



# Network Management & Monitoring

# NAGIOS



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# Introduction

## Network Monitoring Tools

- Availability
- Reliability
- Performance

*Nagios actively monitors the **availability** of devices and services*

# Introduction

- Possibly 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.

# Installation

## In Debian/Ubuntu

```
# apt-get install nagios3
```

### Key directories

```
/etc/nagios3
```

```
/etc/nagios3/conf.d
```

```
/etc/nagios-plugins/conf
```

```
/usr/lib/nagios/plugins
```

```
/usr/share/nagios3/htdocs/images/logos
```

Nagios web interface is here:

<http://YourMachine/nagios3/>

# Plugins

Plugins are used to verify services and devices:

- Nagios architecture is simple enough that writing new plugins is fairly easy in the language of your choice.
- There are ***many, many*** plugins available (thousands).
  - ✓ <http://exchange.nagios.org/>
  - ✓ <http://nagiosplugins.org/>



# Features

- Configuration done in text files, based on templates.
- Nagios reads its configuration from a directory. You determine how to divide your configuration files.
- Uses parallel checking and forking for scalability

# Features cont.

- Utilizes topology to determine dependencies.
  - Differentiates between what is *down* vs. what is *unreachable*. Avoids running unnecessary checks and sending redundant alarms
- Allows you to define how to 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.

# Notification Options (Host)

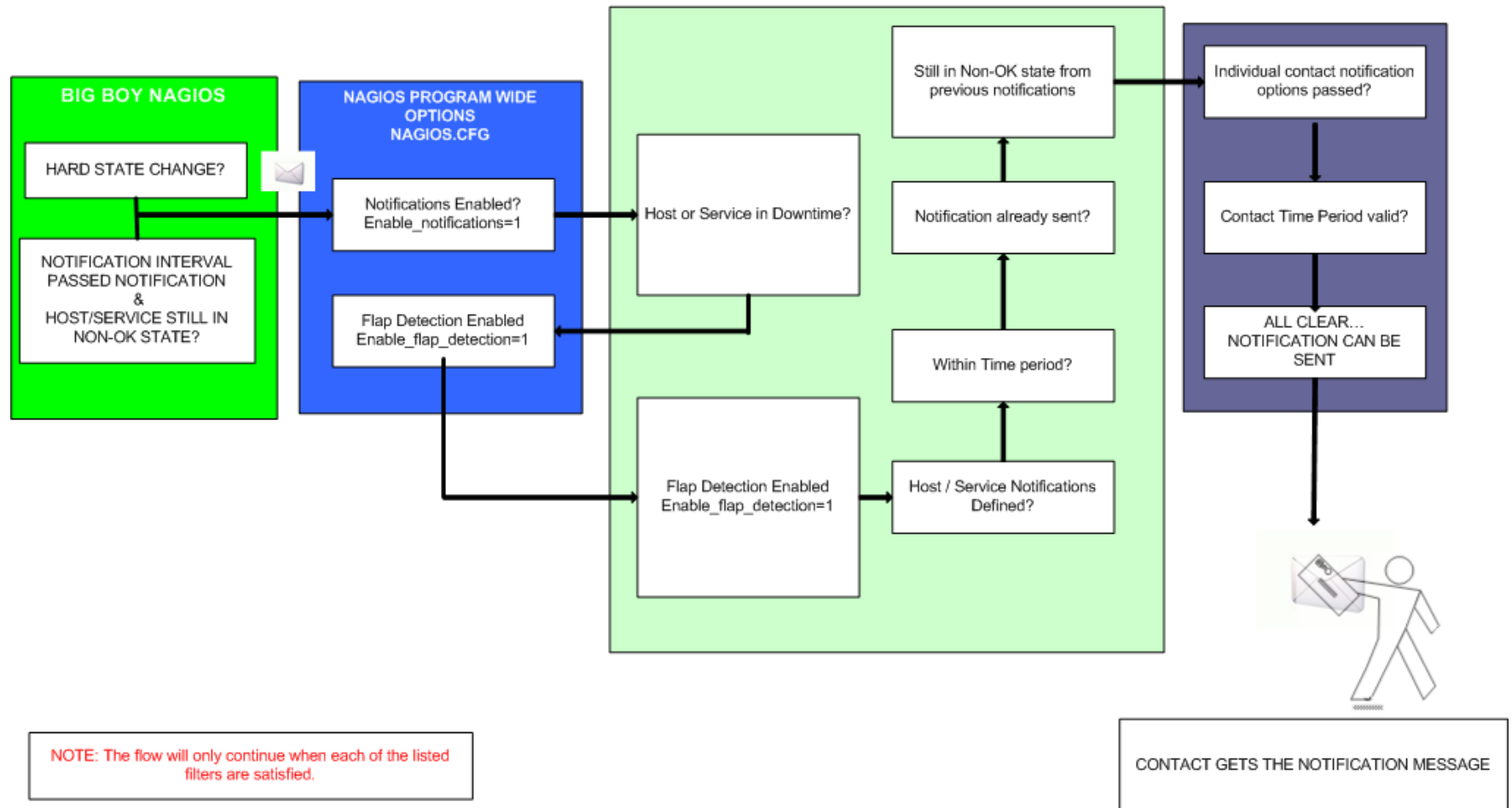
## Host state:

When configuring a host you have the following notification options:

- **d:** DOWN
- **u:** UNREACHABLE
- **r:** RECOVERY
- **f:** FLAPPING
- **n:** NONE



## NAGIOS - NOTIFICATION FLOW DIAGRAM



# 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 continued

## Parameters

- Normal checking interval
- Re-check interval
- Maximum number of checks.
- Period for each check
- Node checks only happen when services respond.
  - A node can be:
    - DOWN
    - UNREACHABLE

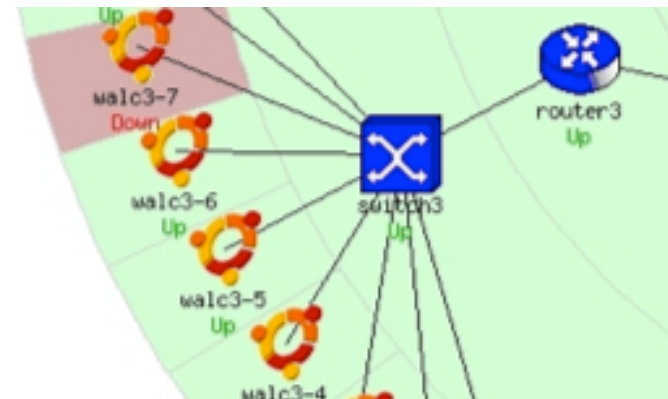
# How checks work continued

- By default Nagios does a node check 3 times before it will change the node's state to down.
- No response states goes to *warning* then *critical*

