New topics covered include:

- Auto-Discovery

- Advanced Visualizations

- Capacity Planning

- Audit Logging

- Scheduled Reporting

- Configuration and Config Wizards

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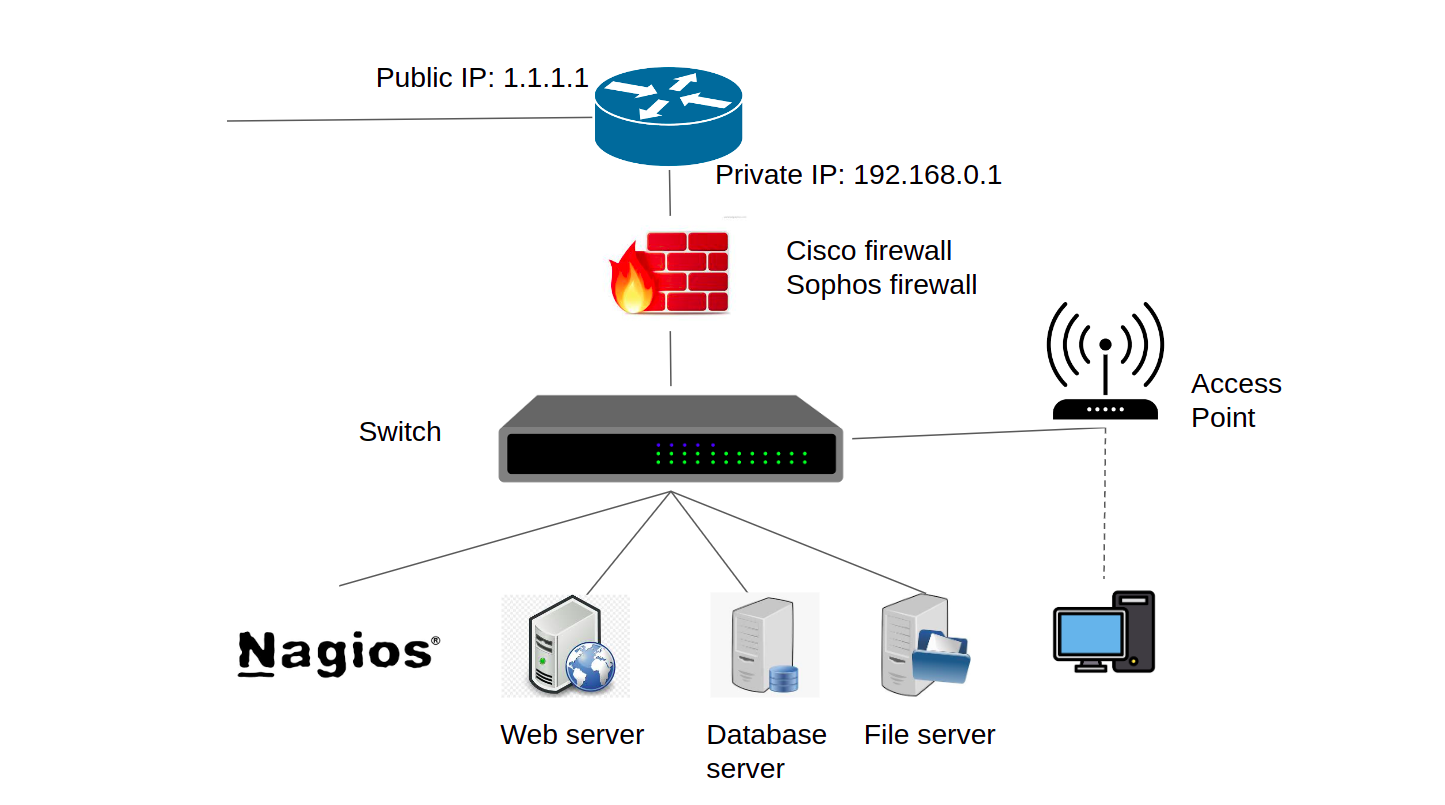
13. Troubleshooting

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# Network Diagram

Here in this tutorial, my nagios server's ip address is 192.168.1.79. I have one linux server(192.168.1.77), one windows server(192.168.1.82) and one cisco-linksys router (192.168.1.1) which is needed to monitor.



# SNMP installation and tuning at server end

Install SNMP daemon and Utilities:

***For CentOS***

[root@centoshost01 ~]# yum install net-snmp-utils net-snmp -y

***For Ubuntu***

root@testserver1:~# apt install snmp snmpd

Configure the SNMP service:

