

# **Multiple Nagios Instances on a Single Server**

## Contents

Overview .....	3
Installation .....	3
Download and Install Boutell's GD library .....	3
Compile and install the Nagios and Plugins .....	3
File Copy and Directory Creation.....	3
Configuration .....	4
nagios.cfg modifications .....	4
CGI.CFG File Edits.....	5
Resource.cfg file edits.....	5
Create nagios configuration for Apache .....	5
Edit config.inc.php .....	6
Correct Directory and File Permissions.....	6
Create Monitors .....	7
Startup Scripts (init.d).....	7
NagiosGraph (Performance Monitoring).....	8
Requirements .....	8
Install rrdtool.....	8
Install NagiosGraph.....	9
Create the directory structure and copy files.....	9
Configuration file edits.....	10
Insert.pl & insert.sh file .....	10
Various CGI files .....	10
Nagiosgraph.conf file .....	10
nagios.cfg file .....	11
checkcommands.cfg file .....	11
serviceextinfo.cfg file .....	11
CGI.CFG File .....	12
Map file .....	12
Complete Install.....	12

## ***Overview***

This document explains how to configure and run multiple instances of Nagios on a single server using a single installation that has unique and shared resources using LDAP Authentication.

## ***Installation***

### **Download and Install Boutell's GD library**

```
http://www.libgd.org/releases/gd-2.0.35.tar.gz
./configure
make install
```

### **Compile and install the Nagios and Plugins**

```
wget http://prdownloads.sourceforge.net/sourceforge/nagios/nagios-3.2.0.tar.gz
wget http://prdownloads.sourceforge.net/sourceforge/nagiosplug/nagios-plugins-1.4.13.tar.gz
tar -xzf nagios-3.2.0.tar.gz
tar -xzf nagios-plugins-1.4.13.tar.gz
```

```
export NAGIOSHOME=/usr/local/nagios
cd nagios-3.2.0
./configure --enable-embedded-perl --with-command-group=nagios --with-gd-lib=/usr/local/lib --with-gd-inc=/usr/local/include; make all; make install install-init;make-install-config;make install-commandmode
```

```
Compile and install the Nagios plugins
cd nagios-plugins-1.4.13
./configure --prefix=$NAGIOSHOME/core/nagios-plugins --with-nagios-user=nagios --with-nagios-group=nagios; make ; make install
```

### **File Copy and Directory Creation**

Create directories which hold your instances and their subdirectories  
NAGIOSHOME=/usr/local/nagios

```
mkdir $NAGIOSHOME/instances
mkdir $NAGIOSHOME/instances/nagios_prod
mkdir $NAGIOSHOME/instances/nagios_prod/etc
mkdir $NAGIOSHOME/instances/nagios_prod/etc/monitors
```

```
mkdir $NAGIOSHOME/instances/nagios_prod/var
mkdir $NAGIOSHOME/instances/nagios_prod/var/rw
mkdir $NAGIOSHOME/instances/nagios_prod/var/spool
mkdir $NAGIOSHOME/instances/nagios_prod/var/spool/checkresults
mkdir $NAGIOSHOME/instances/nagios_prod/share
mkdir $NAGIOSHOME/instances/nagios_prod/sbin
```

Create Symbolic Links

```
In -s $NAGIOSHOME/nagios/bin $NAGIOSHOME/instances/nagios_prod/bin
In -s $NAGIOSHOME/nagios-plugins/libexec $NAGIOSHOME/instances/nagios_prod/libexec
```

Copy files

```
cp -r $NAGIOSHOME/sbin/* $NAGIOSHOME/instances/nagios_prod/sbin/
cp -r $NAGIOSHOME/nagios/share/* $NAGIOSHOME/instances/nagios_prod/share/
cp $NAGIOSHOME/etc/cgi.cfg $NAGIOSHOME/instances/nagios_prod/etc/
cp $NAGIOSHOME/etc/resource.cfg $NAGIOSHOME/instances/nagios_prod/etc/
cp $NAGIOSHOME/etc/nagios.cfg $NAGIOSHOME/instances/nagios_prod/etc/
```

Do the same with all the other instances you are going to deploy.