# The concept of “parents”

## Nodes can have parents:

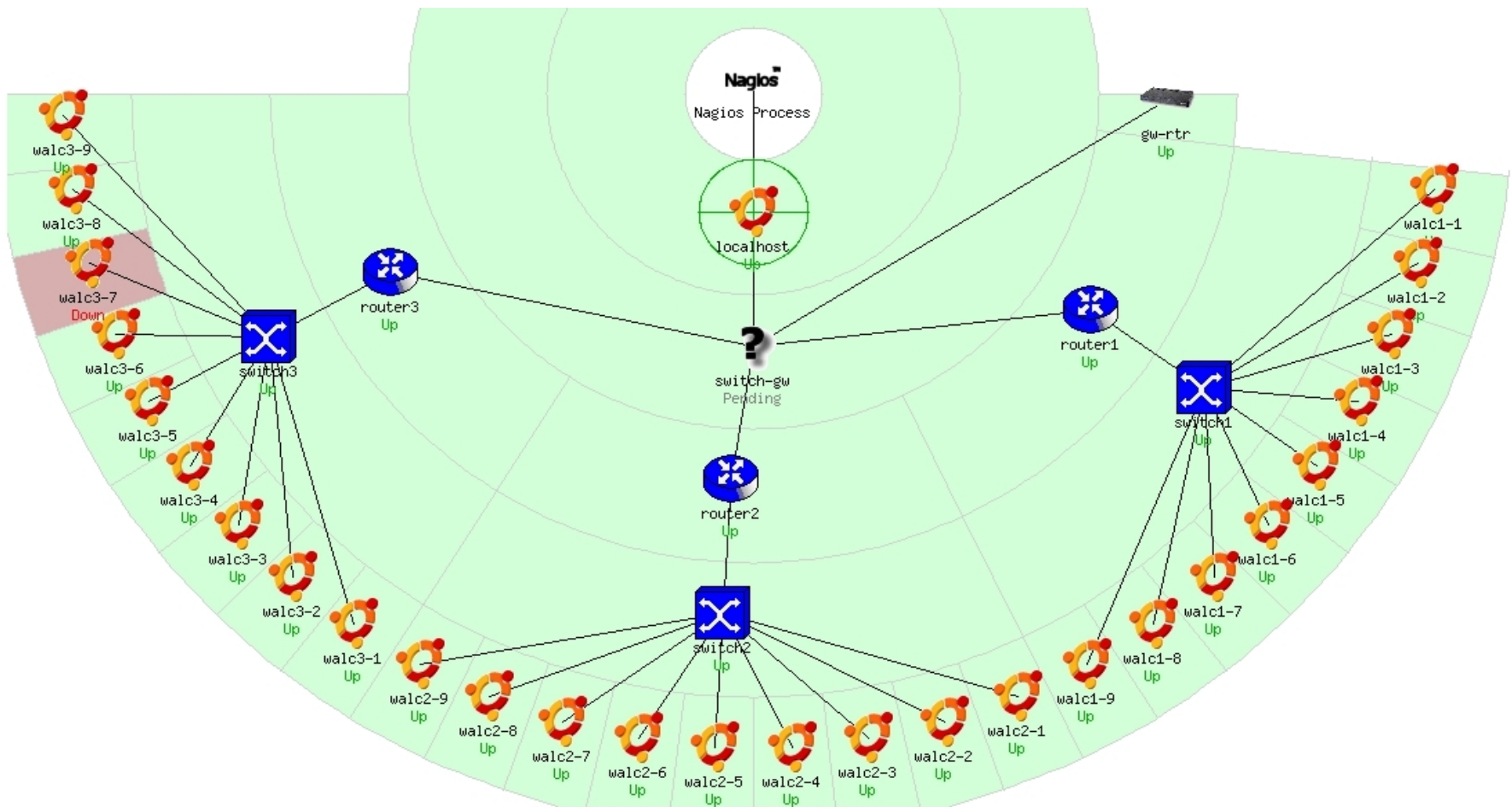
- The parent of a **PC** connected to a **switch** would be the **switch**.
- Allows us to specify the dependencies between devices.
- Avoids sending alarms when parent does not respond.
- A node can have multiple parents (dual homed).



# Network viewpoint

- Where you locate your Nagios server will determine your point of view of the network.
- The Nagios server becomes the “root” of your dependency tree

# Network viewpoint





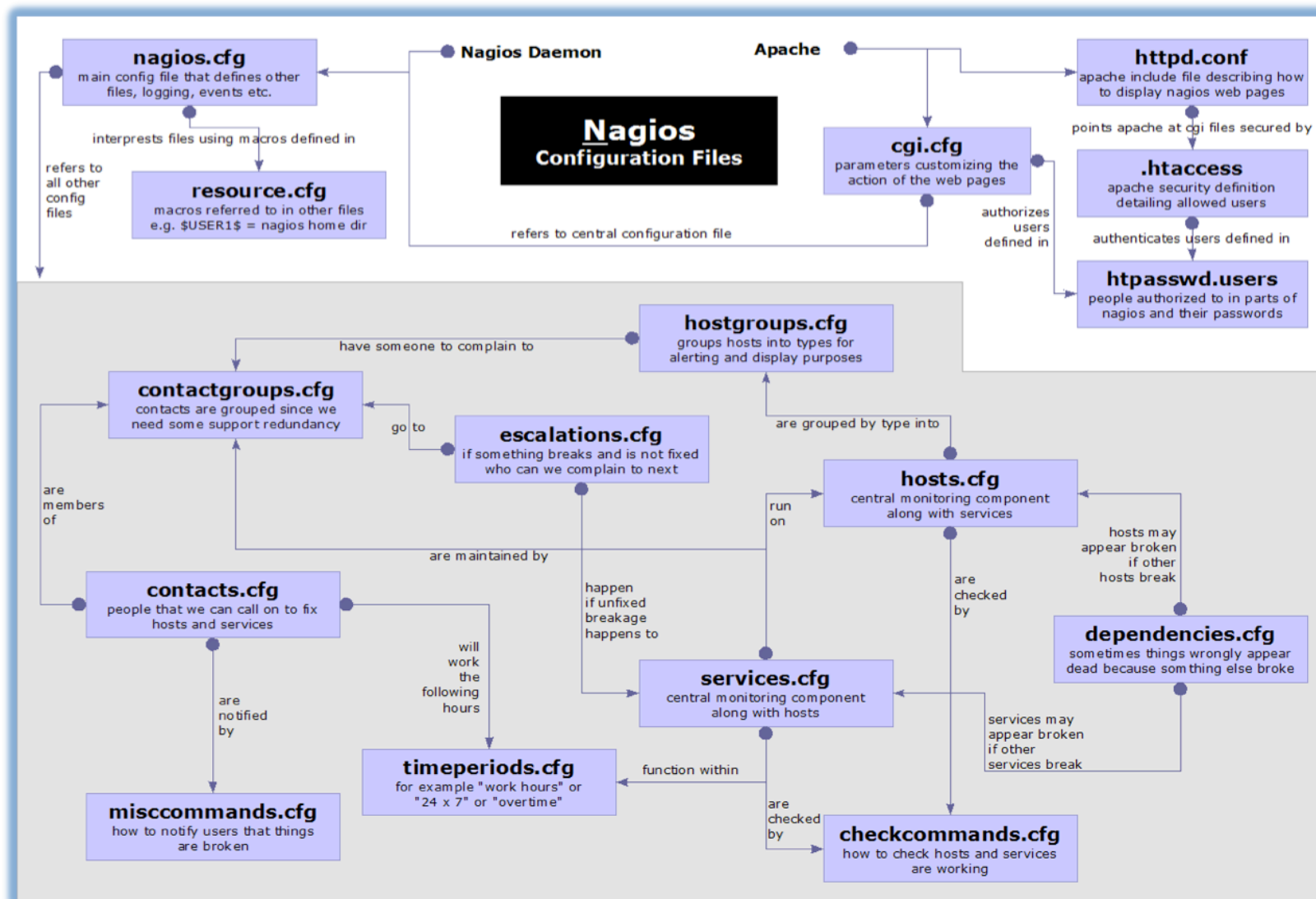
# Demo Nagios



# Configuration Files

- Lots!
- Can seem complex at first
- **Object oriented**
  - Objects (devices or services) inherit attributes.
  - Apply functionality to *groups of devices*.
  - Do not apply functionality to individual objects. Does not scale!
  - Once you understand Nagios configs the rest is easy...