[root@centoshost01 ~]# mv /etc/snmp/snmpd.conf /etc/snmp/snmpd.conf.org

[root@centoshost01 ~]# vim /etc/snmp/snmpd.conf

rocommunity public

syslocation “DataCenter”

syscontact mahidul24@gmail.com

[root@centoshost01 ~]# service snmpd restart

[root@centoshost01 ~]# chkconfig snmpd on

***For ubuntu***

root@testserver1:~# systemctl enable snmpd

Allow snmp port 161 from Firewall:

root@testserver1:~# iptables -nvL

[root@centoshost01 ~]# vim /etc/sysconfig/iptables.old

#Enable snmp

iptables -A INPUT -p tcp --dport 161 -j ACCEPT

iptables -A INPUT -p udp --dport 161 -j ACCEPT

#Enable apache

iptables -A INPUT -p tcp --dport 80 -j ACCEPT

iptables -A INPUT -p udp --dport 80 -j ACCEPT

#Enable mail for nagios report

iptables -A INPUT -p tcp --dport 25 -j ACCEPT

iptables -A INPUT -p udp --dport 25 -j ACCEPT

iptables -A INPUT -p tcp --dport 465 -j ACCEPT

iptables -A INPUT -p udp --dport 465 -j ACCEPT

[root@centoshost01 ~]# sh /etc/sysconfig/iptables.old

[root@centoshost01 ~]# /etc/init.d/iptables restart

**Test with SNMPwalk:**

[root@centoshost01 ~]# snmpwalk -v 1 -c public -O e 127.0.0.1

[root@centoshost01 ~]# snmpwalk -v 1 -c public -O e 192.168.1.79

We can save the OID of the host that we will query in the future like the following way-

[root@centoshost01 ~]# snmpwalk 192.168.1.79 -c public &gt; ~/odifile.txt

# Nagios installation and tuning

# Flash firewall:

[root@centoshost01 ~]# iptables -F

[root@centoshost01 ~]# service iptables save

[root@centoshost01 ~]# service iptables restart

[root@centoshost01 ~]# chkconfig iptables on

If you don't want to flash firewall add the 80, 8080(proxy server's port), 443 and 161 ports from iptable like the below way-

#Enable snmp

iptables -A INPUT -s 192.168.1.0/24 -p tcp --dport 161 -j ACCEPT

iptables -A INPUT -s 192.168.1.0/24 -p udp --dport 161 -j ACCEPT

#Enable apache

iptables -A INPUT -s 192.168.1.0/24 -p tcp --dport 80 -j ACCEPT

iptables -A INPUT -s 192.168.1.0/24 -p udp --dport 80 -j ACCEPT

#Enable mail for nagios report

iptables -A INPUT -p tcp --dport 25 -j ACCEPT

iptables -A INPUT -p udp --dport 25 -j ACCEPT

iptables -A INPUT -p tcp --dport 465 -j ACCEPT

iptables -A INPUT -p udp --dport 465 -j ACCEPT

# SELINUX running:

[root@centoshost01 ~]# vim /etc/selinux/config

SELINUX=disabled

If you dont want to disable selinux then permit the selinux content like the below way-

chcon -R -t httpd\_sys\_content\_t /usr/local/nagios/sbin/

chcon -R -t httpd\_sys\_content\_t /usr/local/nagios/share/

# Installing Apache web server:

[root@centoshost01 ~]# yum install httpd -y

[root@centoshost01 ~]# service httpd restart

[root@centoshost01 ~]# chkconfig httpd on

Also make sure 127.0.0.1 ip gets a ping response without it you will get an error to the plug-in installation.

[root@centoshost01 ~]# ping 127.0.0.1

**# Installing dependency:**

[root@centoshost01 ~]# yum install gcc unzip gd-devel make net-snmp perl

[root@centoshost01 ~]# yum install postfix mailx gcc make wget httpd php gcc glibc glibc-common openssl\* perl-Digest-HMAC perl-libwww-perl net-snmp-perl net-snmp-devel fontconfig-devel freetype-devel libjpeg-devel libpng-devel perl\*

[root@centoshost01 ~]# wget https://download-ib01.fedoraproject.org/pub/epel/8/Everything/x86\_64/Packages/e/epel-release-8-14.el8.noarch.rpm

[root@centoshost01 ~]# rpm -Uvh epel-release-8-14.el8.noarch.rpm

[root@centoshost01 ~]# wget http://vault.centos.org/centos/8/PowerTools/x86\_64/os/Packages/perl-Digest-SHA1-2.13-23.el8.x86\_64.rpm

[root@centoshost01 ~]# rpm -Uvh perl-Digest-SHA1-2.13-23.el8.x86\_64.rpm

[root@centoshost01 ~]# yum install perl-Net-SNMP

**# Create nagios user:**

[root@centoshost01 ~]# adduser nagios

[root@centoshost01 ~]# usermod -G nagios nagios

[root@centoshost01 ~]# groupadd nagcmd

[root@centoshost01 ~]# usermod -a -G nagcmd nagios

[root@centoshost01 ~]# usermod -a -G nagcmd apache

**# Installing Nagios server using tar:**

[root@centoshost01 ~]# wget <https://assets.nagios.com/downloads/nagioscore/releases/nagios-4.4.6.tar.gz> && tar -xvzf nagios-4.0.8.tar.gz && cd nagios-4.0.8 && ./configure --with-command-group=nagcmd && make all && make install && make install-init && make install-config && make install-commandmode && make install-webconf

[root@proweb nagios-4.0.8]# /usr/bin/install -c -m 775 -o nagios -g nagcmd -d /usr/local/nagios/var/rw

[root@proweb nagios-4.0.8]# chmod g+s /usr/local/nagios/var/rw

[root@proweb nagios-4.0.8]# /usr/bin/install -c -m 644 sample-config/httpd.conf /etc/httpd/conf.d/nagios.conf

