Nagios

Network Design and Operations
24 July 2009

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Introduction

• A key measurement tool for actively monitoring availability of devices and services.
• Possible the most used open source network monitoring software.
• Has a web interface.
  – Uses CGIs written in C for faster response and scalability.
• Can support up to thousands of devices and services.
Tactical Monitoring Overview
Last Updated: Wed Jun 28 18:30:48 PDT 2006
Updated every 90 seconds
Nagios - www.nagios.org
Logged in as eugene

Monitoring Performance
- Service Check Execution Time: 0.00 / 10.32 / 0.180 sec
- Service Check Latency: 0.00 / 1.83 / 0.360 sec
- Host Check Execution Time: 0.00 / 6.59 / 0.245 sec
- Host Check Latency: 0.00 / 0.00 / 0.000 sec
- # Active Host / Service Checks: 1736 / 3495
- # Passive Host / Service Checks: 0 / 5

Network Health
- Host Health: [green]
- Service Health: [green]

Network Outages
- 0 Outages

Hosts
- 2 Down
- 0 Unreachable
- 1733 Up
- 1 Pending

Services
- 5 Critical
- 0 Warning
- 0 Unknown
- 1771 Ok
- 1724 Pending

Monitoring Features
- Flap Detection: [green]
- Notifications: [green]
- Event Handlers: [green]
- Active Checks: [green]
- Passive Checks: [green]

- 1979 Services Enabled
- No Services Flapping
- All Hosts Enabled
- All Hosts Enabled
- All Hosts Enabled
- All Hosts Enabled
- All Hosts Enabled
Features

• Verification of availability is delegated to plugins:
  – The product's architecture is simple enough that writing new plugins is fairly easy in the language of your choice.
  – There are many, many plugins available.

• *Nagios uses parallel checking and forking.*
  ▪ *Version 3 of Nagions does this better.*
Features cont.

• Has intelligent checking capabilities. Attempts to distribute the server load of running Nagios (for larger sites) and the load placed on devices being checked.

• Configuration is done in simple, plain text files, but that can contain much detail and are based on templates.

• Nagios reads its configuration from an entire directory. You decide how to define individual files.
Yet More Features...

• Utilizes topology to determine dependencies.
  - *Nagios differentiates between what is down vs. what is not available. This way it avoids running unnecessary checks.*

• *Nagios allows you to define how you send notifications based on combinations of:*
  - Contacts and lists of contacts
  - Devices and groups of devices
  - Services and groups of services
  - Defined hours by persons or groups.
  - The state of a service.
And, even more...

**Service state:**

- When configuring a service, you have the following notification options:
  - **d:** DOWN: The service is down (not available)
  - **u:** UNREACHABLE: When the host is not visible
  - **r:** RECOVERY: (OK) Host is coming back up
  - **f:** FLAPPING: When a host first starts or stops or its state is undetermined.
  - **n:** NONE: Don't send any notifications
NOTE: The flow will only continue when each of the listed filters are satisfied.
Features, features, features

• Allows you to acknowledge an event.
  − A user can add comments via the GUI
• You can define maintenance periods
  − By device or a group of devices
• Maintains availability statistics.
• Can detect *flapping* and suppress additional notifications.
• Allows for multiple notification methods such as:
  − e-mail, pager, SMS, winpopup, audio, etc...
• *Allows you to define notification levels. Critical feature.*
How Checks Work

• A node/host/device consists of one or more service checks (PING, HTTP, MYSQL, SSH, etc)

• Periodically Nagios checks each service for each node and determines if state has changed. State changes are:
  - CRITICAL
  - WARNING
  - UNKNOWN

• For each state change you can assign:
  - Notification options (as mentioned before)
  - Event handlers
How Checks Work

• Parameters
  - Normal checking interval
  - Re-check interval
  - Maximum number of checks.
  - Period for each check

• Node checks only happen when on services respond (assuming you've configured this).
  - A node can be:
    • DOWN
    • UNREACHABLE
How Checks Work

In this manner it can take some time before a host change's its state to “down” as Nagios first does a service check and then a node check.

By default Nagios does a node check 3 times before it will change the nodes state to down.

You can, of course, change all this.
The Concept of “Parents”

- Nodes can have parents.
  - For example, the parent of a PC connected to a switch would be the switch.
  - This allows us to specify the network dependencies that exist between machines, switches, routers, etc.
  - This avoids having Nagios send alarms when a parent does not respond.
  - A node can have multiple parents.
The Idea of Network Viewpoint

- Where you locate your Nagios server will determine your point of view of the network.
- Nagios allows for parallel Nagios boxes that run at other locations on a network.
- Often it makes sense to place your Nagios server nearer the border of your network vs. in the core.
Network Viewpoint
Nagios Configuration Files

- **nagios.cfg**: Main config file that defines other files, logging, events, etc. Interprets files using macros defined in.
  - **resource.cfg**: Macros referred to in other files. e.g., $USER$ = nagios home dir.