# Configuration files (Official)



# 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 continued

## Under conf.d/\*

- `contacts_nagios2.cfg` users and groups
- `extinfo_nagios2.cfg` make your UI pretty
- `generic-host_nagios2.cfg` default host template
- `generic-service_nagios2.cfg` default service template
- `host-gateway_nagios3.cfg` host at default gw definition
- `hostgroups_nagios2.cfg` groups of nodes
- `localhost_nagios2.cfg` definition of nagios host
- `services_nagios2.cfg` what services to check
- `timeperiods_nagios2.cfg` when to check who to notify

# Configuration files continued

**Under conf.d some other possible config files:**

- `servicegroups.cfg`      Groups of nodes and services
- `pcs.cfg`      Sample definition of PCs (hosts)
- `switches.cfg`      Definitions of switches (hosts)
- `routers.cfg`      Definitions of routers (hosts)

# Pre-installed plugins in Ubuntu

## /usr/lib/nagios/plugins

|                |                    |                   |                |                 |             |
|----------------|--------------------|-------------------|----------------|-----------------|-------------|
| check_apt      | check_file_age     | check_jabber      | check_nttp     | check_procs     | check_swap  |
| check_bgpstate | check_flexlm       | check_ldap        | check_nttps    | check_radius    | check_tcp   |
| check_breeze   | check_ftp          | check_ldaps       | check_nt       | check_real      | check_time  |
| check_by_ssh   | check_host         | check_linux_raid  | check_ntp      | check_rpc       | check_udp   |
| check_cload    | check_hppjd        | check_load        | check_ntp_peer | check_rta_multi | check_ups   |
| check_cluster  | check_http         | check_log         | check_ntp_time | check_sensors   | check_users |
| check_dhcp     | check_icmp         | check_mailq       | check_nwstat   | check_simap     | check_wave  |
| check_dig      | check_ide_smart    | check_mrtg        | check_oracle   | check_smtp      | negate      |
| check_disk     | check_ifoperstatus | check_mrtgtraf    | check_overcr   | check_snmp      | urlize      |
| check_disk_smb | check_ifstatus     | check_mysql       | check_pgsql    | check_spop      | utils.pm    |
| check_dns      | check_imap         | check_mysql_query | check_ping     | check_ssh       | utils.sh    |
| check_dummy    | check_ircd         | check_nagios      | check_pop      | check_ssmtp     |             |

## /etc/nagios-plugins/config

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

# 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 template

```
define host{
    name                generic-host    ; The name of this host template
    notifications_enabled 1             ; Host notifications are enabled
    event_handler_enabled 1             ; Host event handler is enabled
    flap_detection_enabled 1            ; Flap detection is enabled
    failure_prediction_enabled 1        ; Failure prediction is enabled
    process_perf_data     1             ; Process performance data
    retain_status_information 1         ; Retain status information across program restarts
    retain_nonstatus_information 1      ; Retain non-status information across program restarts
    check_command          check-host-alive
    max_check_attempts     10
    notification_interval   0
    notification_period     24x7
    notification_options    d,u,r
    contact_groups          admins
    register                0           ; DONT REGISTER THIS DEFINITION - ITS NOT A REAL HOST, JUST A TEMPLATE!
}
```



# Individual node configuration

```
define host{  
    use                generic-host  
    host_name          gw-rtr  
    alias              Main workshop router  
    address            192.0.2.1  
    contact_groups     router_group  
}
```