**# Creating first web user for nagios:**

[root@centoshost01 nagios]# htpasswd -c /usr/local/nagios/etc/htpasswd.users nagiosadmin

password: 123456

[root@centoshost01 nagios]# service httpd reload

# Adding new users for nagios (if needed):

[root@centoshost01 nagios]# htpasswd /usr/local/nagios/etc/htpasswd.users mahidul

password: mahidul888

[root@centoshost01 nagios]# service httpd reload

**# Download and Install the nagios plugin:**

[root@centoshost01 ~]# wget <https://nagios-plugins.org/download/nagios-plugins-2.3.3.tar.gz> && tar xvzf nagios-plugins-2.0.3.tar.gz && cd nagios-plugins-2.0.3 && ./configure --with-nagios-user=nagios --with-nagios-group=nagios && make && make install

Install the snmp plugins from "http://nagios-snmp.cvs.sourceforge.net/nagios-snmp/plugins/":

[root@centoshost01 ~]# wget "http://nagios-snmp.cvs.sourceforge.net/viewvc/nagios-snmp/plugins/?view=tar"

[root@centoshost01 ~]# cd /usr/local/nagios/libexec/

[root@centoshost01 libexec]# wget http://nagios.manubulon.com/check\_snmp\_storage.pl && wget http://nagios.manubulon.com/check\_snmp\_int.pl && wget http://nagios.manubulon.com/check\_snmp\_process.pl && wget http://nagios.manubulon.com/check\_snmp\_load.pl && wget http://nagios.manubulon.com/check\_snmp\_vrrp.pl && wget http://nagios.manubulon.com/check\_snmp\_cpfw.pl && wget http://nagios.manubulon.com/check\_snmp\_mem.pl && wget http://nagios.manubulon.com/check\_snmp\_win.pl && wget http://nagios.manubulon.com/check\_snmp\_css.pl && wget http://nagios.manubulon.com/check\_snmp\_env.pl && wget http://nagios.manubulon.com/check\_snmp\_nsbox.pl && wget http://nagios.manubulon.com/check\_snmp\_boostedge.pl && wget http://nagios.manubulon.com/check\_snmp\_linkproof\_nhr.pl && wget https://github.com/willixix/WL-NagiosPlugins/blob/master/check\_uptime.pl && chmod 755 check\_snmp\*

Check your configuration if there are any errors:

[root@centoshost01 ~]# /usr/local/nagios/bin/nagios -v /usr/local/nagios/etc/nagios.cfg

If you see no errors reported, it's time to start it up. Issue the command:

[root@centoshost01 ~]# service nagios restart

[root@centoshost01 ~]# chkconfig nagios on

**Checkout if the plugins works properly:**

[root@centoshost01 ~]# cd /usr/local/nagios/libexec

[root@centoshost01 libexec]# ./check\_snmp\_mem.pl -H 192.168.168.20 -C public -N -w 90,20 -c 99,30

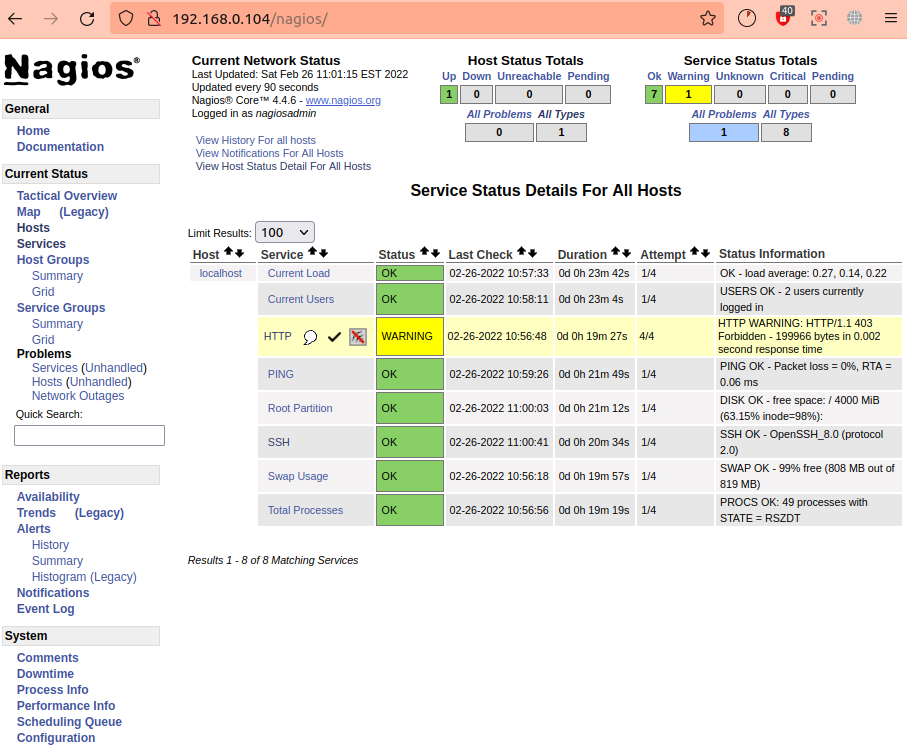
Ram : 19%, Swap : 0% : ; OK

Check the logs:

[root@centoshost01 ~]# tail -f /usr/local/nagios/var/nagios.log

Nagios is ready to go. Point your browser to:

<http://192.168.1.77/nagios>

****

# 

# Nagios advance configuration

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|| 4 || Nagios Backup and restoration procedure ||

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Nagios keeps it's log file to the "/usr/local/nagios/var/archives/" location. If we need to keep our backup we should backup "/usr/local/nagios/etc/mahidul\_config" and "/usr/local/nagios/var/archives/" folders and "/usr/local/nagios/etc/nagios.cfg" file. After reinstalling nagios we have to just replace these two folder and nagios.cfg file. Thats all. Its that simple.