- **Nagios Daemon**: Refers to central configuration file.

- **Apache**
  - **httpd.conf**: Apache include file describing how to display nagios web pages.
  - **.htaccess**: Apache security definition, detailing allowed users.
  - **htpasswd.users**: People authorized to input parts of nagios and their passwords.

- **cgi.cfg**: Parameters customizing the action of the web pages.
  - **hostgroups.cfg**: Groups hosts into types for alerting and display purposes.
  - **escalations.cfg**: If something breaks and is not fixed, who can we complain to next?
  - **contacts.cfg**: People that we can call on to fix hosts and services.
    - **contactsgroups.cfg**: Contacts are grouped since we need some support redundancy.
  - **services.cfg**: Central monitoring component along with hosts.
  - **timeperiods.cfg**: For example, "work hours" or "24 x 7" or "overseas".
  - **checkcommands.cfg**: How to check hosts and services are working.
    - **dependencies.cfg**: Sometimes things wrongly appear dead because something else broke.
  - **hosts.cfg**: Central monitoring component along with services.
    - **checkcommands.cfg**: Check hosts and services are working.

- **hostgroups.cfg**: Groups hosts into types for alerting and display purposes.
  - **checkcommands.cfg**: How to check hosts and services are working.

- **checkcommands.cfg**: How to check hosts and services are working.

- **dependencies.cfg**: Sometimes things wrongly appear dead because something else broke.
Configuration Files

- Located in /etc/nagios3/
- Important files include:
  - `cgi.cfg` Controls the web interface and security options.
  - `commands.cfg` The commands that Nagios uses for notifications.
  - `nagios.cfg` Main configuration file.
  - `conf.d/*` All other configuration goes here!
Configuration Files

Under conf.d/* (sample only)

- contacts_nagios3.cfg  
  users and groups
- generic-host_nagios2.cfg  
  default host template
- generic-service_nagios2.cfg  
  default service template
- hostgroups_nagios2.cfg  
  groups of nodes
- services_nagios2.cfg  
  what services to check
- timeperiods_nagios2.cfg  
  when to check and who to notify
Configuration Files

Under conf.d some other possible configfiles:

- `host-gateway.cfg`  Default route definition
- `extinfo.cfg`  Additional node information
- `servicegroups.cfg`  Groups of nodes and services
- `localhost.cfg`  Define the Nagios server itself
- `pcs.cfg`  Sample definition of PCs (hosts)
- `switches.cfg`  Definitions of switches (hosts)
- `routers.cfg`  Definitions of routers (hosts)
Plugin Configuration

The Nagios package in Ubuntu comes with a bunch of pre-installed plugins:

apt.cfg  breeze.cfg  dhcp.cfg  disk-smb.cfg
disk.cfg  dns.cfg  dummy.cfg  flexlm.cfg
fping.cfg  ftp.cfg  games.cfg  hppjd.cfg
http.cfg  ifstatus.cfg  ldap.cfg  load.cfg
mail.cfg  mrtg.cfg  mysql.cfg  netware.cfg
news.cfg  nt.cfg  ntp.cfg  pgsql.cfg
ping.cfg  procs.cfg  radius.cfg  real.cfg  rpc-nfs.cfg
snmp.cfg  ssh.cfg  tcp_udp.cfg
telnet.cfg  users.cfg  vsz.cfg
Main Configuration Details

• Global settings

• File: /etc/nagios2/nagios.cfg
  • Says where other configuration files are.
  • General Nagios behavior:
    • For large installations you should tune the installation via this file.
      • See: Tuning Nagios for Maximum Performance
        http://nagios.sourceforge.net/docs/2_0/tuning
CGI Configuration

- Archivo: /etc/nagios3/cgi.cfg
  - You can change the CGI directory if you wish
  - Authentication and authorization for Nagios use.
    - Activate authentication via Apache's .htpasswd mechanism, or using RADIUS or LDAP.
    - Users can be assigned rights via the following variables:
      - authorized_for_system_information
      - authorized_for_configuration_information
      - authorized_for_system_commands
      - authorized_for_all_services
      - authorized_for_all_hosts
      - authorized_for_all_service_commands
      - authorized_for_all_host_commands
Time Periods

- This defines the base periods that control checks, notifications, etc.
  - Defaults: 24 x 7
  - Could adjust as needed, such as work week only.
  - Could adjust a new time period for “outside of regular hours”, etc.

```mermaid
define timeperiod{
  timeperiod_name 24x7
  alias 24 Hours A Day, 7 Days A Week
  sunday 00:00-24:00
  monday 00:00-24:00
  tuesday 00:00-24:00
  wednesday 00:00-24:00
  thursday 00:00-24:00
  friday 00:00-24:00
  saturday 00:00-24:00
}
```
Configuring Service/Host Checks

