**NAGIOS**

**NAGIOS 3.5.0 core INSTALL ON CENTOS 5.5 32bit**

**Required Min - Hardware 1GHZ - 512MB RAM**

**Recommended – Hardware 2GHZ – 1GB RAM**

Nagios 3.5.0 required php 5.2 above

Nagios 3 Changelog

<http://nagios.sourceforge.net/docs/3_0/whatsnew.html>

Upgrade PHP

REF –

<http://www.rackspace.com/knowledge_center/article/how-to-installupgrade-php-53-for-centos-5x>

sudo rpm -Uvh http://dl.fedoraproject.org/pub/epel/5/x86\_64/epel-release-5-4.noarch.rpm

sudo rpm -Uvh <http://repo.webtatic.com/yum/centos/5/latest.rpm>

**yum install php**

**Nagios Download and Install**

Nagios Download

<http://pkgs.fedoraproject.org/repo/pkgs/nagios/>

Nagios plugin download

<http://www.nagios.org/download/plugins>

**NRPE Download**

http://pkgs.fedoraproject.org/repo/pkgs/nrpe/nrpe-2.12.tar.gz/b2d75e2962f1e3151ef58794d60c9e97/nrpe-2.12.tar.gz

**REF -**

<http://online-linux.blogspot.in/2009/07/step-by-step-install-configure-nagios.html>

Monitoring of [network services](http://www.debianhelp.co.uk/nagiosinstall.htm) (SMTP, POP3, HTTP, NNTP, PING, etc.)  
  
Monitoring of host resources (processor load, disk and memory usage, running processes, [log files](http://www.debianhelp.co.uk/nagiosinstall.htm), etc.)  
  
Monitoring of environmental factors such as temperature  
  
Simple plugin design that allows users to easily develop their own host and service checks

**yum install httpd  
yum install gcc**

Create a new nagios user account and give it a password.

**/usr/sbin/useradd nagios  
passwd nagios**

**/usr/sbin/groupadd nagcmd**

**/usr/sbin/usermod -G nagcmd nagios  
/usr/sbin/usermod -G nagcmd apache**

Create a directory for storing the downloads.

**mkdir ~/downloads  
cd ~/downloads**

wget <http://pkgs.fedoraproject.org/repo/pkgs/nagios/nagios-3.5.0.tar.gz/aeef195d2033cc362bf6cb972bcc8f07/nagios-3.5.0.tar.gz>

wget <http://prdownloads.sourceforge.net/sourceforge/nagiosplug/nagios-plugins-1.4.16.tar.gz>

**Don’t use below - Site not found**

wget <http://osdn.dl.sourceforge.net/sourceforge/nagios/nagios-3.0.tar.gz>

wget [http://osdn.dl.sourceforge.net/sourceforge/nagiosplug/nagios-plugins-1.4...](http://osdn.dl.sourceforge.net/sourceforge/nagiosplug/nagios-plugins-1.4.11.tar.gz)

**cd ~/downloads**

**tar xzf nagios-3.5.0.tar.gz  
cd nagios-3.5.0**

Run the Nagios configure script, passing the name of the group you created earlier like so:

**./configure --with-command-group=nagcmd**

Compile the Nagios source code.

**make all**

Install binaries, init script, sample config files and set permissions on the external command directory.

**make install  
make install-init  
make install-config  
make install-commandmode**

**You will get libssl error so do the following and run again from ./configure**

**Yum install openssl-devel**

Don't start Nagios yet - there's still more that needs to be done...

Sample configuration files have now been installed in the /usr/local/nagios/etc directory. These sample files should work fine for getting started with Nagios. You'll need to make just one change before you proceed...

Edit the /usr/local/nagios/etc/objects/contacts.cfg config file with your favorite editor and change the email address associated with the nagiosadmin contact definition to the address you'd like to use for receiving alerts.

**vi /usr/local/nagios/etc/objects/contacts.cfg**

Install the Nagios web config file in the Apache conf.d directory.

**make install-webconf**

Create a nagiosadmin account for logging into the Nagios web interface. Remember the password you assign to this account - you'll need it later.