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|| 5 || Nagios server configuration and add hosts ||

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[root@centoshost01 ~]# mkdir /usr/local/nagios/etc/mahidul\_config && chown nagios.nagios /usr/local/nagios/etc/mahidul\_config && chmod 755 /usr/local/nagios/etc/mahidul\_config && touch /var/log/nagios.log && chown nagios.nagios /var/log/nagios.log && chmod 755 /var/log/nagios.log

[root@centoshost01 ~]# vim /usr/local/nagios/etc/nagios.cfg

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

cfg\_dir=/usr/local/nagios/etc/mahidul\_config

#log\_file=/usr/local/nagios/var/nagios.log

log\_file=/var/log/nagios.log

[root@centoshost01 ~]# vim /usr/local/nagios/etc/mahidul\_config/new\_commands.cfg

#### Monitor HDD space / and /home partitions

define command {

command\_name check\_snmp\_storage

command\_line $USER1$/check\_snmp\_storage.pl -H $HOSTADDRESS$ -C public -m $ARG1$ -w $ARG2$ -c $ARG3$ $ARG4$

}

#### Monitor RAM

# Add command for services

define command {

command\_name check\_snmp\_mem2

command\_line $USER1$/check\_snmp\_mem.pl -H $HOSTADDRESS$ -2 -C public $ARG1$ -w $ARG2$ -c $ARG3$ $ARG4$

}

#### Monitor CPU uses and load avarage

define command {

command\_name check\_snmp\_load2

command\_line $USER1$/check\_snmp\_load.pl -H $HOSTADDRESS$ -T $ARG1$ -w $ARG2$ -c $ARG3$ -C $ARG4$

}

define command {

command\_name check\_snmp\_load3

command\_line $USER1$/check\_snmp\_load.pl -H $HOSTADDRESS$ -w $ARG1$ -c $ARG2$ -C public

}

#### Monitor Process mysql

define command{

command\_name check\_snmp\_process\_v2c\_d55

command\_line $USER1$/check\_snmp\_process.pl -F -H $HOSTADDRESS$ -2 -C public -n $ARG1$ -w $ARG2$ -c $ARG3$ -m $ARG4$ -u $ARG5$ -d 55

}

#### Monitor Process like httpd/apache2, squid, crond, mysql

define command{

command\_name check\_snmp\_process\_v1

command\_line $USER1$/check\_snmp\_process.pl -H $HOSTADDRESS$ -C public -n $ARG1$ -w $ARG2$ -c $ARG3$ $ARG4$

}

define command {

command\_name check\_snmp2

command\_line $USER1$/check\_snmp -H $HOSTADDRESS$ -C public -o $ARG1$

}

#### Monitor SSH connection

define command {

command\_name check\_ssh2

command\_line $USER1$/check\_ssh -H $HOSTADDRESS$ -p 22 # change the ssh port 22 as per your ssh config

}

### Check windows load

define command{

command\_name check\_win\_load

command\_line $USER1$/check\_snmp\_load.pl -H $HOSTADDRESS$ -C $ARG1$ $ARG2$ -T $ARG3$ -w $ARG4$ -c $ARG5$

}

### Check windows interface

define command{

command\_name check\_win\_int

command\_line $USER1$/check\_snmp\_netint.pl -H $HOSTADDRESS$ -C $ARG1$ $ARG2$ -n $ARG3$ -a -m -k -M -w $ARG4$ -c $ARG5$

}

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|| 5.1 || Add a Linux host using snmp ||

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[root@centoshost01 ~]# vim /usr/local/nagios/etc/mahidul\_config/linux\_host\_01.cfg