Define how you are going to test a service.

```
# 'check-host-alive' command definition
define command{
    command_name     check-host-alive
    command_line     $USER1$/check_ping -H $HOSTADDRESS$ -w 2000.0,60% -c 5000.0,100%
                     -p 1 -t 5
}
```

Located in /etc/nagios-plugins/config, then adjust in /etc/nagios3/conf.d/services_nagios2.cfg
Notification Commands

- Allows you to utilize any command you wish. We'll do this for our generating tickets in RT.

```plaintext
# 'notify-by-email' command definition
define command{
    command_name    notify-by-email
    command_line    /usr/bin/printf "%b" "Service: $SERVICEDESC$\nHost: $HOSTNAME$\nIn: $HOSTALIAS$\nAddress: $HOSTADDRESS$\nState: $SERVICESTATE$\nInfo: $SERVICEOUTPUT$\nDate: $SHORTDATETIME$" | /bin/mail -s
'$NOTIFICATIONTYPE$: $HOSTNAME$/$SERVICEDESC$ is $SERVICESTATE$'
$CONTACTEMAIL$
}
```

From: nagios@nms.localdomain
To: grupo-redes@localdomain
Subject: Host DOWN alert for switch1!
Date: Thu, 29 Jun 2006 15:13:30 -0700

Host: switch1
In: Core_Switches
State: DOWN
Address: 111.222.333.444
Date/Time: 06-29-2006 15:13:30
Info: CRITICAL - Plugin timed out after 6 seconds
Nodes and Services Configuration

• Based on templates
  - This saves lots of time avoiding repetition
  - *Similar to Object Oriented programming*

• Create default templates with default parameters for a:
  - generic node
  - generic service
  - generic contact
Generic Node Configuration

```plaintext
define host{
    name                     generic-host
    notifications_enabled    1
    event_handler_enabled    1
    flap_detection_enabled   1
    process_perf_data        1
    retain_status_information 1
    retain_nonstatus_information 1
    check_command            check-host-alive
    max_check_attempts       5
    notification_interval    60
    notification_period      24x7
    notification_options     d,r
    contact_groups           nobody
    register                 0
}
```
Individual Node Configuration

define host{
    use                generic-host
    host_name          switch1
    alias              Core_switches
    address            192.168.1.2
    parents            router1
    contact_groups     switch_group
}

Generic Service Configuration

```plaintext
define service{
    name                        generic-service
    active_checks_enabled       1
    passive_checks_enabled      1
    parallelize_check           1
    obsess_over_service        1
    check_freshness             0
    notifications_enabled       1
    event_handler_enabled       1
    flap_detection_enabled      1
    process_perf_data           1
    retain_status_information   1
    retain_nonstatus_information 1
    is_volatile                 0
    check_period                24x7
    max_check_attempts          5
    normal_check_interval       5
    retry_check_interval        1
    notification_interval       60
    notification_period         24x7
    notification_options        c,r
    register                    0
}
```
Individual Service Configuration

define service{
    host_name                       switch1
    use                            generic-service
    service_description            PING
    check_command                  check-host-alive
    max_check_attempts             5
    normal_check_interval          5
    notification_options           c,r,f
    contact_groups                 switch-group
}

Automation

- To maintain large configurations by hand becomes tiresome.
  - It's better to simplify and automate using scripts.
    - [http://ns.uoregon.edu/~cvicente/download/nagios-config-scripts](http://ns.uoregon.edu/~cvicente/download/nagios-config-scripts)
    - Or, export device (node) information from tools like Netdot, netdisco, OpenNMS, etc.
Beeper/SMS Messages

• It's important to integrate Nagios with something available outside of work
  − Problems occur after hours... (unfair, but true)

• A critical item to remember: an SMS or message system should be independent from your network.
  − You can utilize a modem and a telephone line
  − Packages like sendpage or qpage can help.
Some References

- [http://www.nagios.org](http://www.nagios.org): Nagios web site
- [http://sourceforge.net/projects/nagiosplug](http://sourceforge.net/projects/nagiosplug): Nagios plugins site
- *Nagios. System and Network Monitoring* by Wolfgang Barth. Good book on Nagios
- [http://www.debianhelp.co.uk/nagios.htm](http://www.debianhelp.co.uk/nagios.htm): A Debian tutorial on Nagios

And, the O'Reilly book you received in class!
Nagios – Vista General (Tactical Overview)
- Pantalla de Status Detail

### Host Status Totals

<table>
<thead>
<tr>
<th>Status</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up</td>
<td>155</td>
</tr>
<tr>
<td>Down</td>
<td>15</td>
</tr>
<tr>
<td>Unreachable</td>
<td>0</td>
</tr>
<tr>
<td>Pending</td>
<td>0</td>
</tr>
</tbody>
</table>