**htpasswd -c /usr/local/nagios/etc/htpasswd.users nagiosadmin**

Restart Apache to make the new settings take effect.

**service httpd restart**

**cd ~/downloads**

**tar xzf nagios-plugins-1.4.11.tar.gz  
cd nagios-plugins-1.4.11**

Compile and install the plugins.

**./configure --with-nagios-user=nagios --with-nagios-group=nagios  
make  
make install**

**chkconfig --add nagios**

**chkconfig nagios on**

Verify the sample Nagios configuration files.

**/usr/local/nagios/bin/nagios -v /usr/local/nagios/etc/nagios.cfg**

If there are no errors, start Nagios.

**Service httpd restart**

**service nagios start**

**NRPE DOWNLOAD AND INSTALL**

**NRPE Documentation**

<http://nagios.sourceforge.net/docs/nrpe/NRPE.pdf>

**NRPE Download**

http://pkgs.fedoraproject.org/repo/pkgs/nrpe/nrpe-2.12.tar.gz/b2d75e2962f1e3151ef58794d60c9e97/nrpe-2.12.tar.gz

**Nagios Client1**

**View /usr/local/nagios/etc/nrpe.cfg**

**/usr/local/nagios/libexec**

**/usr/local/nagios/libexec/check\_nrpe -H localhost -c check\_load**

**/usr/local/nagios/libexec/check\_nrpe -H localhost -c check\_users**

**/usr/local/nagios/libexec/check\_nrpe -H localhost -c check\_load**

**/usr/local/nagios/libexec/check\_nrpe -H localhost -c check\_hda1**

**/usr/local/nagios/libexec/check\_nrpe -H localhost -c check\_total\_procs**

**/usr/local/nagios/libexec/check\_nrpe -H localhost -c check\_zombie\_procs**

**/usr/local/nagios/etc/nrpe.cfg**

**Custom added**

**command[check\_salman]=/usr/local/nagios/libexec/check\_disk -w 20% -c 10% -p /dev/sda6**

**-w warning 20% remaining warning level**

**-c critical level 10% - 10%free space critical notfy**

**-p path**

**/usr/local/nagios/libexec/check\_disk**

**ADDING HOST/Client1 ON NAGIOS**

**vi /usr/local/nagios/etc/nagios.cfg**

**# Definitions for monitoring a Windows machine**

**#cfg\_file=/usr/local/nagios/etc/objects/windows.cfg**

**# Definitions for monitoring a router/switch**

**#cfg\_file=/usr/local/nagios/etc/objects/switch.cfg**

uncomment

**cfg\_dir=/usr/local/nagios/etc/servers**

cp /usr/local/nagios/etc/objects/localhost.cfg /usr/local/nagios/etc/servers/centos.cfg

vi /usr/local/nagios/etc/servers/centos.cfg

Overwrite the following content

###############################################################################

# LOCALHOST.CFG - SAMPLE OBJECT CONFIG FILE FOR MONITORING THIS MACHINE

#

# Last Modified: 05-31-2007

#

# NOTE: This config file is intended to serve as an \*extremely\* simple

# example of how you can create configuration entries to monitor

# the local (Linux) machine.

#

###############################################################################

###############################################################################

###############################################################################

#

# HOST DEFINITION

#

###############################################################################

###############################################################################

# Define a host for the local machine

define host{

use linux-server ; Name of host template to use

; This host definition will inherit all variables that are defined

; in (or inherited by) the linux-server host template definition.