#### Copy this file and change the host names and the ip address

# ADD A HOST

define host{

use linux-server

host\_name linux\_host\_01

alias linux\_host\_01

address 192.168.1.77

}

# MONITORING DISK /

define service {

use generic-service

host\_name linux\_host\_01

service\_description DISK-/

check\_command check\_snmp\_storage!/ -r!10!8!-T pl #percent of free disk space

# check\_command check\_snmp\_storage!/ -r!90%!95%!-T pu #percent of uses disk space

}

# MONITORING RAM & SWAP /check\_snmp\_process.pl -H $HOSTADDRESS$ -C public -n $ARG1$ -w $ARG2$ -c $ARG3$ $ARG4$

define service {

use generic-service

host\_name linux\_host\_01

service\_description RAM

check\_command check\_snmp\_mem2!-N!94,60!97,80

}

# MONITORING CPU USES

define service {

use generic-service

host\_name linux\_host\_01

service\_description CPU uses

check\_command check\_snmp\_load2!netsc!90%!95%!public

}

# MONITORING LOAD AVERAGE

define service {

use generic-service

host\_name linux\_host\_01

service\_description Load avarage

check\_command check\_snmp\_load2!netsl!6,6,6!8,8,8!public

}

# MONITORING SSH

define service {

use generic-service

host\_name linux\_host\_01

service\_description SSH

check\_command check\_ssh

}

# MONITORING PROCESS HTTP

define service {

use generic-service

host\_name linux\_host\_01

service\_description Process\_http

# check\_command check\_snmp\_process\_v1!httpd!10,100!0!-2 -m 20,30 -u 90,99

check\_command check\_snmp\_process\_v1!httpd!2,100!0!

}

# MONITORING PROCESS CRON

define service {

use generic-service

host\_name linux\_host\_01

service\_description Process\_crond

check\_command check\_snmp\_process\_v1!cron!0!0

}

# MONITORING UPTIME

define service{

use generic-service

host\_name linux\_host\_01

service\_description Uptime

check\_command check\_snmp!-C public -o sysUpTime.0

}

# MONITORING PROCESS MYSQL

define service {

use generic-service

host\_name linux\_host\_01

service\_description Process\_mysql

check\_command check\_snmp\_process\_v1!mysqld!0!0

}

# MONITORING PROCESS MYSQL

#define service {

# use generic-service

# host\_name linux\_host\_01

# service\_description Process\_mysql

# check\_command check\_snmp\_process\_v2c\_d55!mysql!0,5!0,5!1000,1500!120,140!

# }

# MONITORING PROCESS PROXY

#define service {

# use generic-service

# host\_name linux\_host\_01

# service\_description Process\_Proxy

# check\_command check\_snmp\_process\_v1!squid!1,1999!0,2000!-2

# }

# MONITOR LOCAL POSTFIX

#define service{

# use generic-service

# host\_name linux\_host\_01

# service\_description Postfix

# check\_command check\_smtp

# }

# MONITOR LOCAL DOVECOT

#define service{

# use generic-service

# host\_name linux\_host\_01

# service\_description Dovecot

# check\_command check\_pop

# }

To add a another host just copy the linux\_host\_01.cfg file and rename it to something.cfg. Open the something.cfg and change the hostname and ip address easily as below-

[root@centoshost01 ~]# vim /usr/local/nagios/etc/mahidul\_config/something.cfg

:%s/linux\_host\_01/new\_host\_name/g

:%s/192.168.1.77/new\_ip\_address/g

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|| 5.2 || Add a Windows host using snmp ||

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[root@websrv libexec]# vim /usr/local/nagios/etc/progoti\_config/new\_commands.cfg

[root@app1 libexec]# vim /usr/local/nagios/etc/mahidul\_config/windows\_192.168.1.82.cfg

### Copy this file and change the host names and the ip address

# ADD A HOST

define host{

use linux-server

host\_name windows\_192.168.1.82

alias windows\_192.168.1.82

address 192.168.1.82

}

# MONITORING C-Drive

define service{

use generic-service

host\_name windows\_192.168.1.82

service\_description C-Drive

check\_command check\_snmp\_storage!^C:!80!90!

}

# MONITORING ALL DRIVES

define service{

use generic-service

host\_name windows\_192.168.1.82

service\_description C-Drive

check\_command check\_snmp\_storage!^[CDE]:!80!90!

}

# Create a service for monitoring Windows CPU load with SNMP

define service{

use generic-service ;Use generic-service template

host\_name windows\_192.168.1.82

service\_description CPU Uses ;Description of service

check\_command check\_win\_load!public!--v2c!stand!85!95 ;Command

}

## Does'nt work

# MONITORING LOAD AVERAGE

#define service {

# use generic-service

# host\_name windows\_192.168.1.82

# service\_description Load avarage

# check\_command check\_win\_load!netsl!6,6,6!8,8,8!public

# }

# MONITORING RAM MEMORY

define service {

use generic-service

host\_name windows\_192.168.1.82

service\_description RAM

check\_command check\_snmp\_storage!"^Physical Memory$"!80!85!

}

# MONITORING SWAP MEMORY

define service {

use generic-service

host\_name windows\_192.168.1.82

service\_description SWAP

check\_command check\_snmp\_storage!"^Virtual Memory$"!80!85!

}

# MONITORING PROCESS EXPLORER

define service {

use generic-service

host\_name windows\_192.168.1.82

service\_description Process\_explorer

check\_command check\_snmp\_process\_v1!explorer!0!0!