## ***Configuration***

In the editing of the Nagios config files there will be instances that point to a central shared location and to individual settings. The configurations that are shared are checkcommands.cfg, misccommands.cfg, contacts.cfg, contactgroups.cfg, timeperiods.cfg, templates.cfg, dependencies.cfg & escalations.cfg. The individual ones are the specific monitors and hosts, which in the nagios.cfg we will state a directory instead of the individual configuration files.

### **nagios.cfg modifications**

Example:

```
log_file=/usr/local/nagios/instances/nagios_prod/var/nagios.log
```

```
# OBJECT CONFIGURATION FILE(S)
```

```
cfg_file=/usr/local/nagios/etc/objects/checkcommands.cfg
```

```
cfg_file=/usr/local/nagios/etc/objects/misccommands.cfg
```

```
cfg_file=/usr/local/nagios/etc/objects/contacts.cfg
```

```
cfg_file=/usr/local/nagios/etc/objects/contactgroups.cfg
```

```
cfg_file=/usr/local/nagios/etc/objects/timeperiods.cfg
```

```
cfg_file=/usr/local/nagios/etc/objects/templates.cfg
```

```
cfg_file=/usr/local/nagios/etc/objects/dependencies.cfg
```

```
cfg_file=/usr/local/nagios/etc/objects/escalations.cfg
```

```
# Definitions for monitoring
```

```
cfg_dir=/usr/local/nagios/instances/nagios_prod/etc/monitors
```

```
object_cache_file=/usr/local/nagios/instances/nagios_prod/var/objects.cache
precached_object_file=/usr/local/nagios/instances/nagios_prod/var/objects.precache
resource_file=/usr/local/nagios/instances/nagios_prod/etc/resource.cfg
status_file=/usr/local/nagios/instances/nagios_prod/var/status.dat
command_file=/usr/local/nagios/instances/nagios_prod/var/rw/nagios.cmd
lock_file=/usr/local/nagios/instances/nagios_prod/var/nagios.lock
temp_file=/usr/local/nagios/instances/nagios_prod/var/nagios.tmp
log_archive_path=/usr/local/nagios/instances/nagios_prod/var/archives
state_retention_file=/usr/local/nagios/instances/nagios_prod/var/retention.dat
debug_file=/usr/local/nagios/instances/nagios_prod/var/nagios.debug
```

## CGI.CFG File Edits

The `cgi.cfg` file must be edit for Apache to be able to run the correct CGI scripts for each instance you plan to run. To follow the examples in previous sections we use `nagios_prod` as our instance.

```
main_config_file=/usr/local/nagios/instances/nagios_prod/etc/nagios.cfg
physical_html_path=/usr/local/nagios/instances/nagios_prod/share
url_html_path=/nagios_prod/
```

## Resource.cfg file edits

```
‎$USER1$=/etc/nagios/instances/nagios_prod/libexec
```

## Create nagios configuration for Apache

Create a `nagios_prod.conf` file in the `/etc/httpd/conf.d` directory with the following contents.

Note: this example uses ldap and the string will vary for your instance.

```
ScriptAlias /nagios_prod/cgi-bin/ "/usr/local/nagios/instances/nagios_prod/sbin/"
<Directory "/usr/local/nagios/instances/nagios_prod/sbin">
  SetEnv NAGIOS_CGI_CONFIG /usr/local/nagios/instances/nagios_prod/etc/cgi.cfg
  Options ExecCGI
  Options FollowSymLinks
  AllowOverride None
  Order allow,deny
  Allow from all
  AuthType Basic
  AuthName "Nagios Area51"
  AuthBasicProvider ldap
  AuthzLDAPAuthoritative off
  AuthLDAPURL ldaps://myldap:636/ou=IMEROOT,o=mycorp?uid
</Directory>

Alias /nagios_prod/ "/usr/local/nagios/instances/nagios_prod/share/"
<Directory "/usr/local/nagios/instances/nagios_prod/share/">
  Options None
```

```
AllowOverride None
Order allow,deny
Allow from all
AuthType Basic
AuthName "Nagios Area51"
AuthBasicProvider ldap
AuthLDAPAuthoritative off
AuthLDAPURL ldaps://myldap:636/ou=IMEROOT,o=mycorp?uid
</Directory>
```

## Edit config.inc.php

The config.inc.php file is located in the /usr/local/nagios/instances/nagios\_prod/share/ directory. Make the path changes for the instance.