# Generic service configuration

```
define service{
    name                                generic-service
    active_checks_enabled                1
    passive_checks_enabled               1
    parallelize_check                    1
    obsess_over_service                  0
    check_freshness                      1
    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

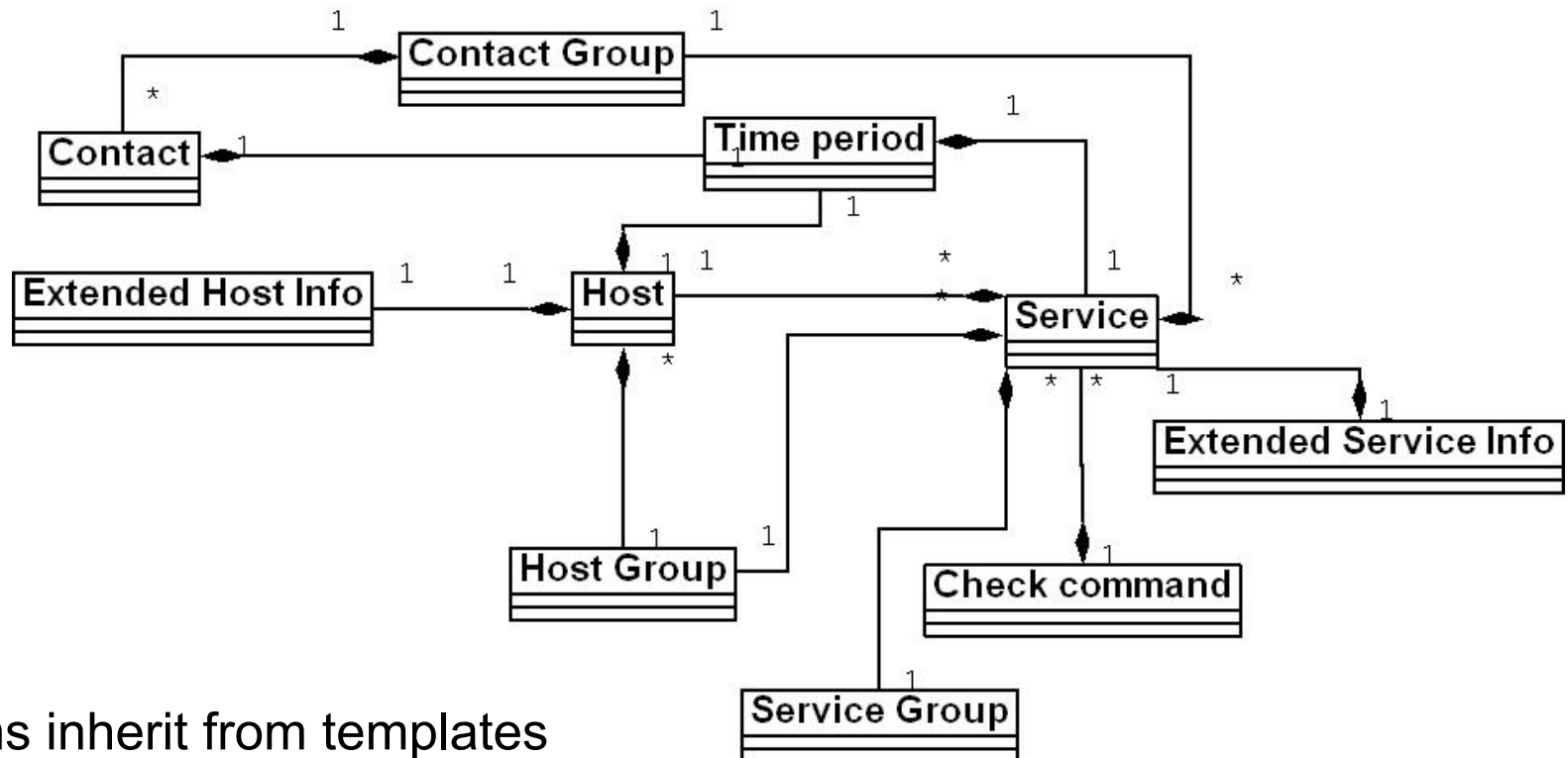
```
define service{
    hostgroup_name      servers
    service_description  PING
    check_command        check-host-alive
    use                 generic-service
    max_check_attempts  5
    normal_check_interval 5
    notification_options c,r,f
    notification_interval 0 ; set > 0 if you want to be renotified
}
```

**c:** Critical

**r:** Recovering

**f:** Flapping

# Configuration Flow



Items inherit from templates

We start with a host

- Place multiple hosts in a group
- Define parents
- Add a service check to the group
- Add extended info, if any

# OoB Notifications

A critical item to remember: an SMS or message system that is independent from your network.

- You can utilize a cell phone connected to the Nagios server
- You can use packages like:

**gnokii:** <http://www.gnokii.org/>

**qpage:** <http://www.qpage.org/>

**sendpage:** <http://www.sendpage.org/>

# References

- **Nagios web site**  
<http://www.nagios.org/>
- **Nagios plugins site**  
<http://www.nagiosplugins.org/>
- *Nagios System and Network Monitoring*, by Wolfgang Barth. Good book about Nagios.
- **Unofficial Nagios plugin site**  
<http://nagios.exchange.org/>
- **A Debian tutorial on Nagios**  
<http://www.debianhelp.co.uk/nagios.htm>
- **Commercial Nagios support**  
<http://www.nagios.com/>



# Questions?

?

# Additional Details

A few additional slides you may find useful or informative...



# 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:
  - e-mail, pager, SMS, winpopup, audio, etc...
- Allows you to define notification levels for escalation

# Main configuration details

## Global settings

**File:** `/etc/nagios3/nagios.cfg`

- Says where other configuration files are.
- General Nagios behavior:
  - For large installations you should tune the installation via this file.
  - See: *Tunning Nagios for Maximum Performance*  
[http://nagios.sourceforge.net/docs/2\\_0/tuning.html](http://nagios.sourceforge.net/docs/2_0/tuning.html)

# CGI configuration

## `/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.

```
# '24x7'
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:

## Definition of “host alive”

```
# '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
- While these are “service” or “host” checks Nagios refers to them as “commands”

# Notification commands

Allows you to utilize any command you wish.  
We could use this to generate tickets in RT.

```
# '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: router_group@localdomain
Subject: Host DOWN alert for TLD1-RTR!
Date: Thu, 29 Jun 2006 15:13:30 -0700
```

```
Host: gw-rtr
In: Core_Routers
State: DOWN
Address: 192.0.2.100
Date/Time: 06-29-2006 15:13:30
Info: CRITICAL - Plugin timed out after 6 seconds
```

# Group service configuration

```
# check that ssh services are running
define service {
    hostgroup_name      ssh-servers
    service_description SSH
    check_command        check_ssh
    use                  generic-service
    notification_interval 0 ; set > 0 if you want to be renotified
}
```

The “service\_description” is important if you plan to create Service Groups. Here is a sample Service Group definition:

```
define servicegroup{
    servicegroup_name    Webmail
    alias                 web-mta-storage-auth
    members               srvr1,HTTP,srvr1,SMTP,srvr1,POP,srvr1,IMAP,
                        srvr1,RAID,srvr1,LDAP, srvr2,HTTP,srvr2,SMTP,
                        srvr2,POP,srvr2,IMAP,srvr2,RAID,srvr2,LDAP
}
```

# Screen Shots

A few sample screen shots from a Nagios install.



# General View

## Nagios®

General

Home

Documentation

Monitoring

Tactical Overview

Service Detail

Host Detail

Hostgroup Overview

Hostgroup Summary

Hostgroup Grid

Servicegroup Overview

Servicegroup Summary

Servicegroup Grid

Status Map

3-D Status Map

Service Problems

Unhandled

Host Problems

Unhandled

Network Outages

Show Host:

Comments

Downtime

Process Info

Performance Info

Scheduling Queue

Reporting

Trends

Availability

Alert Histogram

Alert History

Alert Summary

Notifications

Event Log

Configuration

View Config

Tactical Monitoring Overview

Last Updated: Thu Sep 3 15:37:09 CDT 2009

Updated every 90 seconds

Nagios® 3.0.2 - [www.nagios.org](http://www.nagios.org)

Logged in as guest

Monitoring Performance

Service Check Execution Time: 0.01 / 4.07 / 0.115 sec

Service Check Latency: 0.02 / 0.25 / 0.117 sec

Host Check Execution Time: 0.01 / 0.13 / 0.018 sec

Host Check Latency: 0.01 / 0.28 / 0.137 sec

# Active Host / Service Checks: 41 / 46

# Passive Host / Service Checks: 0 / 0

Network Outages

0 Outages

Network Health

Host Health:

Service Health:

Hosts

0 Down0 Unreachable41 Up0 Pending

Services

0 Critical0 Warning0 Unknown46 Ok0 Pending

Monitoring Features

| Flap Detection  | Notifications  | Event Handlers                                       | Active Checks  | Passive Checks                                       |
|---|--|--|--|--|
| Enabled<br>All Services Enabled<br>No Services Flapping<br>All Hosts Enabled<br>No Hosts Flapping | Enabled<br>All Services Enabled<br>All Hosts Enabled | Enabled<br>All Services Enabled<br>All Hosts Enabled | Enabled<br>All Services Enabled<br>All Hosts Enabled | Enabled<br>All Services Enabled<br>All Hosts Enabled |

# Service Detail

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- Servicegroup Overview
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- Servicegroup Grid
- Status Map
- 3-D Status Map

**Service Problems**

- Unhandled
- Host Problems
  - Unhandled
- Network Outages

Show Host:

**Comments**

- Downtime

**Process Info**

- Performance Info
- Scheduling Queue

**Reporting**

- Trends
- Availability
- Alert Histogram
- Alert History
- Alert Summary
- Notifications
- Event Log

**Configuration**

- View Config

**Current Network Status**

Last Updated: Thu Sep 3 14:46:07 CDT 2009  
Updated every 90 seconds  
Nagios® 3.0.2 - [www.nagios.org](http://www.nagios.org)  
Logged in as guest

[View History For all hosts](#)  
[View Notifications For All Hosts](#)  
[View Host Status Detail For All Hosts](#)

**Host Status Totals**

| Up | Down | Unreachable | Pending |
|----|------|-------------|---------|
| 41 | 0    | 0           | 0       |

| All Problems | All Types |
|--------------|-----------|
| 0            | 41        |

**Service Status Totals**

| Ok | Warning | Unknown | Critical | Pending |
|----|---------|---------|----------|---------|
| 46 | 0       | 0       | 0        | 0       |

| All Problems | All Types |
|--------------|-----------|
| 0            | 46        |

**Service Status Details For All Hosts**

| Host     | Service | Status | Last Check          | Duration       | Attempt | Status Information                                    |
|----------|---------|--------|---------------------|----------------|---------|---|
| DNS-ROOT | SSH     | OK     | 2009-09-03 14:43:51 | 43d 0h 55m 19s | 1/4     | SSH OK - OpenSSH_5.1p1 Debian-3ubuntu1 (protocol 2.0) |
| ISP-DNS  | SSH     | OK     | 2009-09-03 14:41:21 | 16d 3h 57m 24s | 1/4     | SSH OK - OpenSSH_5.1p1 Debian-3ubuntu1 (protocol 2.0) |
| ISP-RTR  | SSH     | OK     | 2009-09-03 14:43:57 | 43d 5h 35m 13s | 1/4     | SSH OK - Cisco-1.25 (protocol 2.0)                    |
| NOC-TLD1 | SSH     | OK     | 2009-09-03 14:41:27 | 1d 0h 1m 59s   | 1/4     | SSH OK - OpenSSH_5.1p1 Debian-3ubuntu1 (protocol 2.0) |
| NOC-TLD2 | SSH     | OK     | 2009-09-03 14:44:04 | 1d 22h 44m 22s | 1/4     | SSH OK - OpenSSH_5.1p1 Debian-3ubuntu1 (protocol 2.0) |