}

# MONITORING UPTIME

define service{

use generic-service

host\_name windows\_192.168.1.82

service\_description Uptime

check\_command check\_snmp!-C public -o sysUpTime.0

}

# Create a service for monitoring Windows C: disks with SNMP

define service{

use generic-service

host\_name sms

service\_description chk-win-disk

check\_command check\_win\_storage!public!--v2c!^[CDEFGHIJKLMNOPQRSTUVWXYZ]:!85!95

}

================================================

|| 5.3 || Add a Router/switch host using snmp ||

================================================

[root@app1 ~]# vim /usr/local/nagios/etc/mahidul\_config/router\_192.168.1.1.cfg

# ADD A HOST

define host{

use linux-server

host\_name banglalion\_192.168.1.1

alias banglalion\_192.168.1.1

address 192.168.1.1

}

# MONITORING RAM & SWAP

define service {

use generic-service

host\_name banglalion\_192.168.1.1

service\_description RAM

check\_command check\_snmp\_mem2!-N!94,60!97,80

}

# MONITORING CPU USES

define service {

use generic-service

host\_name banglalion\_192.168.1.1

service\_description CPU uses

check\_command check\_snmp\_load2!netsc!90%!95%!public

}

# MONITORING LOAD AVERAGE

define service {

use generic-service

host\_name banglalion\_192.168.1.1

service\_description Load avarage

check\_command check\_snmp\_load2!netsl!6,6,6!8,8,8!public

}

# MONITORING UPTIME

define service{

use generic-service

host\_name banglalion\_192.168.1.1

service\_description Uptime

check\_command check\_snmp!-C public -o sysUpTime.0

}

Restart the services:

[root@centoshost01 ~]# service snmpd restart

[root@centoshost01 ~]# service nagios restart

[root@centoshost01 ~]# service httpd restart

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|| 5.4 || Monitoring Cisco Routeres and switches ||

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[root@proweb plugins]# ./check\_snmp\_mem.pl -H 118.179.212.138 -C public -I -w 90% -c 98%

Processor:12%,I/O:52% : 16% : ; OK

[root@app1 ~]# vim /usr/local/nagios/etc/mahidul\_config/cisco\_router.cfg

# Define the switch that we'll be monitoring

define host{

use generic-switch ; Inherit default values from a template

host\_name cisco ; The name we're giving to this switch

alias Linksys SRW224P Switch ; A longer name associated with the switch

address 118.179.212.186 ; IP address of the switch

hostgroups routers ; Host groups this switch is associated with

}

# Create a new hostgroup for routers

define hostgroup{

hostgroup\_name routers ; The name of the hostgroup

alias Network Router/Switches ; Long name of the group

}

# Create a service to PING to switch

define service{

use generic-service ; Inherit values from a template

host\_name cisco ; The name of the host the service is associated with

service\_description PING ; The service description

check\_command check\_ping!200.0,20%!600.0,60% ; The command used to monitor the service

normal\_check\_interval 5 ; Check the service every 5 minutes under normal conditions

retry\_check\_interval 1 ; Re-check the service every minute until its final/hard state is determined

}

# Monitor uptime via SNMP

define service{

use generic-service ; Inherit values from a template

host\_name cisco

service\_description Uptime

check\_command check\_snmp!-C public -o sysUpTime.0

}

# Monitor Port 1 status via SNMP

define service{

use generic-service ; Inherit values from a template

host\_name cisco

service\_description Port 1 Link Status

check\_command check\_snmp!-C public -o ifOperStatus.1 -r 1 -m RFC1213-MIB

}

=========================================

|| 6.1 || Install SNMP client on Linux ||

=========================================

Install SNMP daemon and Utilities

[root@centoshost01 ~]# yum install net-snmp-utils net-snmp

Configure the SNMP service:

[root@centoshost01 ~]# mv /etc/snmp/snmpd.conf /etc/snmp/snmpd.conf.org

[root@centoshost01 ~]# vi /etc/snmp/snmpd.conf

rocommunity public

syslocation “DataCenter”

syscontact mahidul24@gmail.com

[root@centoshost01 ~]# service snmpd restart

[root@centoshost01 ~]# chkconfig snmpd on

Allow snmp port 161 from Firewall:

[root@centoshost01 ~]# iptables -I INPUT -s 192.168.1.0/24 -p tcp --dport 161 -j ACCEPT

[root@centoshost01 ~]# iptables -I INPUT -s 192.168.1.0/24 -p udp --dport 161 -j ACCEPT

[root@centoshost01 ~]# iptables -I FORWARD -s 192.168.1.0/24 -p tcp --dport 161 -j ACCEPT

[root@centoshost01 ~]# iptables -I FORWARD -s 192.168.1.0/24 -p udp --dport 161 -j ACCEPT

[root@centoshost01 ~]# /etc/init.d/iptables restart

Test with SNMPwalk:

[root@centoshost01 ~]# snmpwalk -v 1 -c public -O e 127.0.0.1

For Ubuntu based system:

icr@icr:~$ sudo apt-get update

icr@icr:~$ sudo apt-get install snmp snmp-mibs-downloader

============================================================

|| 6.2 || Install SNMP client on Windows host (windows 7) ||

============================================================

. open Control Panel and click on Programs and Features.

. click on "Turn Windows features on or off" link in the left pane. If UAC prompted, then click on Yes.

. in the Windows Features window, scroll down and select "Simple Network Management Protocol (SNMP)" check box and click on OK. Then, wait for some time to install SNMP.

. run > cmd > Services.msc

. scroll down in the right pane and right click on SNMP Services and select Properties. Then, click on Traps tab. Now, in the Community Name box, type the community name to which your computer will send trap messages and then click on "Add to list" button. Then, click on Apply and then OK.

