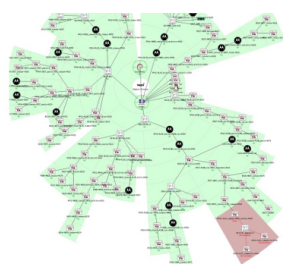




Analisi e Implementazione di Sistemi per il Monitoraggio della Rete Wireless Relativa al Progetto ADD (Anti Digital Divide) e delle Infrastrutture di Campus AdR RM1.[†]

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In questo documento verranno valutati 3 sistemi di monitoring Open-Source (Nagios, Cacti e Zabbix) e si mostreranno sia le peculiarità che i differenti pro e contro. Verrà esposto il funzionamento di ogni singolo sistema con le relative operazioni di installazione e configurazione, al fine di fornire un quadro completo delle potenzialità dei mezzi. Infine verrà illustrato l'utilizzo dei tre sistemi di monitoraggio nel caso reale della rete di campus dell'Area della Ricerca Roma 1 e della rete wireless realizzata nel territorio della sabina romana e reatina.

Keywords: Monitoring System, Zabbix, Cacti, Nagios.

Documentazione Supplementare

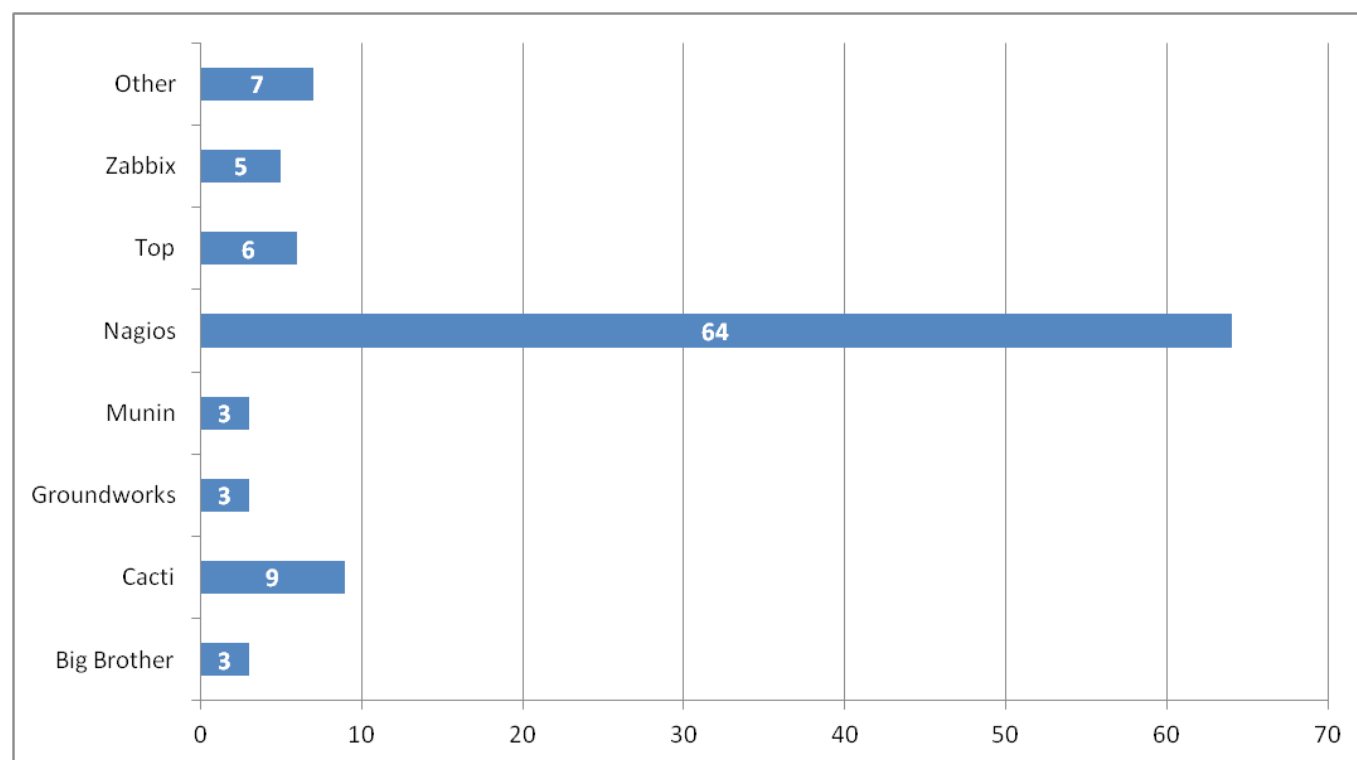


Fig. 1 Diffusioni prodotti OpenSource per il monitoraggio di reti e sistemi ICT.

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[†] Rapporto tecnico IC-RM/1058 protocollato in data 03/07/2012

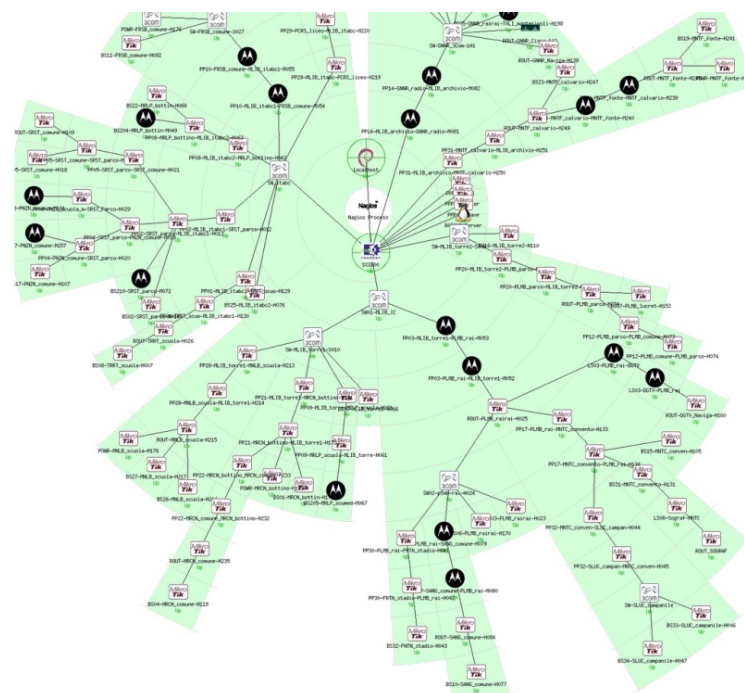
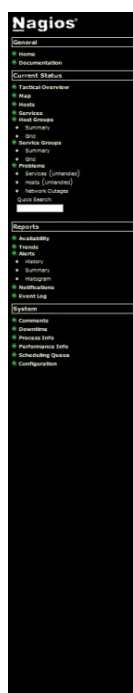


Fig. 2 Mappa di Nagios.

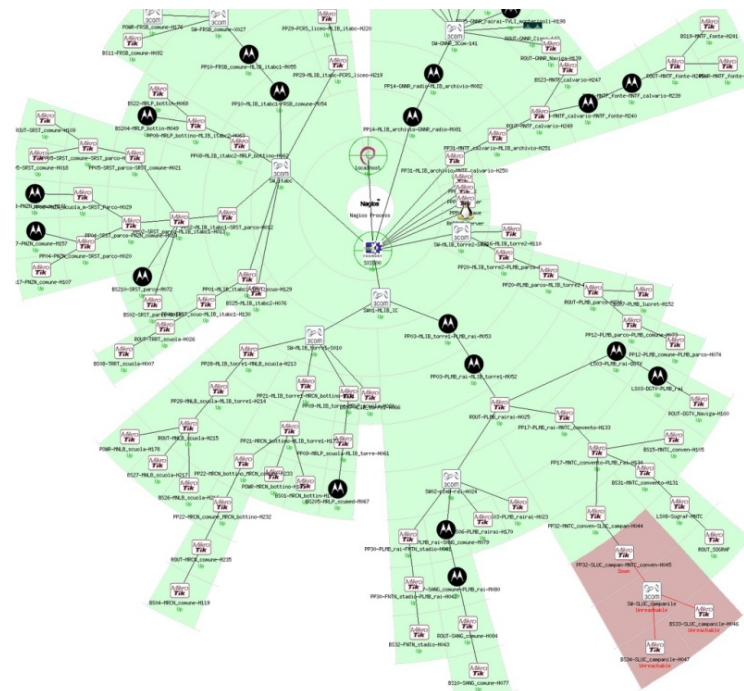
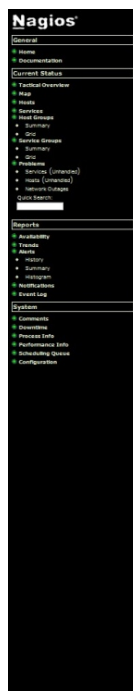