| NOC-TLD3 | SSH     | OK     | 2009-09-03 14:41:34 | 1d 22h 40m 58s | 1/4     | SSH OK - OpenSSH_5.1p1 Debian-3ubuntu1 (protocol 2.0) |
| NOC-TLD4 | SSH     | OK     | 2009-09-03 14:44:10 | 1d 22h 44m 16s | 1/4     | SSH OK - OpenSSH_5.1p1 Debian-3ubuntu1 (protocol 2.0) |
| NOC-TLD5 | SSH     | OK     | 2009-09-03 14:41:40 | 1d 22h 41m 46s | 1/4     | SSH OK - OpenSSH_5.1p1 Debian-3ubuntu1 (protocol 2.0) |
| NOC-TLD6 | SSH     | OK     | 2009-09-03 14:44:17 | 1d 22h 44m 9s  | 1/4     | SSH OK - OpenSSH_5.1p1 Debian-3ubuntu1 (protocol 2.0) |
| NOC-TLD7 | SSH     | OK     | 2009-09-03 14:41:47 | 1d 22h 41m 39s | 1/4     | SSH OK - OpenSSH_5.1p1 Debian-3ubuntu1 (protocol 2.0) |
| NOC-TLD8 | SSH     | OK     | 2009-09-03 14:44:23 | 1d 22h 44m 3s  | 1/4     | SSH OK - OpenSSH_5.1p1 Debian-3ubuntu1 (protocol 2.0) |
| NS1-TLD1 | SSH     | OK     | 2009-09-03 14:41:53 | 1d 0h 1m 33s   | 1/4     | SSH OK - OpenSSH_5.1p1 Debian-3ubuntu1 (protocol 2.0) |
| NS1-TLD2 | SSH     | OK     | 2009-09-03 14:44:30 | 1d 22h 43m 56s | 1/4     | SSH OK - OpenSSH_5.1p1 Debian-3ubuntu1 (protocol 2.0) |
| NS1-TLD3 | SSH     | OK     | 2009-09-03 14:42:00 | 1d 22h 41m 26s | 1/4     | SSH OK - OpenSSH_5.1p1 Debian-3ubuntu1 (protocol 2.0) |
| NS1-TLD4 | SSH     | OK     | 2009-09-03 14:44:36 | 1d 22h 43m 50s | 1/4     | SSH OK - OpenSSH_5.1p1 Debian-3ubuntu1 (protocol 2.0) |
| NS1-TLD5 | SSH     | OK     | 2009-09-03 14:42:06 | 1d 22h 41m 20s | 1/4     | SSH OK - OpenSSH_5.1p1 Debian-3ubuntu1 (protocol 2.0) |
| NS1-TLD6 | SSH     | OK     | 2009-09-03 14:44:42 | 1d 22h 43m 42s | 1/4     | SSH OK - OpenSSH_5.1p1 Debian-3ubuntu1 (protocol 2.0) |

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- 3-D Status Map

- Service Problems
  - Unhandled
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- Comments
- Downtime
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- Performance Info
- Scheduling Queue

Reporting

- Trends
- Availability
- Alert Histogram
- Alert History
- Alert Summary
- Notifications
- Event Log

Configuration

- View Config

Current Network Status

Last Updated: Thu Sep 3 14:55:18 CDT 2009  
Updated every 90 seconds  
Nagios® 3.0.2 - [www.nagios.org](http://www.nagios.org)  
Logged in as guest

[View Service Status Detail For All Host Groups](#)  
[View Status Overview For All Host Groups](#)  
[View Status Summary For All Host Groups](#)  
[View Status Grid For All Host Groups](#)

Host Status Totals

| Up           | Down      | Unreachable | Pending |
|--------------|-----------|-------------|---------|
| 41           | 0         | 0           | 0       |
| All Problems | All Types |             |         |
| 0            | 41        |             |         |

Service Status Totals

| Ok           | Warning   | Unknown | Critical | Pending |
|--------------|-----------|---------|----------|---------|
| 46           | 0         | 0       | 0        | 0       |
| All Problems | All Types |         |          |         |
| 0            | 46        |         |          |         |

Host Status Details For All Host Groups

| Host ↑↓  | Status ↑↓ | Last Check ↑↓       | Duration ↑↓    | Status Information                         |
|----------|-----------|---------------------|----------------|--|
| DNS-ROOT | UP        | 2009-09-03 14:51:41 | 43d 1h 7m 0s   | PING OK - Packet loss = 0%, RTA = 0.33 ms  |
| ISP-DNS  | UP        | 2009-09-03 14:51:41 | 16d 4h 11m 25s | PING OK - Packet loss = 0%, RTA = 0.29 ms  |
| ISP-RTR  | UP        | 2009-09-03 14:51:51 | 43d 5h 47m 40s | PING OK - Packet loss = 0%, RTA = 1.24 ms  |
| NOC-TLD1 | UP        | 2009-09-03 14:52:01 | 1d 0h 10m 56s  | PING OK - Packet loss = 0%, RTA = 4.02 ms  |
| NOC-TLD2 | UP        | 2009-09-03 14:52:01 | 1d 22h 53m 46s | PING OK - Packet loss = 0%, RTA = 2.23 ms  |
| NOC-TLD3 | UP        | 2009-09-03 14:52:11 | 1d 22h 53m 36s | PING OK - Packet loss = 0%, RTA = 2.62 ms  |
| NOC-TLD4 | UP        | 2009-09-03 14:52:21 | 1d 22h 53m 36s | PING OK - Packet loss = 0%, RTA = 1.09 ms  |
| NOC-TLD5 | UP        | 2009-09-03 14:52:31 | 1d 22h 54m 6s  | PING OK - Packet loss = 0%, RTA = 5.20 ms  |
| NOC-TLD6 | UP        | 2009-09-03 14:52:31 | 1d 22h 53m 56s | PING OK - Packet loss = 0%, RTA = 10.49 ms |
| NOC-TLD7 | UP        | 2009-09-03 14:52:41 | 1d 22h 53m 56s | PING OK - Packet loss = 0%, RTA = 1.05 ms  |