### Service Status Totals

<table>
<thead>
<tr>
<th>Status</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ok</td>
<td>226</td>
</tr>
<tr>
<td>Warning</td>
<td>5</td>
</tr>
<tr>
<td>Unknown</td>
<td>0</td>
</tr>
<tr>
<td>Critical</td>
<td>16</td>
</tr>
<tr>
<td>Pending</td>
<td>0</td>
</tr>
</tbody>
</table>

### All Problems

<table>
<thead>
<tr>
<th>Type</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Problems</td>
<td>15</td>
</tr>
<tr>
<td>All Types</td>
<td>170</td>
</tr>
</tbody>
</table>

### All Problems

<table>
<thead>
<tr>
<th>Type</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Problems</td>
<td>21</td>
</tr>
<tr>
<td>All Types</td>
<td>247</td>
</tr>
</tbody>
</table>

### Host Status Details For All Host Groups

<table>
<thead>
<tr>
<th>Host Name</th>
<th>Status</th>
<th>Last Check</th>
<th>Duration</th>
<th>Status Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHILDREN-FIRST</td>
<td>DOWN</td>
<td>02-01-2004 12:13:59</td>
<td>1d 19h 10m 33s</td>
<td>PING CRITICAL - Packet loss = 100%</td>
</tr>
<tr>
<td>DANIDA</td>
<td>DOWN</td>
<td>02-01-2004 12:15:55</td>
<td>1d 0h 43m 12s</td>
<td>PING CRITICAL - Packet loss = 100%</td>
</tr>
<tr>
<td>DASS</td>
<td>DOWN</td>
<td>02-01-2004 12:08:59</td>
<td>4d 0h 40m 42s</td>
<td>PING CRITICAL - Packet loss = 100%</td>
</tr>
<tr>
<td>FNCCI</td>
<td>DOWN</td>
<td>02-01-2004 12:12:38</td>
<td>4d 0h 40m 2s</td>
<td>PING CRITICAL - Packet loss = 100%</td>
</tr>
<tr>
<td>LT-LINK</td>
<td>DOWN</td>
<td>02-01-2004 12:15:55</td>
<td>0d 1h 37m 12s</td>
<td>PING CRITICAL - Packet loss = 100%</td>
</tr>
<tr>
<td>Laz-cnet</td>
<td>DOWN</td>
<td>02-01-2004 12:12:38</td>
<td>4d 0h 38m 53s</td>
<td>PING CRITICAL - Packet loss = 100%</td>
</tr>
</tbody>
</table>
### Current Network Status
- **Last Updated:** Sun Feb 1 09:57:47 NPT 2004
- Updated every 90 seconds
- Nagios® - [www.nagios.org](http://www.nagios.org)
- Logged in as dhraab

#### Host Status Totals
- **Up:** 155
- **Down:** 15
- **Unreachable:** 0
- **Pending:** 0

#### Service Status Totals
- **Ok:** 228
- **Warning:** 3
- **Unknown:** 0
- **Critical:** 16
- **Pending:** 0

#### Service Status Details For All Hosts

<table>
<thead>
<tr>
<th>Host</th>
<th>Service</th>
<th>Status</th>
<th>Last Check</th>
<th>Duration</th>
<th>Attempt</th>
<th>Status Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTIONAID</td>
<td>Ping</td>
<td>OK</td>
<td>02-01-2004 09:53:07</td>
<td>0d 12h 20m 9s</td>
<td>1/3</td>
<td>PING OK - Packet loss = 0%, RTA = 2 ms</td>
</tr>
<tr>
<td>AFP</td>
<td>Ping</td>
<td>OK</td>
<td>02-01-2004 09:55:38</td>
<td>0d 13h 40m 29s</td>
<td>1/3</td>
<td>PING OK - Packet loss = 0%, RTA = 1 ms</td>
</tr>
<tr>
<td>AGNIPAGE</td>
<td>Ping</td>
<td>OK</td>
<td>02-01-2004 09:55:27</td>
<td>0d 0h 0m 59s</td>
<td>1/3</td>
<td>PING OK - Packet loss = 0%, RTA = 1 ms</td>
</tr>
<tr>
<td>BRTSCHOOL</td>
<td>Ping</td>
<td>OK</td>
<td>02-01-2004 09:54:06</td>
<td>1d 18h 7m 39s</td>
<td>1/3</td>
<td>PING OK - Packet loss = 0%, RTA = 8 ms</td>
</tr>
<tr>
<td>Ban-cat</td>
<td>Ping</td>
<td>OK</td>
<td>02-01-2004 09:56:11</td>
<td>0d 22h 44m 39s</td>
<td>1/3</td>
<td>PING OK - Packet loss = 0%, RTA = 1 ms</td>
</tr>
</tbody>
</table>
### Tipos de Servicios