host\_name centos5.5

alias centos5.5

address 172.16.0.210

}

###############################################################################

###############################################################################

#

# HOST GROUP DEFINITION

#

###############################################################################

###############################################################################

# Define an optional hostgroup for Linux machines

#define hostgroup{

# hostgroup\_name linux-servers ; The name of the hostgroup

# alias Linux Servers ; Long name of the group

# members centos5.5,centos ; Comma separated list of hosts that belong to this group

# }

###############################################################################

###############################################################################

#

# SERVICE DEFINITIONS

#

###############################################################################

# Define a service to "ping" the local machine

define service{

use local-service ; Name of service template to use

host\_name centos5.5

service\_description PING

check\_command check\_ping!100.0,20%!500.0,60%

}

# Define a service to check the disk space of the root partition

# on the local machine. Warning if < 20% free, critical if

# < 10% free space on partition.

define service{

use local-service ; Name of service template to use

host\_name centos5.5

service\_description Root Partition

check\_command check\_local\_disk!20%!10%!/

}

# Define a service to check the number of currently logged in

# users on the local machine. Warning if > 20 users, critical

# if > 50 users.

define service{

use local-service ; Name of service template to use

host\_name centos5.5

service\_description Current Users

check\_command check\_local\_users!20!50

}

# Define a service to check the number of currently running procs

# on the local machine. Warning if > 250 processes, critical if

# > 400 users.

define service{

use local-service ; Name of service template to use

host\_name centos5.5

service\_description Total Processes

check\_command check\_local\_procs!250!400!RSZDT

}

# Define a service to check the load on the local machine.

define service{

use local-service ; Name of service template to use

host\_name centos5.5

service\_description Current Load

check\_command check\_local\_load!5.0,4.0,3.0!10.0,6.0,4.0

}

# Define a service to check the swap usage the local machine.

# Critical if less than 10% of swap is free, warning if less than 20% is free

define service{

use local-service ; Name of service template to use

host\_name centos5.5

service\_description Swap Usage

check\_command check\_local\_swap!20!10

}

# Define a service to check SSH on the local machine.

# Disable notifications for this service by default, as not all users may have SSH enabled.

define service{

use local-service ; Name of service template to use

host\_name centos5.5

service\_description SSH

check\_command check\_ssh

notifications\_enabled 0

}

# Define a service to check HTTP on the local machine.

# Disable notifications for this service by default, as not all users may have HTTP enabled.

define service{

use local-service ; Name of service template to use

host\_name centos5.5

service\_description HTTP

check\_command check\_http

notifications\_enabled 0

}

**Understanding Configuration tags**

**Ref –**

[**http://www.ibm.com/developerworks/aix/library/au-nagios/**](http://www.ibm.com/developerworks/aix/library/au-nagios/)

**Nagios Plugin Exchange**

The [Nagios Exchange](http://www.nagiosexchange.org/) is a central repository for scores of public Nagios plug-ins.

**define contact**{

contact\_name jdoe

alias John Due

service\_notification\_commands notify-by-email

host\_notification\_commands host-notify-by-emailes

email john.doe@yourcompany.com

}

**define contactgroup**{

contactgroup\_name server-admins

alias Server Administrators

members jdoe,albundy

}

**define host**{

host\_name ubuntu\_1\_2

alias Ubuntu test server

address 192.168.1.2

check\_command check-host-alive

max\_check\_attempts 20

notifications\_enabled 1

event\_handler\_enabled 0

flap\_detection\_enabled 0

process\_perf\_data 1

retain\_status\_information 1

retain\_nonstatus\_information 1

notification\_interval 60

notification\_period 24x7

notification\_options d,u,r

}

**define service**{

use service-template

host\_name ubuntu\_1\_2

service\_description PING

check\_period 24x7

contact\_groups server-admins

notification\_options c,r

check\_command check\_ping!300.0,20%!1000.0,60%

}

**Exit status codes are interpreted as follows:**

* **OK**—exit code 0—indicates a service is working properly.
* **WARNING**—exit code 1—indicates a service is in warning state.
* **CRITICAL**—exit code 2—indicates a service is in critical state.
* **UNKNOWN**—exit code 3—indicates a service is in unknown state.

**How to write Nagios plug-ins**

The most exciting aspect of Nagios is that writing your own plug-ins is simple and requires learning only a few easy principles. To manage a plug-in, Nagios simply spawns a child process each time it queries the status of a service, and it uses the output and exit code from that command to determine status

The last state usually means that the plug-in was unable to determine the status of the service. This might be the condition of an internal error, for instance.

Below is an example script in Python that checks the UNIX® load average. It assumes a level above 2.0 is a warning state and level above 5.0 is critical. The values are hardcoded and the load average from the last minute is always used.