| NOC-TLD8 | UP        | 2009-09-03 14:52:51 | 1d 22h 53m 56s | PING OK - Packet loss = 0%, RTA = 1.00 ms  |
| NS1-TLD1 | UP        | 2009-09-03 14:53:01 | 1d 0h 10m 26s  | PING OK - Packet loss = 0%, RTA = 10.19 ms |
| NS1-TLD2 | UP        | 2009-09-03 14:53:01 | 1d 22h 53m 56s | PING OK - Packet loss = 0%, RTA = 5.06 ms  |
| NS1-TLD3 | UP        | 2009-09-03 14:53:11 | 1d 22h 53m 36s | PING OK - Packet loss = 0%, RTA = 1.03 ms  |
| NS1-TLD4 | UP        | 2009-09-03 14:53:21 | 1d 22h 53m 36s | PING OK - Packet loss = 0%, RTA = 1.15 ms  |
| NS1-TLD5 | UP        | 2009-09-03 14:53:21 | 1d 22h 54m 6s  | PING OK - Packet loss = 0%, RTA = 1.12 ms  |
| NS1-TLD6 | UP        | 2009-09-03 14:53:31 | 1d 22h 53m 36s | PING OK - Packet loss = 0%, RTA = 1.06 ms  |
| NS1-TLD7 | UP        | 2009-09-03 14:53:41 | 1d 22h 53m 46s | PING OK - Packet loss = 0%, RTA = 1.11 ms  |
| NS1-TLD8 | UP        | 2009-09-03 14:53:51 | 1d 22h 53m 36s | PING OK - Packet loss = 0%, RTA = 1.18 ms  |
| TLD1-RTR | UP        | 2009-09-03 14:53:51 | 1d 22h 54m 6s  | PING OK - Packet loss = 0%, RTA = 2.22 ms  |
| TLD2-RTR | UP        | 2009-09-03 14:54:01 | 1d 22h 53m 46s | PING OK - Packet loss = 0%, RTA = 2.38 ms  |



# Host Groups Overview

**Nagios®**

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- Host Detail
- Hostgroup Overview
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- Servicegroup Overview
- Servicegroup Summary
- Servicegroup Grid
- Status Map
- 3-D Status Map

- Service Problems
  - Unhandled
- Host Problems
  - Unhandled
- Network Outages

Show Host:

- Comments
- Downtime
- Process Info
- Performance Info
- Scheduling Queue

## Reporting

- Trends
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## Configuration

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### Current Network Status

Last Updated: Thu Sep 3 14:55:28 CDT 2009  
Updated every 90 seconds  
Nagios® 3.0.2 - [www.nagios.org](http://www.nagios.org)  
Logged in as guest

[View Service Status Detail For All Host Groups](#)  
[View Host Status Detail For All Host Groups](#)  
[View Status Summary For All Host Groups](#)  
[View Status Grid For All Host Groups](#)

### Host Status Totals













| Up           | Down | Unreachable | Pending |
|--------------|------|-------------|---------|
| 41           | 0    | 0           | 0       |
| All Problems |      | All Types   |         |
| 0            |      | 41          |         |

### Service Status Totals

| Ok           | Warning | Unknown   | Critical | Pending |
|--------------|---------|-----------|----------|---------|
| 46           | 0       | 0         | 0        | 0       |
| All Problems |         | All Types |          |         |
| 0            |         | 46        |          |         |

## Service Overview For All Host Groups













### TRTI TLD1 Servers, Virtual Machines, Routers (TLD1)

| Host                      | Status | Services | Actions   |
|---------------------------|--------|----------|---|
| <a href="#">NOC-TLD1</a>  | UP     | 1 OK     |    |
| <a href="#">NS1-TLD1</a>  | UP     | 1 OK     |    |
| <a href="#">TLD1-RTR</a>  | UP     | 1 OK     |    |
| <a href="#">TRTI-TLD1</a> | UP     | 1 OK     |    |












### TRTI TLD2 Servers, Virtual Machines, Routers (TLD2)

| Host                      | Status | Services | Actions   |
|---------------------------|--------|----------|---|
| <a href="#">NOC-TLD2</a>  | UP     | 1 OK     |    |
| <a href="#">NS1-TLD2</a>  | UP     | 1 OK     |    |
| <a href="#">TLD2-RTR</a>  | UP     | 1 OK     |    |
| <a href="#">TRTI-TLD2</a> | UP     | 1 OK     |    |







### TRTI TLD3 Servers, Virtual Machines, Routers (TLD3)

| Host                      | Status | Services | Actions   |
|---------------------------|--------|----------|---|
| <a href="#">NOC-TLD3</a>  | UP     | 1 OK     |    |
| <a href="#">NS1-TLD3</a>  | UP     | 1 OK     |    |
| <a href="#">TLD3-RTR</a>  | UP     | 1 OK     |    |
| <a href="#">TRTI-TLD3</a> | UP     | 1 OK     |    |













### TRTI TLD4 Servers, Virtual Machines, Routers (TLD4)

| Host                      | Status | Services | Actions   |
|---------------------------|--------|----------|---|
| <a href="#">NOC-TLD4</a>  | UP     | 1 OK     |    |
| <a href="#">NS1-TLD4</a>  | UP     | 1 OK     |    |
| <a href="#">TLD4-RTR</a>  | UP     | 1 OK     |    |
| <a href="#">TRTI-TLD4</a> | UP     | 1 OK     |    |