<table>
<thead>
<tr>
<th>Servicio</th>
<th>Estado</th>
<th>Tiempo</th>
<th>Uso</th>
<th>Detalles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cpu-usage</td>
<td>OK</td>
<td>02-01-2004 10:21:58 3d 22h 48m 34s 1/3</td>
<td></td>
<td>SNMP OK: usr-cpu:1, sys-cpu:1; FTP OK - 0.007 second response time port 21 [220 kailash.mos.com.npFTP server ready. ]</td>
</tr>
<tr>
<td>FTP</td>
<td>OK</td>
<td>02-01-2004 10:23:48 3d 22h 46m 38s 1/3</td>
<td></td>
<td>HTTP ok: HTTP/1.1 200 OK - 0.021 second response time</td>
</tr>
<tr>
<td>Free-Memory</td>
<td>OK</td>
<td>02-01-2004 10:22:15 3d 22h 48m 34s 1/3</td>
<td></td>
<td>SNMP OK: Ram-Free:3100,</td>
</tr>
<tr>
<td>HTTP</td>
<td>OK</td>
<td>02-01-2004 10:22:59 3d 22h 46m 38s 1/3</td>
<td></td>
<td>HTTP ok: HTTP/1.1 200 OK - 0.021 second response time</td>
</tr>
<tr>
<td>Load</td>
<td>OK</td>
<td>02-01-2004 10:25:17 3d 22h 48m 34s 1/3</td>
<td></td>
<td>SNMP OK: 1MIN-Load:0.08, 5MIN-Load:0.05, 15MIN-Load:0.00,</td>
</tr>
<tr>
<td>Ping</td>
<td>OK</td>
<td>02-01-2004 10:25:07 0d 5h 7m 33s 1/3</td>
<td></td>
<td>PING OK - Packet loss = 0%, RTA = 0 ms</td>
</tr>
<tr>
<td>disk_usage</td>
<td>OK</td>
<td>02-01-2004 10:22:51 3d 22h 48m 34s 1/3</td>
<td></td>
<td>Disk utilization: All disks OK</td>
</tr>
<tr>
<td>Karnali Ping</td>
<td>OK</td>
<td>02-01-2004 10:25:58 0d 17h 48m 53s 1/3</td>
<td></td>
<td>PING OK - Packet loss = 0%, RTA = 1 ms</td>
</tr>
<tr>
<td>Cpu-usage</td>
<td>OK</td>
<td>02-01-2004 10:24:07 3d 22h 48m 34s 1/3</td>
<td></td>
<td>SNMP OK: usr-cpu:0, sys-cpu:1,</td>
</tr>
<tr>
<td>Free-Memory</td>
<td>OK</td>
<td>02-01-2004 10:22:51 3d 22h 46m 38s 1/3</td>
<td></td>
<td>SNMP OK: Ram-Free:3808,</td>
</tr>
<tr>
<td>Load</td>
<td>OK</td>
<td>02-01-2004 10:22:18 3d 22h 48m 34s 1/3</td>
<td></td>
<td>SNMP OK: 1MIN-Load:0.18, 5MIN-Load:0.19, 15MIN-Load:0.18,</td>
</tr>
<tr>
<td>POP</td>
<td>OK</td>
<td>02-01-2004 10:23:07 3d 22h 46m 38s 1/3</td>
<td></td>
<td>POP OK - 0.028 second response time port 110 [+OK&lt;<a href="mailto:8832.1075610415@kopila.mos.com.np">8832.1075610415@kopila.mos.com.np</a></td>
</tr>
<tr>
<td>Ping</td>
<td>OK</td>
<td>02-01-2004 10:25:58 0d 15h 7m 15s 1/3</td>
<td></td>
<td>PING OK - Packet loss = 0%, RTA = 0 ms</td>
</tr>
<tr>
<td>Koshi Ping</td>
<td>OK</td>
<td>02-01-2004 10:22:37 1d 13h 37m 43s 1/3</td>
<td></td>
<td>PING OK - Packet loss = 0%, RTA = 5 ms</td>
</tr>
</tbody>
</table>
Muestra de una Mapa de Estatus
Vista General de Estatus (Status Overview)