Example:

```
<?php
//

$cfg['cgi_config_file']='/usr/local/nagios/instances/nagios_prod/etc/cgi.cfg'; // location of the CGI config file

$cfg['cgi_base_url']='/nagios_prod/cgi-bin';

// FILE LOCATION DEFAULTS
$cfg['main_config_file']='/usr/local/nagios/instances/nagios_prod/etc/nagios.cfg'; // default location of the main Nagios config
file
$cfg['status_file']='/usr/local/nagios/instances/nagios_prod/var/status.dat'; // default location of Nagios status file
$cfg['state_retention_file']='/usr/local/nagios/instances/nagios_prod/var/retention.dat'; // default location of Nagios retention
file

// utilities
require_once(dirname(__FILE__).'/includes/utils.inc.php');

?>
```

## Correct Directory and File Permissions

At this point it is a good time to correct the file and directory permissions to the correct owner. Nagios is very particular on the correct settings. This is a painful process and is a good candidate to dump in a script and ran.

```
# chown -R nagios.nagios /usr/local/nagios/
# chown -R root.root /usr/local/nagios/instances/nagios_prod/share/locale
# chmod 775 /usr/local/nagios/instances
# chmod 775 /usr/local/nagios/instances/nagios_prod
# chmod 775 /usr/local/nagios/instances/ nagios_prod /etc
# chmod 775 /usr/local/nagios/instances/ nagios_prod /etc/monitors
# chmod 775 /usr/local/nagios/instances/ nagios_prod/sbin
# chmod 775 /usr/local/nagios/instances/ nagios_prod/share
# chmod 775 /usr/local/nagios/instances/ nagios_prod/share/docs
```

```
# chmod 775 /usr/local/nagios/instances/ nagios_prod/share/contexthelp
# chmod 775 /usr/local/nagios/instances/ nagios_prod/share/images
# chmod 775 /usr/local/nagios/instances/ nagios_prod/share/images/logos
# chmod 775 /usr/local/nagios/instances/ nagios_prod/share/includes
# chmod 775 /usr/local/nagios/instances/ nagios_prod/share/media
# chmod 775 /usr/local/nagios/instances/ nagios_prod/share/ssi
# chmod 775 /usr/local/nagios/instances/ nagios_prod/share/stylesheets
# chmod 775 /usr/local/nagios/instances/ nagios_prod/var
# chmod 775 /usr/local/nagios/instances/ nagios_prod/var/rw
# chmod 775 /usr/local/nagios/instances/ nagios_prod/var/spool
# chmod 775 /usr/local/nagios/instances/ nagios_prod/var/spool/checkresults
```

Now the files

```
# chmod 664 /usr/local/nagios/instances/nagios_prod/*
# chmod 664 /usr/local/nagios/instances/ nagios_prod /etc/*
# chmod 664 /usr/local/nagios/instances/ nagios_prod /etc/monitors/*
# chmod 664 /usr/local/nagios/instances/ nagios_prod/sbin/*
# chmod 664 /usr/local/nagios/instances/ nagios_prod/share/*
# chmod 664 /usr/local/nagios/instances/ nagios_prod/share/docs/*
# chmod 664 /usr/local/nagios/instances/ nagios_prod/share/contexthelp/*
# chmod 664 /usr/local/nagios/instances/ nagios_prod/share/images/*
# chmod 664 /usr/local/nagios/instances/ nagios_prod/share/images/logos/*
# chmod 664 /usr/local/nagios/instances/ nagios_prod/share/includes/*
# chmod 664 /usr/local/nagios/instances/ nagios_prod/share/media/*
# chmod 664 /usr/local/nagios/instances/ nagios_prod/share/ssi/*
# chmod 664 /usr/local/nagios/instances/ nagios_prod/share/stylesheets/*
# chmod 664 /usr/local/nagios/instances/ nagios_prod/var/*
# chmod 664 /usr/local/nagios/instances/ nagios_prod/var/rw/*
# chmod 664 /usr/local/nagios/instances/ nagios_prod/var/spool/*
# chmod 664 /usr/local/nagios/instances/ nagios_prod/var/spool/checkresults/*
```

## ***Create Monitors***

At this point you can start the creation of the monitors, hosts, hostgroups, contacts. Contactgroups and all the other dependent settings. Refer to Nagios site for syntax on each of the different objects. For the monitors you can use the default monitors created at install in /usr/local/nagios/etc/objects and copy the configs for localhost.cfg and windows.cfg as a starting basis.