Fig. 3 Mappa di Nagios con evidenziato malfunzionamento host.

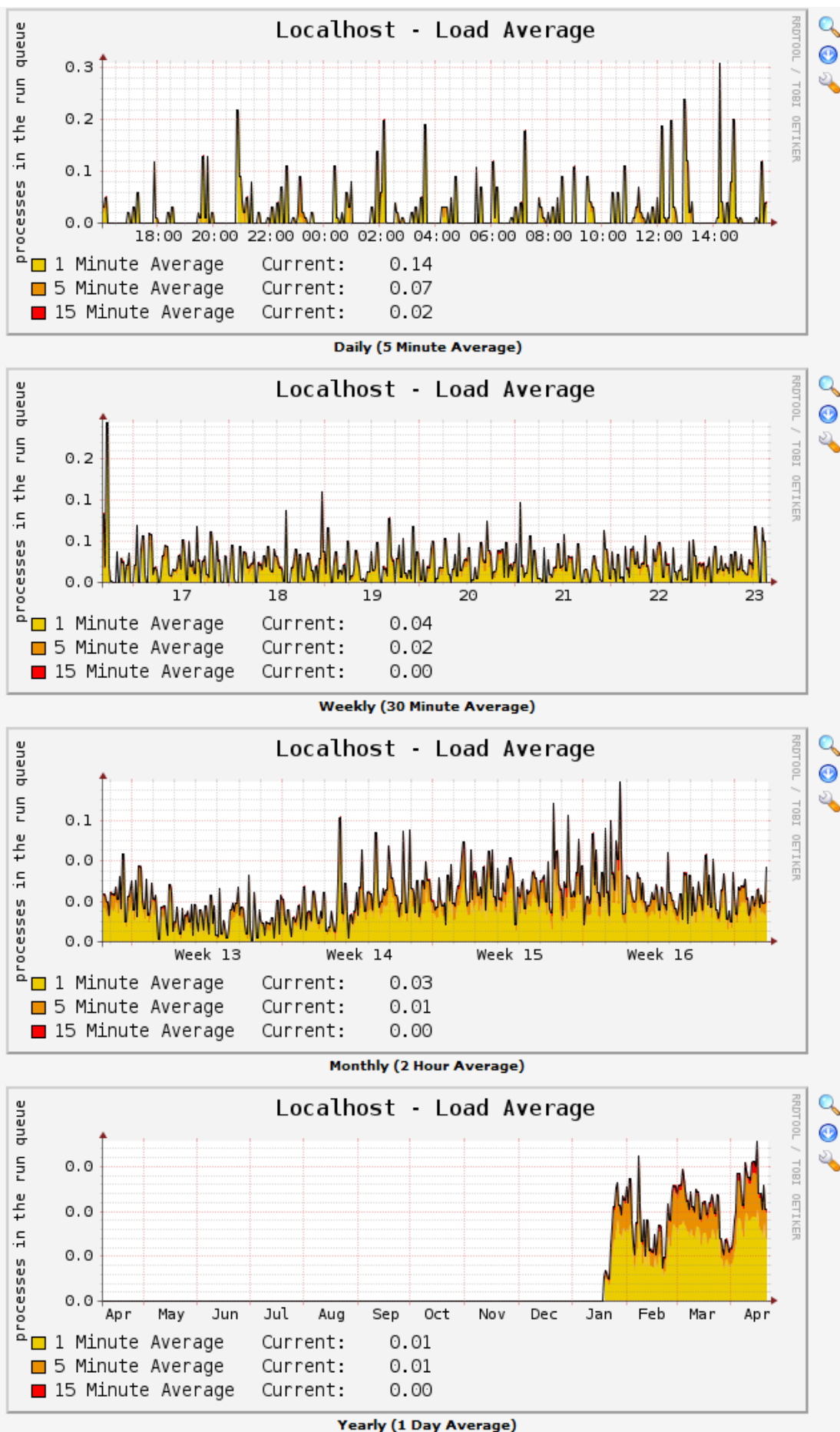


Fig. 4 Grafici e gestione database

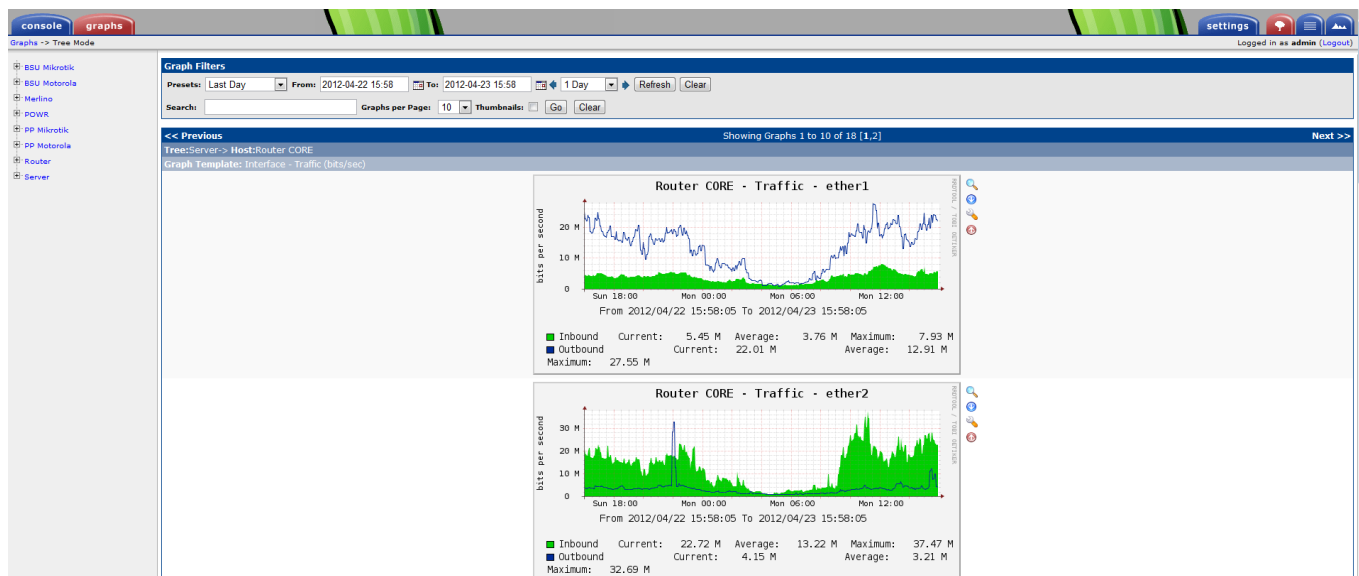


Fig. 5 Traffico in/out sulle interfacce di un router.

The screenshot shows the 'CONFIGURATION OF HOSTS' window in Zabbix. The 'Host' section is active, and the 'Name' field is empty. The 'Groups' section shows a list of groups, with 'Mikrotik' selected. The 'Other groups' section lists various other groups. The 'New group' field is empty. The 'DNS name' field is empty. The 'IP address' field is set to '0.0.0.0'. The 'Connect to' dropdown is set to 'IP address'. The 'Zabbix agent port' field is set to '0'. The 'Monitored by proxy' dropdown is set to '(no proxy)'. The 'Status' dropdown is set to 'Monitored'. The 'Use IPMI' checkbox is unchecked. The 'Save' and 'Cancel' buttons are at the bottom right.