<table>
<thead>
<tr>
<th>All Routers @Durbar Marg-KTM (Routers@DMG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>Dmg-3640</td>
</tr>
<tr>
<td>Dmg-rt2</td>
</tr>
<tr>
<td>Gw-7206</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>All Routers @Kantipath-KTM (Routers@KP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>Ktp-rtl</td>
</tr>
<tr>
<td>Ktp-rt2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>All Routers @Lazim (Routers@L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>Laz-nxl-link1</td>
</tr>
<tr>
<td>Laz-rtl1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>All Routers @POPw Lease Link (Routers@POPL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>Brw-gw</td>
</tr>
<tr>
<td>Brt-gw</td>
</tr>
<tr>
<td>Brt-link1</td>
</tr>
<tr>
<td>Brt-link2</td>
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<tr>
<td>Htd-lease</td>
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<table>
<thead>
<tr>
<th>All Routers @POPw VSAT Link (Routers@POPV)</th>
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<tbody>
<tr>
<td>Host</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>Brv-2501</td>
</tr>
<tr>
<td>Btl-vsat</td>
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<tr>
<td>Htd-vsat</td>
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<tr>
<td>Nam-gw</td>
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<table>
<thead>
<tr>
<th>All Routers @Pulchowk-KTM (Routers@PUL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>Pul-2610</td>
</tr>
<tr>
<td>Pul-rtl1</td>
</tr>
<tr>
<td>Pul-rtl2</td>
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</table>

<table>
<thead>
<tr>
<th>All Routers @Sundhara (Routers@SDR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>Sdr-rtl1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>All Routers @Xpressway (Routers@X)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>AGNIPAGE</td>
</tr>
<tr>
<td>BRTSCHOOL</td>
</tr>
</tbody>
</table>
## Status Summary For All Host Groups

<table>
<thead>
<tr>
<th>Host Group</th>
<th>Host Status Totals</th>
<th>Service Status Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Access Servers@KTM (AS@KTM)</strong></td>
<td>11 UP</td>
<td>11 OK</td>
</tr>
<tr>
<td><strong>All Brouters @KTM (Brouters@KTM)</strong></td>
<td>7 UP</td>
<td>7 OK</td>
</tr>
<tr>
<td><strong>All Routers @MIX Customers w/ Radio Link (Brouters@MIXR)</strong></td>
<td>1 UP</td>
<td>1 OK</td>
</tr>
<tr>
<td><strong>All Brouters @Xpressway Customers w/ Radio Link (Brouters@XpresswayR)</strong></td>
<td>19 UP, 1 DOWN</td>
<td>19 OK, 1 CRITICAL</td>
</tr>
<tr>
<td><strong>All Brouters @Xpressway Customers w/ Radio Link (Cnet_Clients@XpresswayR)</strong></td>
<td>6 UP, 4 DOWN</td>
<td>5 OK, 5 CRITICAL</td>
</tr>
<tr>
<td><strong>All Cnets @KTM (Cnets@KTM)</strong></td>
<td>2 UP, 1 DOWN</td>
<td>2 OK, 1 CRITICAL</td>
</tr>
<tr>
<td><strong>All Co-located Servers (Co-locators)</strong></td>
<td>2 UP</td>
<td>2 OK</td>
</tr>
<tr>
<td><strong>Ipricots DVB @DMG (DVB@DMG)</strong></td>
<td>1 UP</td>
<td>1 OK</td>
</tr>
<tr>
<td><strong>All Email-alert-only Boxes (E-boxes)</strong></td>
<td>1 UP</td>
<td>1 OK</td>
</tr>
<tr>
<td><strong>All Livingston Portmasters @Kathmandu (Portmasters@KTM)</strong></td>
<td>10 UP</td>
<td>10 OK</td>
</tr>
<tr>
<td><strong>All Livingston Portmasters @MC-Pops (Portmasters@POPs)</strong></td>
<td>1 UP</td>
<td>1 WARNING</td>
</tr>
<tr>
<td><strong>All Routers @Baneshor (Routers@BAN)</strong></td>
<td>1 UP</td>
<td>1 OK</td>
</tr>
<tr>
<td><strong>All Routers @Durbar Marg-KTM (Routers@DMG)</strong></td>
<td>3 UP</td>
<td>3 OK</td>
</tr>
<tr>
<td><strong>All Routers @Kantipath-KTM (Routers@KP)</strong></td>
<td>2 UP</td>
<td>2 OK</td>
</tr>
<tr>
<td><strong>All Routers @Lazimpat (Routers@LAZ)</strong></td>
<td>2 UP</td>
<td>2 OK</td>
</tr>
<tr>
<td><strong>All Routers @POPs w/ Lease Link (Routers@POPsL)</strong></td>
<td>4 UP, 1 DOWN</td>
<td>4 OK, 1 CRITICAL</td>
</tr>
</tbody>
</table>
Historia o Tendencias de Hosts

State History For Host 'Don_Bosco'
Thu Jan 1 00:00:00 2004 to Sun Feb 1 00:00:00 2004

State Breakdowns:

Up : (32.6%) 10d 2h 21m 41s
Down : (67.1%) 20d 19h 17m 27s
Unreachable : (0.3%) 0d 2h 5m 12s
Indeterminate: (0.0%) 0d 0h 15m 40s