. Security > add > Community: public > Right: read write > Accept SNMP packates from any host

. restart SNMP

. Also check the firewall and enable snmp reply from it.

-> Allow snmp in-bound firewall rules for tcp and udp

-> Allow snmp out-bound firewall rules for tcp and udp

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|| 6.3 || Enable snmp client from the router ||

===============================================

. Find the SERVICE > SNMP

. Set the community name: public

. Give your nagios server's ip address

. Allow 161 from the firewall

===============================================

|| 6.4 || Enable snmp client from the router ||

===============================================

Here we will configure SNMP Community Strings on a Router and a Cisco IOS Software-based XL Catalyst Switch.

Telnet to the router:

prompt#telnet 192.168.1.1

Enter the enable password at the prompt in order to enter the enable mode:

Router>enable

Password:

Router#

Router#show running-config ###Display the running configuration and look for the SNMP information:

Note: If no SNMP information is present, continue with these steps. If any SNMP commands are listed, you can modify or disable them. Go into the configuration mode:

Router#configure terminal

Router(config)#snmp-server community public RO ###where "public" is the Read-only community string.

# Router(config)#snmp-server community private RW ###where "private" is the Read-write community string.

Router(config)#exit

Router#write memory

Building configuration...

[OK]

Router#

Verify SNMP Community Strings

Router#show running-config

....

snmp-server community public RO

snmp-server community private RW

....

Router#show snmp

%SNMP agent not enabled

Exit out of the enable mode and return to the main prompt:

Router#disable

Router>

======================================================

|| 7 || Check the support plugins from below report ||

======================================================

Host type Interface storage load/cpu mem process env specific

Linux Yes Yes Yes Yes Yes No

Windows Yes Yes Yes Yes Yes No check\_snmp\_win.pl

Cisco router/switch Yes N/A Yes Yes N/A Yes

HP router/switch Yes N/A Yes Yes N/A No

Bluecoat proxy Yes snmp Yes snmp No Yes

CheckPoint on SPLAT Yes Yes Yes Yes Yes No check\_snmp\_cpfw.pl

CheckPoint on Nokia IP Yes Yes Yes No ?? No check\_snmp\_vrrp.pl

Boostedge Yes Yes Yes Yes ?? No check\_snmp\_boostedge.pl

AS400 Yes Yes Yes Yes No No

NetsecureOne Netbox Yes Yes Yes ?? Yes No

Radware Linkproof Yes N/A snmp snmp No No check\_snmp\_linkproof\_nhr

IronPort Yes snmp snmp snmp No Yes

Cisco CSS Yes ?? Yes Yes No ?? check\_snmp\_css.pl

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|| 8 || Alert Systems: ||

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Nagios is capable to provides many kinds of alert system. Here we have discussed three types of alert systems.

1. Enable sound alerts

2. Enable email alerts

3. Enable sms alerts

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|| 8.1 || Enable sound alerts: ||

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Download and install nagios cracker add-ons https://addons.mozilla.org/en-us/firefox/addon/nagios-checker/

Tools > add-ons > install the nagios cracker add-on

View > Toolbars > Add-on Bar >

Now we will find a nagios bar at the bottom right corner. Right click on it and go to the settings.

Nagios Systems >

Add new >

Name: nagios

Username: nagiosadmin

Passwrd: \*\*\*\*\*\*\*\*

Nagios web interface url: http://192.168.6.71/nagios/

Status script url: http://192.168.6.71/nagios/cgi-bin/status.cgi

==========================================

|| 8.2 || Enable mail notification: ||

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mahidul@nagios:~# yum install postfix mailx -y

mahidul@nagios:~# service postfix restart

mahidul@nagios:~# chkconfig postfix on

mahidul@nagios:~# vim /usr/local/nagios/etc/objects/contacts.cfg

define contact{

contact\_name nagiosadmin ; Short name of user

use generic-contact ; Inherit default values from generic-contact template (defined above)

alias Nagios Admin ; Full name of user

email raihan@progoti.com, mahidul@progoti.com, aman@progoti.com

service\_notification\_commands notify-service-by-email,notify-service-by-sms

host\_notification\_commands notify-host-by-email,notify-service-by-sms

}

Error:

------

[root@proweb libexec]# tail -f /var/log/nagios.log

[1414396309] wproc: stderr line 01: /bin/sh: /bin/mail: No such file or directory

[1414396309] wproc: stderr line 02: /usr/bin/printf: write error: Broken pipe

solution:

For redhat:

[root@proweb ~]# yum install mailutils

For Ubuntu:

[root@proweb ~]# yum install mailx

==========================================

|| 8.3|| Configure sms notification: ||

==========================================

To send sms alert from nagios we can choose two diffrent ways-

1. Using the API (from web address) from sms service's gateway (like- grameen phone, robi, warid etc.)

2. Using a handset connecting with the linux server

Here we have buy a web pertal (API) from our mobile company. They will provide us the below informations-