Fig. 7 Configurazione di un host.

CONFIGURATION OF ITEMS											Create Item
ITEMS											
Displaying 1 to 2 of 2 found											
Filter											
Templates list	Applications (0)	Triggers (2)	Graphs (0)	Template: Ping Performance Check							
☐	Wizard	Description	Triggers	Key	Interval	History	Trends	Type	Status	Applications	Error
☐		ICMP Link	Triggers (1)	icmpping	30	90	365	Simple check	Active	-	☒
☐		ICMP Roundtrip	Triggers (1)	icmppingsec	60	90	365	Simple check	Active	-	☒

Fig. 8 Lista degli items attivi.

CONFIGURATION OF TRIGGERS

Create Trigger

TRIGGERS

Group all Host Ping Performance Check

Displaying 1 to 2 of 2 found

Show disabled triggers

Templates listApplications (0)Items (2)Graphs (0)Template: Ping Performance Check

☐	Severity	Status	Name	Expression	Error
☐	Disaster	Enabled	Host Down	{Ping Performance Check:icmpping.max(120)}<1	☒
☐	Warning	Enabled	Ping High	{Ping Performance Check:icmppingsec.avg(#5)}>500	☒

Activate selectedGo (0)

Fig. 9 Lista triggers attivi sul sistema.

CONFIGURATION OF ACTIONS

Action

Name

Manda messaggio a staff

Event source

Triggers

Enable escalations

☒

Period (seconds)

120 [min 60]

Default subject

[Zabbix] {TRIGGER.NAME}: {STATUS} on {HOSTNAME}

Default message

{TRIGGER.NAME}: {STATUS}

{DATE} {TIME}

Severity: {TRIGGER.SEVERITY}

Trigger key: {TRIGGER.KEY}

Value: {{HOSTNAME}}:

Recovery message

☒

Recovery subject

[Zabbix] {TRIGGER.NAME}: {STATUS} on {HOSTNAME}

Recovery message

{TRIGGER.NAME}: {STATUS}

{DATE} {TIME}

Severity: {TRIGGER.SEVERITY}

Trigger key: {TRIGGER.KEY}

Value: {{HOSTNAME}}:

Status

Enabled

Save

Clone

Delete

Cancel

Fig. 10 Creazione di una action.

Action

Name

Manda messaggio a staff OK

Event source

Triggers

Enable escalations

☒

Period (seconds)

120 [min 60]

Default subject

[Zabbix] {TRIGGER.NAME}: {STATUS} on {HOSTNAME}

Default message

{TRIGGER.NAME}: {STATUS}

{DATE} {TIME}

Severity: {TRIGGER.SEVERITY}

Trigger key: {TRIGGER.KEY}

Value: {{HOSTNAME}}: {TRIGGER.KEY}.last(0)

Recovery message

☒

Recovery subject

[Zabbix] {TRIGGER.NAME}: {STATUS} on {HOSTNAME}

Recovery message

{TRIGGER.NAME}: {STATUS}

{DATE} {TIME}

Severity: {TRIGGER.SEVERITY}

Trigger key: {TRIGGER.KEY}

Value: {{HOSTNAME}}: {TRIGGER.KEY}.last(0)

Status

Enabled

Save

Clone

Delete

Cancel

Action conditions

Type of calculation

AND / OR

(A) and (B) and (C)

Conditions

(A) ☐ Trigger value = "PROBLEM"

(B) ☐ Maintenance status not in "maintenance"

(C) ☐ Host group <> "ProvinciaWifi"

New

Delete selected

Action operations

Steps

Details

2 - 0

Send message to Group "Zabbix administrators"

3600

00:02:00

Edit

Delete selected

Edit operation

From

2

Step

To

0 [0-Infinity]

Period

3600 [min 60, 0-Default]

Operation type

Send message

Send message to

User group

Zabbix administrators

Select

Send only to

- all -

Default message

☒

Conditions

(A) ☐ Event acknowledged = "Not Ack"

New

Delete selected

Save

Cancel

Fig. 11 Una action che prevede escalation.