Report Produced By:
Nagios®
http://www.nagios.org
Histogram de un Host

Event History For Host ‘Don_Bosco’
Thu Jan 1 00:00:00 2004 to Sun Feb 1 00:00:00 2004

<table>
<thead>
<tr>
<th>EVENT TYPE</th>
<th>MIN</th>
<th>MAX</th>
<th>SUM</th>
<th>AVG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recovery (Up)</td>
<td>0</td>
<td>12</td>
<td>138</td>
<td>4.45</td>
</tr>
<tr>
<td>Down</td>
<td>0</td>
<td>12</td>
<td>128</td>
<td>4.13</td>
</tr>
<tr>
<td>Unreachable</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>0.06</td>
</tr>
</tbody>
</table>

Report Produced By: Nagios
http://www.nagios.org

ns@summer workshop
eugene, oregon
Event Logs

File: /usr/local/nagios/var/nagios.log

February 01, 2004 12:00

[02-01-2004 12:14:28] HOST NOTIFICATION: Amod;WORLDBANK-R;DOWN;host-notify-by-email;PING CRITICAL - Packet loss = 100%
[02-01-2004 12:14:28] HOST NOTIFICATION: DeepakA;WORLDBANK-R;DOWN;host-notify-by-epager;PING CRITICAL - Packet loss = 100%
[02-01-2004 12:14:28] HOST NOTIFICATION: Krishna;WORLDBANK-R;DOWN;host-notify-by-epager;PING CRITICAL - Packet loss = 100%
[02-01-2004 12:14:27] HOST NOTIFICATION: NirajS;WORLDBANK-R;DOWN;host-notify-by-email;PING CRITICAL - Packet loss = 100%
[02-01-2004 12:14:27] HOST NOTIFICATION: Prabhuj;WORLDBANK-R;DOWN;host-notify-by-epager;PING CRITICAL - Packet loss = 100%
[02-01-2004 12:14:27] HOST NOTIFICATION: Ravin;WORLDBANK-R;DOWN;host-notify-by-epager;PING CRITICAL - Packet loss = 100%
[02-01-2004 12:14:27] HOST NOTIFICATION: Upendra;WORLDBANK-R;DOWN;host-notify-by-email;PING CRITICAL - Packet loss = 100%
[02-01-2004 12:12:16] SERVICE ALERT: SDC;Ping;WARNING;HARD:1;PING WARNING - Packet loss = 60%, RTA = 23.73 ms
[02-01-2004 12:12:16] HOST ALERT: SDC;DOWN;HARD:1;PING CRITICAL - Packet loss = 100%
[02-01-2004 12:11:09] SERVICE ALERT: Htd-vsat;Ping;WARNING;HARD:3;PING WARNING - Packet loss = 40%, RTA = 674.22 ms
[02-01-2004 12:10:26] SERVICE ALERT: Htd-lease;Ping;WARNING;HARD:3;PING WARNING - Packet loss = 40%, RTA = 385.85 ms
[02-01-2004 12:08:58] SERVICE FLAPPING ALERT: WORLDBANK-R;Ping;STOPPED; Service appears to have stopped flapping (3.8% change < 5.0% threshold)
[02-01-2004 12:08:49] HOST NOTIFICATION: Gyanu;Htd-lease;UP;host-notify-by-email;PING OK - Packet loss = 30%, RTA = 357.24 ms
[02-01-2004 12:08:48] HOST NOTIFICATION: Ishwar;Htd-lease;UP;host-notify-by-email;PING OK - Packet loss = 30%, RTA = 357.24 ms
[02-01-2004 12:08:48] HOST NOTIFICATION: Kedar;Htd-lease;UP;host-notify-by-epager;PING OK - Packet loss = 30%, RTA = 357.24 ms
[02-01-2004 12:08:48] HOST NOTIFICATION: MSurya;Htd-lease;UP;host-notify-by-email;PING OK - Packet loss = 30%, RTA = 357.24 ms
## Contact Notifications

Last Updated: Sun Feb 1 12:07:59 NPT 2004
Nagios® - [www.nagios.org](http://www.nagios.org)
Logged in as dhnuba