**Listing 5. Python plug-in—sample working plug-in**

|  |
| --- |
| #!/usr/bin/env python  import os,sys  (d1, d2, d3) = os.getloadavg()  if d1 >= 5.0:  print "GETLOADAVG CRITICAL: Load average is %.2f" % (d1)  sys.exit(2)  elif d1 >= 2.0:  print "GETLOADAVG WARNING: Load average is %.2f" % (d1)  sys.exit(1)  else:  print "GETLOADAVG OK: Load average is %.2f" % (d1)  sys.exit(0) |

**Sample plug-in—registering with Nagios**

|  |
| --- |
| define command{  command\_name check\_mygetloadavg  command\_line /path/to/check\_getloadavg  } |

**MACROS**

[**http://nagios.sourceforge.net/docs/3\_0/macros.html**](http://nagios.sourceforge.net/docs/3_0/macros.html)

Standard macros that are available in Nagios are listed here. On-demand macros and macros for custom variables are described [here](http://nagios.sourceforge.net/docs/3_0/macros.html).

**Macro Validity**

Although macros can be used in all commands you define, not all macros may be "valid" in a particular type of command. For example, some macros may only be valid during service notification commands, whereas other may only be valid during host check commands. There are ten types of commands that Nagios recognizes and treats differently. They are as follows:

1. Service checks
2. Service notifications
3. Host checks
4. Host notifications
5. Service [event handlers](http://nagios.sourceforge.net/docs/3_0/eventhandlers.html) and/or a global service event handler
6. Host [event handlers](http://nagios.sourceforge.net/docs/3_0/eventhandlers.html) and/or a global host event handler
7. [OCSP](http://nagios.sourceforge.net/docs/3_0/configmain.html#ocsp_command) command
8. [OCHP](http://nagios.sourceforge.net/docs/3_0/configmain.html#ochp_command) command
9. Service [performance data](http://nagios.sourceforge.net/docs/3_0/perfdata.html) commands
10. Host [performance data](http://nagios.sourceforge.net/docs/3_0/perfdata.html) commands

The tables below list all macros currently available in Nagios, along with a brief description of each and the types of commands in which they are valid. If a macro is used in a command in which it is invalid, it is replaced with an empty string. It should be noted that macros consist of all uppercase characters and are enclosed in **$** characters.

**Macro Availability Chart**

**Legend:**

|  |  |
| --- | --- |
| No | The macro is not available |
| Yes | The macro is available |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Macro Name** | **Service Checks** | **Service Notifications** | **Host Checks** | **Host Notifications** | **Service Event Handlers and** [**OCSP**](http://nagios.sourceforge.net/docs/3_0/configmain.html#ocsp_command) | **Host Event Handlers and** [**OCHP**](http://nagios.sourceforge.net/docs/3_0/configmain.html#ochp_command) | **Service Perf Data** | **Host Perf Data** |
| Host Macros: [3](http://nagios.sourceforge.net/docs/3_0/macrolist.html#note3) | | | | | | | | |
| [$HOSTNAME$](http://nagios.sourceforge.net/docs/3_0/macrolist.html#hostname) | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| [$HOSTDISPLAYNAME$](http://nagios.sourceforge.net/docs/3_0/macrolist.html#hostdisplayname) | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| [$HOSTALIAS$](http://nagios.sourceforge.net/docs/3_0/macrolist.html#hostalias) | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

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**Nagios SSH**

**Nagios SSH vs NRPE**

<http://serverfault.com/questions/280205/nagios-remote-monitoring-nrpe-vs-ssh>

**Configuring Nagios via ssh Nrpe Snmp Ncsa – How do Nagios server client communiocate**

http://www.kilala.nl/Sysadmin/index.php?id=708

**NAGIOS**

Monitoring Tools

<http://www.linuxscrew.com/2012/03/22/linux-monitoring-tools/>

<http://www.ibm.com/developerworks/aix/library/au-nagios/>

MRTG

RRDTOOL

Xymon formally known as hobbit

Cacti & Nagios

Cacti provides trending data,

while Nagios provides real-time monitoring/alerting

zabbix

opennms

zenoss

Advantage disadvantage of above tools

http://workaround.org/try-zabbix

<http://www.centreon.com/>

zabbix

Nagios

Nagios server or any anomaly you will get an alert from Nagios. It’s important that Nagios suports wide range of alerts including e-mail, sms, chat messages and [phone call notifications](http://www.linuxscrew.com/2011/09/13/nagios-notification-by-phone-call/). Large number of official and third party plugins can extend Nagios’ functionality dramatically.