Once you have your settings completed you need to run a check on the configs running the command

```
# /usr/local/nagios/instances/nagios_prod/bin/nagios -v /usr/local/nagios/instances/nagios_prod/etc/nagios.cfg
```

Fix any errors at this point and recheck.

## ***Startup Scripts (init.d)***

Add Nagios to the list of system services and have it automatically start when the system boots.

Create init.d scripts for each instance you want to create. Copy the Nagios installed script, and name it nagios\_prod. Open in your favorite editor and find the line prefix= and change the path.

Example:

```
prefix=/usr/local/nagios/instances/nagios_prod
```

Save the changes and change the permissions to 755 on the script.

Use chkconfig to add it to the startup and enable it.

```
# chkconfig --add nagios_prod
# chkconfig nagios_prod on
```

At this point you can already start your instances:

```
# service nagios_prod start
```

Now restart your Apache and open your browser

```
# service httpd restart
```

[http://your.server/nagios\\_prod](http://your.server/nagios_prod)

## ***NagiosGraph (Performance Monitoring)***

This section explains how to configure Nagiosgraph for multiple instances to gathering and graphing performance data created by Nagios. Each of the steps will have to be done for each individual instance you want to collect and graph performance data with the exception of rrdtool and intltool installs, those are only required installed once.

### **Requirements**

intltool.x86\_64 to 0.35 or higher

rrdtool

nagiosgraph

Update intltool.x86\_64 to 0.35 or higher

```
yum -y install intltool.x86_64
```

### **Install rrdtool**

```
wget 'http://dag.wieers.com/rpm/packages/rrdtool/rrdtool-1.2.23-1.el5.rf.x86_64.rpm'
```

```
wget 'http://dag.wieers.com/rpm/packages/rrdtool/perl-rrdtool-1.2.23-1.el5.rf.x86_64.rpm'
```

```
wget 'http://dag.wieers.com/rpm/packages/rrdtool/rrdtool-devel-1.2.23-1.el5.rf.x86_64.rpm'
```

```
wget 'http://dag.wieers.com/rpm/packages/rrdtool/ruby-rrdtool-1.2.23-1.el5.rf.x86_64.rpm'
```

```
wget 'http://dag.wieers.com/rpm/packages/rrdtool/python-rrdtool-1.2.23-1.el5.rf.x86_64.rpm'
```



```
wget 'http://dag.wieers.com/rpm/packages/rrdtool/php-rrdtool-1.0.50-3.el5.rf.x86_64.rpm'  
wget 'http://dag.wieers.com/rpm/packages/rrdtool/rrdtool-1.2.23-1.el5.rf.x86_64.rpm'  
wget 'http://mesh.dl.sourceforge.net/sourceforge/nagiosgraph/nagiosgraph-1.3.1.tar.gz'  
yum install -y libart_lgpl  
rpm -hiv *rrdtool*.rpm
```

## Install NagiosGraph

```
Download NagiosGraph 1.3.1 from http://nagiosgraph.sourceforge.net/  
cd /usr/local/src  
tar xvf nagiosgraph-1.3.1.tar.gz  
cd nagiosgraph-1.3.1
```