### Log File Navigation

- **Sun Feb 1 00:00:00 NPT 2004 to Present..**

File: /usr/local/nagios/var/nagios.log

<table>
<thead>
<tr>
<th>Host</th>
<th>Service</th>
<th>Type</th>
<th>Time</th>
<th>Contact</th>
<th>Notification Command</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>WORLDBANK-R</td>
<td>N/A</td>
<td>HOST DOWN</td>
<td>02-01-2004 11:13:12</td>
<td>Amod</td>
<td>host-notify-by-email</td>
<td>PING CRITICAL - Packet loss = 100%</td>
</tr>
<tr>
<td>WORLDBANK-R</td>
<td>N/A</td>
<td>HOST DOWN</td>
<td>02-01-2004 11:13:12</td>
<td>Amod</td>
<td>host-notify-by-epager</td>
<td>PING CRITICAL - Packet loss = 100%</td>
</tr>
<tr>
<td>WORLDBANK-R</td>
<td>N/A</td>
<td>HOST DOWN</td>
<td>02-01-2004 11:13:11</td>
<td>DeepakA</td>
<td>host-notify-by-epager</td>
<td>PING CRITICAL - Packet loss = 100%</td>
</tr>
<tr>
<td>WORLDBANK-R</td>
<td>N/A</td>
<td>HOST DOWN</td>
<td>02-01-2004 11:13:11</td>
<td>Krishna</td>
<td>host-notify-by-epager</td>
<td>PING CRITICAL - Packet loss = 100%</td>
</tr>
<tr>
<td>WORLDBANK-R</td>
<td>N/A</td>
<td>HOST DOWN</td>
<td>02-01-2004 11:13:11</td>
<td>NirajS</td>
<td>host-notify-by-epager</td>
<td>PING CRITICAL - Packet loss = 100%</td>
</tr>
<tr>
<td>WORLDBANK-R</td>
<td>N/A</td>
<td>HOST DOWN</td>
<td>02-01-2004 11:13:11</td>
<td>Prabhu</td>
<td>host-notify-by-epager</td>
<td>PING CRITICAL - Packet loss = 100%</td>
</tr>
<tr>
<td>WORLDBANK-R</td>
<td>N/A</td>
<td>HOST DOWN</td>
<td>02-01-2004 11:13:11</td>
<td>Ravin</td>
<td>host-notify-by-epager</td>
<td>PING CRITICAL - Packet loss = 100%</td>
</tr>
<tr>
<td>WORLDBANK-R</td>
<td>N/A</td>
<td>HOST DOWN</td>
<td>02-01-2004 11:13:10</td>
<td>Ravin</td>
<td>host-notify-by-epager</td>
<td>PING CRITICAL - Packet loss = 100%</td>
</tr>
<tr>
<td>WORLDBANK-R</td>
<td>N/A</td>
<td>HOST DOWN</td>
<td>02-01-2004 11:13:08</td>
<td>Upendra</td>
<td>host-notify-by-epager</td>
<td>PING CRITICAL - Packet loss = 100%</td>
</tr>
<tr>
<td>Laz-cnet</td>
<td>N/A</td>
<td>HOST DOWN</td>
<td>02-01-2004 11:07:49</td>
<td>Amod</td>
<td>host-notify-by-email</td>
<td>PING CRITICAL - Packet loss = 100%</td>
</tr>
<tr>
<td>Laz-cnet</td>
<td>N/A</td>
<td>HOST DOWN</td>
<td>02-01-2004 11:07:49</td>
<td>Amod</td>
<td>host-notify-by-epager</td>
<td>PING CRITICAL - Packet loss = 100%</td>
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<tr>
<td>Laz-cnet</td>
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<td>HOST DOWN</td>
<td>02-01-2004 11:07:49</td>
<td>DeepakA</td>
<td>host-notify-by-epager</td>
<td>PING CRITICAL - Packet loss = 100%</td>
</tr>
<tr>
<td>Laz-cnet</td>
<td>N/A</td>
<td>HOST DOWN</td>
<td>02-01-2004 11:07:49</td>
<td>Krishna</td>
<td>host-notify-by-epager</td>
<td>PING CRITICAL - Packet loss = 100%</td>
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<tr>
<td>Laz-cnet</td>
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<td>HOST DOWN</td>
<td>02-01-2004 11:07:49</td>
<td>Prabhu</td>
<td>host-notify-by-epager</td>
<td>PING CRITICAL - Packet loss = 100%</td>
</tr>
<tr>
<td>Laz-cnet</td>
<td>N/A</td>
<td>HOST DOWN</td>
<td>02-01-2004 11:07:48</td>
<td>Ravin</td>
<td>host-notify-by-epager</td>
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</tr>
<tr>
<td>Laz-cnet</td>
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<td>HOST DOWN</td>
<td>02-01-2004 11:07:48</td>
<td>Upendra</td>
<td>host-notify-by-epager</td>
<td>PING CRITICAL - Packet loss = 100%</td>
</tr>
<tr>
<td>Lid-lease</td>
<td>N/A</td>
<td>HOST DOWN</td>
<td>02-01-2004 10:56:06</td>
<td>Gyanu</td>
<td>host-notify-by-epager</td>
<td>PING CRITICAL - Packet loss = 100%</td>
</tr>
<tr>
<td>Lid-lease</td>
<td>N/A</td>
<td>HOST DOWN</td>
<td>02-01-2004 10:56:06</td>
<td>Ishwar</td>
<td>host-notify-by-email</td>
<td>PING CRITICAL - Packet loss = 100%</td>
</tr>
</tbody>
</table>