### TRTI TLD5 Servers, Virtual Machines, Routers (TLD5)

| Host                      | Status | Services | Actions   |
|---------------------------|--------|----------|---|
| <a href="#">NOC-TLD5</a>  | UP     | 1 OK     |    |
| <a href="#">NS1-TLD5</a>  | UP     | 1 OK     |    |
| <a href="#">TLD5-RTR</a>  | UP     | 1 OK     |    |
| <a href="#">TRTI-TLD5</a> | UP     | 1 OK     |    |




### TRTI TLD6 Servers, Virtual Machines, Routers (TLD6)

| Host                      | Status | Services | Actions   |
|---------------------------|--------|----------|---|
| <a href="#">NOC-TLD6</a>  | UP     | 1 OK     |    |
| <a href="#">NS1-TLD6</a>  | UP     | 1 OK     |    |
| <a href="#">TLD6-RTR</a>  | UP     | 1 OK     |    |
| <a href="#">TRTI-TLD6</a> | UP     | 1 OK     |    |






### TRTI TLD7 Servers, Virtual Machines, Routers (TLD7)

| Host                     | Status | Services | Actions   |
|--------------------------|--------|----------|---|
| <a href="#">NOC-TLD7</a> | UP     | 1 OK     |    |
| <a href="#">NS1-TLD7</a> | UP     | 1 OK     |    |

### TRTI TLD8 Servers, Virtual Machines, Routers (TLD8)

| Host                     | Status | Services | Actions   |
|--------------------------|--------|----------|---|
| <a href="#">NOC-TLD8</a> | UP     | 1 OK     |    |
| <a href="#">NS1-TLD8</a> | UP     | 1 OK     |    |

### TRTI Management Virtual Machines (VM-mgmt)

| Host                     | Status | Services | Actions   |
|--------------------------|--------|----------|---|
| <a href="#">DNS-ROOT</a> | UP     | 1 OK     |    |
| <a href="#">ISP-DNS</a>  | UP     | 1 OK     |    |

# Service Groups Overview

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- View Config

**Current Network Status**

Last Updated: Fri Sep 4 13:29:20 CDT 2009  
Updated every 90 seconds  
Nagios® 3.0.2 - [www.nagios.org](http://www.nagios.org)  
Logged in as guest

[View Service Status Detail For All Service Groups](#)  
[View Status Summary For All Service Groups](#)  
[View Service Status Grid For All Service Groups](#)

**Host Status Totals**

| Up           | Down      | Unreachable | Pending |
|--------------|-----------|-------------|---------|
| 41           | 0         | 0           | 0       |
| All Problems | All Types |             |         |
| 0            | 41        |             |         |

**Service Status Totals**

| Ok           | Warning   | Unknown | Critical | Pending |
|--------------|-----------|---------|----------|---------|
| 53           | 0         | 0       | 1        | 0       |
| All Problems | All Types |         |          |         |
| 1            | 54        |         |          |         |

**Service Overview For All Service Groups**

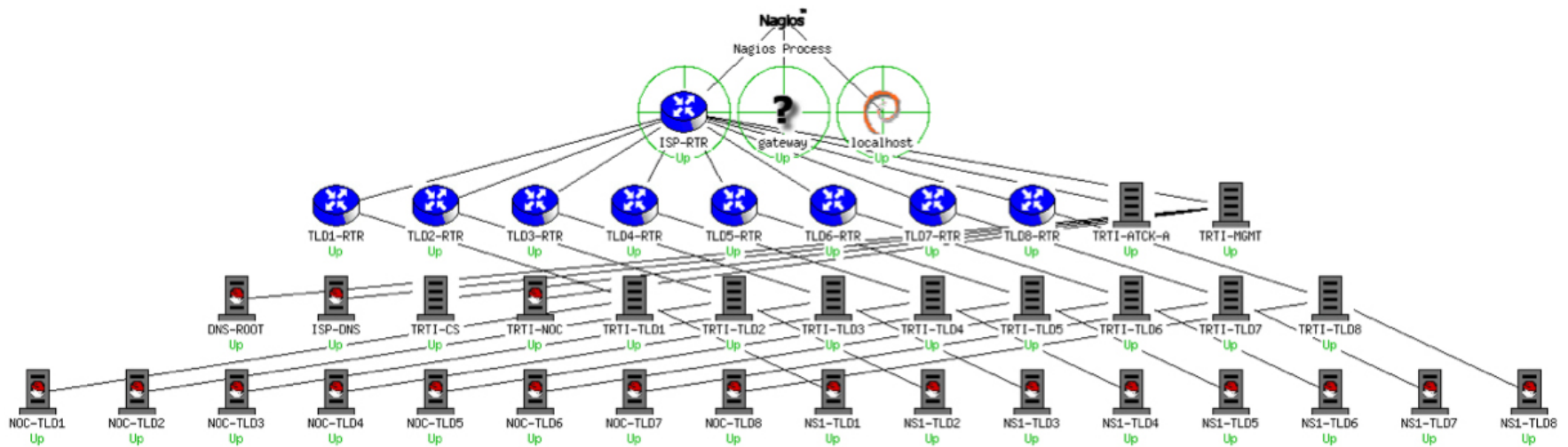
**TLD Servers running Nagios (NAGIOS)**

| Host                     | Status | Services | Actions |
|--------------------------|--------|----------|---------|
| <a href="#">NS1-TLD1</a> | UP     | 1 OK     |         |
| <a href="#">NS1-TLD2</a> | UP     | 1 OK     |         |
| <a href="#">NS1-TLD3</a> | UP     | 1 OK     |         |
| <a href="#">NS1-TLD4</a> | UP     | 1 OK     |         |
| <a href="#">NS1-TLD5</a> | UP     | 1 OK     |         |
| <a href="#">NS1-TLD6</a> | UP     | 1 OK     |         |
| <a href="#">NS1-TLD7</a> | UP     | 1 OK     |         |
| <a href="#">NS1-TLD8</a> | UP     | 1 OK     |         |

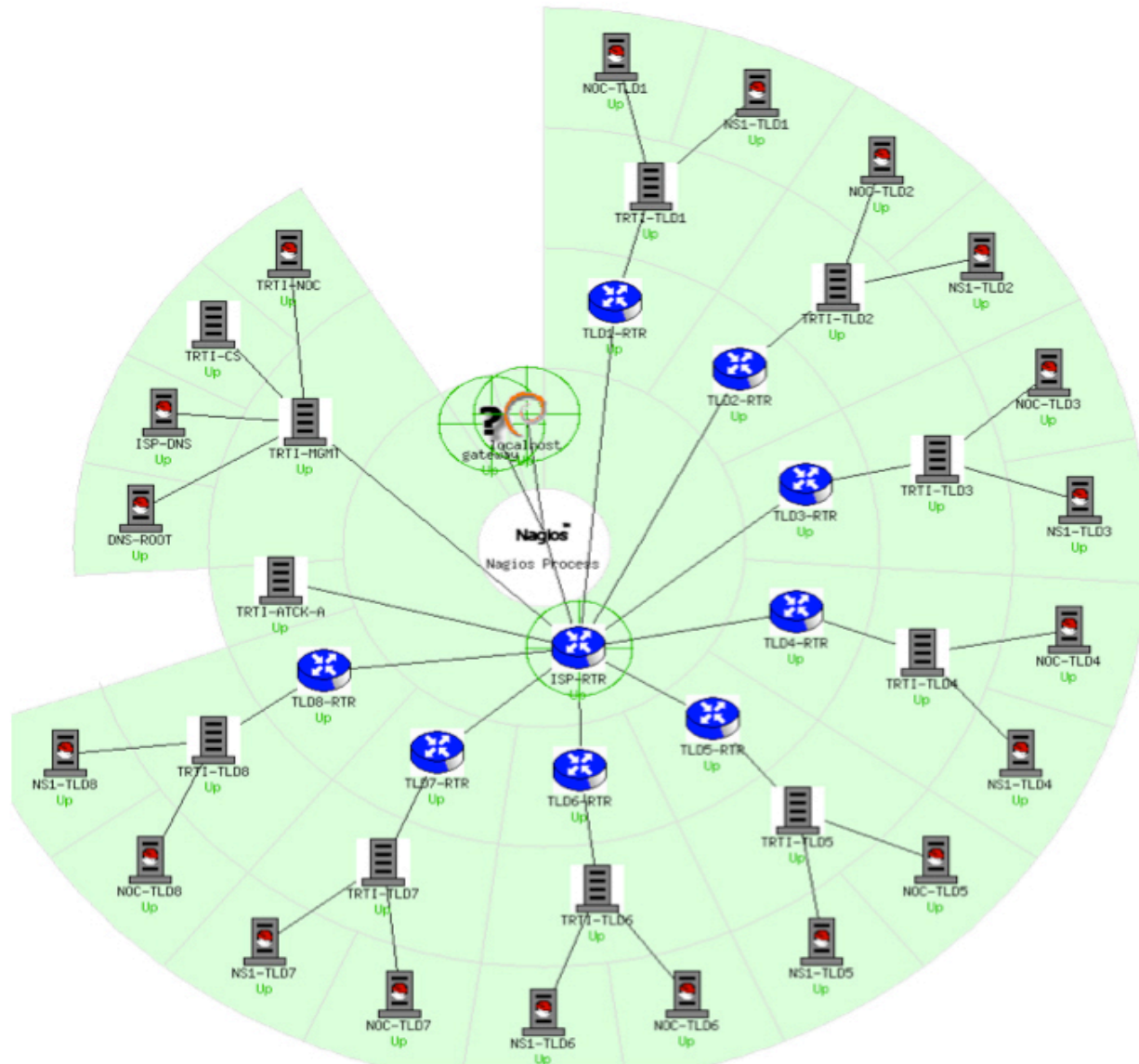
**TLD Servers running SSH (SSH)**

| Host                     | Status | Services   | Actions |
|--------------------------|--------|------------|---------|
| <a href="#">NS1-TLD1</a> | UP     | 1 OK       |         |
| <a href="#">NS1-TLD2</a> | UP     | 1 CRITICAL |         |
| <a href="#">NS1-TLD3</a> | UP     | 1 OK       |         |
| <a href="#">NS1-TLD4</a> | UP     | 1 OK       |         |
| <a href="#">NS1-TLD5</a> | UP     | 1 OK       |         |
| <a href="#">NS1-TLD6</a> | UP     | 1 OK       |         |
| <a href="#">NS1-TLD7</a> | UP     | 1 OK       |         |
| <a href="#">NS1-TLD8</a> | UP     | 1 OK       |         |

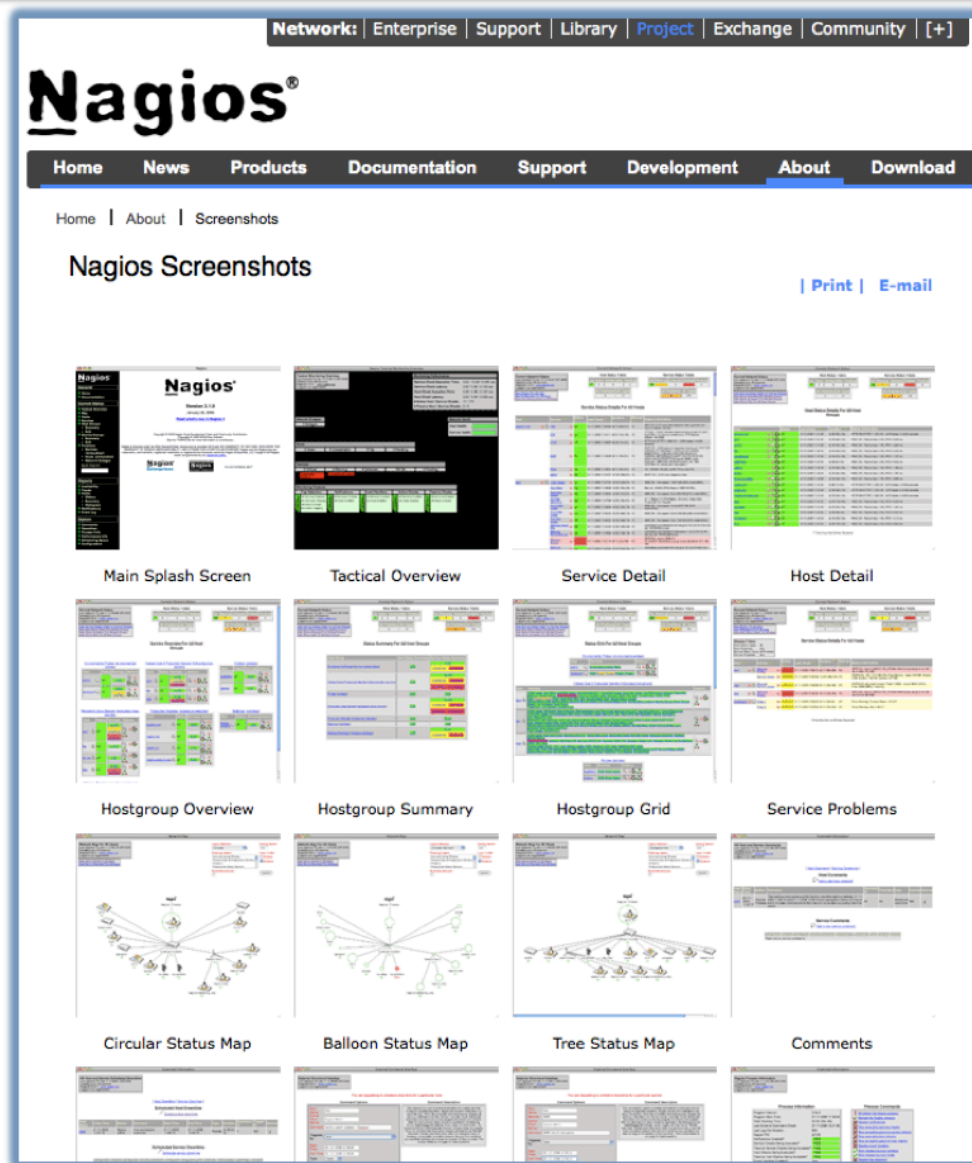
# Collapsed tree status map



# Marked-up circular status map



# More sample screenshots



Many more sample  
Nagios screenshots  
available here:

[http://www.nagios.org/about/  
screenshots](http://www.nagios.org/about/screenshots)