## Create the directory structure and copy files

```
mkdir /usr/local/nagios/instances/nagios_prod/nagiosgraph  
mkdir /usr/local/nagios/instances/nagios_prod/nagiosgraph/rrd  
cp -r . /usr/local/nagios/instances/nagios_prod/nagiosgraph/  
chmod go+rX /usr/local/nagios/instances/nagios_prod/nagiosgraph  
chown nagios.apache /usr/local/nagios/instances/nagios_prod/nagiosgraph/rrd
```

```
cd /usr/local/nagios/instances/nagios_prod/nagiosgraph/lib  
cp insert.* /usr/local/nagios/instances/nagios_prod/sbin/  
touch /usr/local/nagios/instances/nagios_prod/var/nagiosgraph.log  
/usr/local/nagios/instances/nagios_prod/var/spool/perfdata.log  
chown nagios.apache /usr/local/nagios/instances/nagios_prod/var/nagiosgraph.log  
/usr/local/nagios/instances/nagios_prod/var/spool/perfdata.log  
chmod 664 /usr/local/nagios/nagios_prod/var/nagiosgraph.log  
chmod 644 /usr/local/nagios/nagios_prod/var/spool/perfdata.log
```

```
cd /usr/local/nagios/instances/nagios_prod/nagiosgraph/share  
cp nagiosgraph.js /usr/local/nagios/instances/nagios_prod/share/  
cp nagiosgraph.css /usr/local/nagios/instances/nagios_prod/share/stylesheets/  
chown nagios.nagios /usr/local/nagios/instances/nagios_prod/share/nagiosgraph.js  
chown nagios.nagios /usr/local/nagios/instances/nagios_prod/share/stylesheets/nagiosgraph.css
```

```
cd /usr/local/nagios/instances/nagios_prod/nagiosgraph/cgi  
cp * /usr/local/nagios/instances/nagios_prod/sbin/  
cd /usr/local/nagios/instances/nagios_prod/nagiosgraph/etc/  
mv ngshared.pm /usr/local/nagios/instances/nagios_prod/sbin/  
mv nagiosgraph.conf /usr/local/nagios/instances/nagios_prod/sbin/  
mv servdb.conf /usr/local/nagios/instances/nagios_prod/etc/  
mv hostdb.conf /usr/local/nagios/instances/nagios_prod/etc/  
mv map /usr/local/nagios/instances/nagios_prod/etc/  
chown nagios.nagios /usr/local/nagios/instances/nagios_prod/sbin/*
```

```
cp /usr/local/nagios/instances/nagios_prod/nagiosgraph/etc/*
/usr/local/nagios/instances/nagios_prod/etc/
mv /usr/local/nagios/instances/nagios_prod/etc/nagiosgraph.conf
/usr/local/nagios/instances/nagios_prod/sbin/
mv /usr/local/nagios/instances/nagios_prod/etc/ngshared.pm
/usr/local/nagios/instances/nagios_prod/sbin/
```

## Configuration file edits

### ***Insert.pl & insert.sh file***

Edit insert.pl & insert.sh and modify the lib path.

```
# The configuration file and ngshared.pm must be in this directory.
use lib '/usr/local/nagios/instances/nagios_prod/sbin';
```

### ***Various CGI files***

Edit the perl scripts in the cgi and lib directories, modifying the "use lib" for the following files in the /usr/local/nagios/instances/nagios\_prod/sbin directory.

```
showhost.cgi
show.cgi
showhost.cgi
showservice.cgi
testcolor.cgi
```

Change the following line.

```
use lib '/usr/local/nagios/instances/nagios_prod/sbin';
```

### ***Nagiosgraph.conf file***

Edit nagiosgraph.conf change the following lines.

```
log_file=/usr/local/nagios/instances/nagios_prod/var/nagiosgraph.log
rddir = /usr/local/nagios/instances/nagios_prod/nagiosgraph/rrd
mapfile = /usr/local/nagios/instances/nagios_prod/etc/map
```

```
# Location of performance data log file. Comment out if not used.
perflog = /usr/local/nagios/instances/nagios_prod/var/spool/perfdata.log
```

```
# Location of hosts/database control file
hostdb = /usr/local/nagios/instances/nagios_prod/etc/hostdb.conf
```

```
# Location of services/database control file
```

```
servdb = /usr/local/nagios/instances/nagios_prod/etc/servdb.conf
```

```
# Nagios CGI URL
```

```
nagioscgiurl = https://cvglp9999/nagios_prod/cgi-bin
```

```
# JavaScript configuration
```

```
# The URL for the nagiosgraph.js file
```

```
javascript = /nagios_prod/nagiosgraph.js
```

```
# Stylesheet - added to head of show.cgi, etc. Comment out if not used
```

```
stylesheet = /nagios_prod/stylesheets/nagiosgraph.css
```

### ***nagios.cfg file***

Edit **nagios.cfg** and change /add.