Action

Name

Send Sms Gruppo Script OK

Event source

Triggers

Enable escalations

☒

Period (seconds)

1800 [min 60]

Default subject

check zabbix

Default message

Recovery message

☐

Status

Enabled

Save

Clone

Delete

Cancel

Action conditions

Type of calculation

AND (A) and (B) and (C) and (D)

(A)

☐ Trigger value = "PROBLEM"

(B)

☐ Trigger severity = "Disaster"

(C)

☐ Maintenance status not in "maintenance"

(D)

☐ Host group <> "ProvinciaWifi"

New

Delete selected

Action operations

Steps	Details	Period (sec)	Delay	Action
2	Run remote commands	1800	00:30:00	Edit

Delete selected

Edit operation

From

2

To

2 [0-Infinity]

Period

1800 [min 60, 0-Default]

Operation type

Remote command

Remote command

Zabbix server/bin/send_sms.sh Alert - {HOSTNAME} - Ip: {IPADDRESS} - {TRIGGER.NAME} - {TIME} - Start: {EVENT.AGE}

Conditions

(A) ☐ Event acknowledged = "Not Ack"

New

Delete selected

Save

Cancel

Fig. 12 Esecuzione di un comando remoto tramite Zabbix.

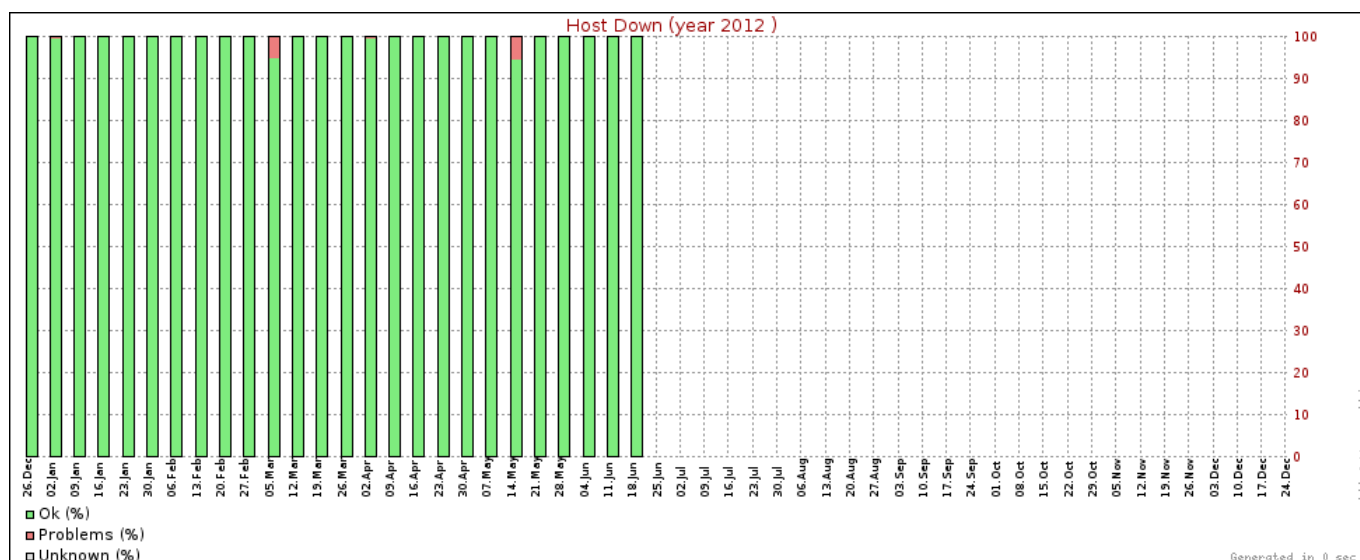


Fig. 13 Availability report.