Nagios monitors states but it doesn’t show any graphs like network interface usage etc., that’s why it’s good habit to use Nagios with other monitoring tools listed below.

Cacti

Cacti is another web based monitoring system written in PHP and licensed under GPL. Unlike Nagios describe above Cacti was designed mainly fo the graphs — in brief, Cacti polls various services and then graphs resulting data. It uses [RRDTool](http://oss.oetiker.ch/rrdtool/) to build graphs so if you can some graphs in .rrd files you can easily attach them to Cacti and have everything in one place.

As well as Nagios Cacti supports SNMP that makes it possible to monitor almost any device in your network: Linux hosts, \*BSD hosts, Windows hosts, Cisco devices, Juniper equipment, voip phones, routers, switches whatever.

Meantime by default Cacti doesn’t provides alerts so you should install third party plugin ([thold](http://docs.cacti.net/plugin:thold) or others) for that or use more flexible solutions supporting alerts (like Nagios or Zabbix).

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#### MRTG

MRTG is yet another open source monitoring tool that collects data at local and/or remote host by means of SNMP protocol. But MRTG is much more simple than Cacti, Nagios or Zabbix so it may be a good choice for small projects.

One of the most common applications of MRTG is monitoring of network interfaces, CPU, memory usage and network interfaces statistics. One of MRTG’s advantages is that it it extremely easy to deploy. Btw, MRTG was created by author of RRDTool Obi Oetiker.

SNMP

**Definition:** SNMP is a standard TCP/IP protocol for network management. Network administrators use SNMP to monitor and map network availability, performance, and error rates.

### Using SNMP

To work with SNMP, network devices utilize a distributed data store called the Management Information Base (MIB). All SNMP compliant devices contain a MIB which supplies the pertinent attributes of a device. Some attributes are fixed (hard-coded) in the MIB while others are dynamic values calculated by agent software running on the device.

Enterprise network management software, such as Tivoli and HP OpenView, uses SNMP commands to read and write data in each device MIB. 'Get' commands typically retrieve data values, while 'Set' commands typically initiate some action on the device. For example, a system reboot script is often implemented in management software by defining a particular MIB attribute and issuing an SNMP Set from the manager software that writes a "reboot" value into that attribute.

What is SNMP in brief

http://www.dpstele.com/layers/l2/snmp\_l2\_tut\_part1.php?alink=SNMP&r=4&cls=ylink

RRDTOOL

## What RRDtool does

RRDtool is the OpenSource industry standard, high performance data logging and graphing system for time series data. RRDtool can be easily integrated in shell scripts, perl, python, ruby, lua or tcl applications.

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Nagios Mysql Monitoring

<http://kedar.nitty-witty.com/blog/wp-content/uploads/2010/11/10-steps-mysql-monitoring-nagios-install-configure.pdf>

Nagios Sql Site

<http://www.techrepublic.com/blog/itdojo/manage-your-nagios-installation-with-the-web-based-gui-nagiosql/3535>

Nagios 3 Changelog

<http://nagios.sourceforge.net/docs/3_0/whatsnew.html>

Nagios Configuration

<http://doc.opensuse.org/products/draft/SLES/SLES-tuning_sd_draft/cha.nagios.html>

<http://online-linux.blogspot.in/2009/07/step-by-step-install-configure-nagios.html>

NAGIOS –

1. Solaris Server
2. Windows Server
3. Linux Servers
4. Cisco Switches

Configure SNMP

<http://www.it-slav.net/blogs/2008/11/11/install-and-configure-snmp-on-rhel-or-centos/>

MRTG

<http://www.cyberciti.biz/faq/centos-fedora-linux-multi-router-traffic-grapher-tutorial/>

Nagios REF –

<http://www.linuxforu.com/2011/07/nagios-setup-guide/>