Add the line

```
# NagiosGraph
```

```
cfg_file=/usr/local/nagios/instances/nagios_prod/etc/serviceextinfo.cfg
```

Modify the following lines.

```
process_performance_data=1
```

```
service_perfdata_file_processing_command=process-service-perfdata-prod
```

```
service_perfdata_file=/usr/local/nagios/instances/nagios_prod/var/spool/perfdata.log
```

```
service_perfdata_file_template=$LASTSERVICECHECK$ || $HOSTNAME$ || $SERVICEDESC$ || $SERVICEOU  
TPUT$ || $SERVICEPERFDATA$
```

```
service_perfdata_file_mode=a
```

```
service_perfdata_file_processing_interval=30
```

### ***checkcommands.cfg file***

Add to your checkcommands.cfg file in the shared Nagios libexec directory

```
define command {
```

```
    command_name process-service-perfdata-prod
```

```
    command_line /usr/bin/perl /usr/local/nagios/instances/nagios_prod/sbin/insert.pl
```

```
}
```

### ***serviceextinfo.cfg file***

Create **serviceextinfo.cfg** in /usr/local/nagios/instances/nagios\_prod/etc/ and add the entries in for the performance data to graph. Refer to Nagios documentation on the syntax for the serviceextinfo.cfg file.

This file will tell which service monitors you would like to collect performance data on.

Example entry:

```
define serviceextinfo {
```

```
    service_description Memory Usage
```

```

hostgroup_name windows-prod-servers
notes_url /nagios_prod/cgi-
bin/show.cgi?host=$HOSTNAME&service=$SERVICEDESC&db=ntmem,memused,memwarn,memcrit,memmmax
icon_image extinfo.gif
}

define serviceextinfo {
service_description CPU_Load
hostgroup_name windows-prod-servers
notes_url /nagios_prod/cgi-
bin/show.cgi?host=$HOSTNAME&service=$SERVICEDESC&db=ntload,avg05min,avg30min
icon_image extinfo.gif
}

```

## CGI.CFG File

Edit cgi.cfg and add line under main\_config\_file entry.

```
xedtemplate_config_file=/usr/local/nagios/instances/nagios_prod/etc/serviceextinfo.cfg
```

## Map file

Edit the map file in `usr/bin/perl /usr/local/nagios/instances/nagios_prod/etc` directory. The default Nagiosgraph supplied one doesn't have any Windows service map files. A good source for examples can be found at <http://nerhood.wordpress.com/2004/09/22/nagiosgraph-with-windows-support/> and has the basic map files needed for a good start.

Example:

```

# Service type: ntload
# check command: check_nt -H Address -v CPULOAD -l5,80,90,30,70,80
# output: CPU Load 9% (5 min average) 11% (10 min average) 3% (30 min average)
# perfdata: .5 min avg Load.=9%;80;90;0;100 .15 min avg Load.=11%;70;80;0;100 .30 min average Load.=3%;80;90;0;100
/output:.*?Load (\d+)% .*?(d+)% /
and push @s, [ ntload,
[ avg05min, GAUGE, $1 ],
[ avg30min, GAUGE, $2 ] ];

# Service type: ntmem
# check command: check_nt -H Address -v MEMUSE -w 50 -c 90
# output: Memory usage: total:2467.75 Mb - used: 510.38 Mb (21%) - free: 1957.37 Mb (79%)
# perfdata: Memory usage=510.38Mb;1233.88;2220.98;0.00;2467.75
/perfdata:.*usage=(\d+\.\d+Mb);([\d+\.\d+]);([\d+\.\d+]);([\d+\.\d+])/
and push @s, [ ntmem,
[ memused, GAUGE, $1*1024**2 ],
[ memwarn, GAUGE, $2*1024**2 ],
[ memcrit, GAUGE, $3*1024**2 ],
[ memmmax, GAUGE, $5*1024**2 ] ];

```

## Complete Install

Now that NagiosGraph is installed all that remains is to restart your Nagios instance and Apache and

check the results.

```
service nagios_prod restart
```

```
service httpd restart
```