1. sms gateway server's URL

2. Authentic username and password for us

[root@websrv ~]# vim /usr/local/nagios/libexec/sms\_send.sh

#!/bin/bash

### SMS alert to Mahidul through airtel sms gateway

url1="http://192.168.168.30:53013/cgi-bin/sendsms?smsc=airtel&username=admin&password=admin@pr0g0t1@sms&to=8801675009723&from=16257&text="

url2="$@"

url2+=$(php -r "echo rawurlencode('$(sed "s/'/\\\\'/g" <<< )');")

url=$url1+$url2

wget -O- "$url"

### SMS alert to Aman vai through banglalink sms gateway

url3="http://192.168.168.30:53013/cgi-bin/sendsms?smsc=blink&username=admin&password=admin@pr0g0t1@sms&to=8801914153325&from=16257&text="

url4="$@"

url4+=$(php -r "echo rawurlencode('$(sed "s/'/\\\\'/g" <<< )');")

url=$url3+$url4

wget -O- "$url"

### SMS alert to Raihan vai through robi sms gateway

url5="http://cmp.robi.com.bd/WS/CMPWebService.asmx/SendTextMessage?Username=progoti&Password=Pro@goti007&From=8801833148693&To=01847150005&Message=";

url6="$@"

url6+=$(php -r "echo rawurlencode('$(sed "s/'/\\\\'/g" <<< )');")

url=$url5+$url6

wget -O- "$url"

[root@websrv ~]# chmod 755 /usr/local/nagios/libexec/sms\_send.sh

[root@websrv ~]# vim /usr/local/nagios/etc/mahidul\_config/new\_commands.cfg

# 'notify-service-by-sms' command definition

define command{

command\_name notify-service-by-sms

command\_line /usr/local/nagios/libexec/sms\_send.sh "--Nagios Service Notification-- Host: $HOSTNAME$, State: $HOSTSTATE$ Service $SERVICEDESC$ Description: $SERVICESTATE$ Time: $LONGDATETIME$"

}

# 'notify-host-by-sms' command definition

define command{

command\_name notify-host-by-sms

command\_line /usr/local/nagios/libexec/sms\_send.sh "--Nagios Host Notification-- Host: $HOSTNAME$, State: $HOSTSTATE$, Time: $LONGDATETIME$"

}

[root@gw1 ~]# vim /usr/local/nagios/etc/objects/contacts.cfg

define contact{

contact\_name nagiosadmin ; Short name of user

use generic-contact ; Inherit default values from generic-contact template (defined above)

alias Nagios Admin ; Full name of user

email systems@progoti.com, javeed@progoti.com

service\_notification\_commands notify-service-by-email,notify-service-by-sms

host\_notification\_commands notify-host-by-email,notify-service-by-sms

}

==================================================

|| 8.4|| Configure android mobile apps aNag: ||

==================================================

. Go to google play.

. Search for aNag app and install it.

. Now go to aNag app and select "allinstance update" and select "settings"

. Select "Nagios instance" and add a instance like below and save it.

Name:

CGI Directory:

Username:

Password:

. now enable the instance

. Now go back and select AutoUpdate. Select your suitable interval checking time from here.

. Now adjust the Notification style, ringtone, vivrate as per yourr equirements.

==================================================================

|| 9 || Create network structure graph and add icons ||

==================================================================

[root@websrv ~]# vim /usr/local/nagios/etc/progoti\_config/app1.cfg

define host{

use linux-server

host\_name app1

alias app1

address 192.168.1.20

parents ciscofw

icon\_image redhat.gif

icon\_image\_alt Linux Server

statusmap\_image redhat.gd2

}

Put the "redhat.gif" in the "/usr/local/nagios/share/images/logos/" directory.

[root@websrv ~]# cd /usr/local/nagios/share/images/logos/

And now check the graph from "Current Status" > "Map".

-----------------------------------------------------------------

| 10 | Apache server configuration |

-----------------------------------------------------------------

[root@proweb ~]# vim /etc/httpd/conf/httpd.conf

###################################################### nagios

### Enable HTTP Access

<VirtualHost nagios.surecash.net:80>

ServerAdmin mahidul@localhost

DocumentRoot /usr/local/nagios/share

ScriptAlias /cgi-bin "/usr/local/nagios/sbin"

ServerName nagios.surecash.net

ErrorLog logs/cacti-error\_log

CustomLog logs/cacti-access\_log common

</VirtualHost>

### Enable HTTPS Access

<VirtualHost nagios.surecash.net:443>

ServerAdmin mahidul@localhost

DocumentRoot /usr/local/nagios/share/

ScriptAlias /cgi-bin "/usr/local/nagios/sbin"

ServerName nagios.surecash.net

ErrorLog logs/cacti.surecashbd.com-error\_log

CustomLog logs/cacti.surecashbd.com-access\_log common

SSLEngine on

SSLCertificateFile /etc/ssl/sc\_crt/surecashbd.crt

SSLCertificateKeyFile /etc/ssl/sc\_crt/surecashbd.key

SSLCertificateChainFile /etc/ssl/sc\_crt/surecashbd.ca-bundle

SetEnvIf User-Agent ".\*MSIE.\*" nokeepalive ssl-unclean-shutdown

CustomLog logs/ssl\_request\_log "%t %h %{SSL\_PROTOCOL}x %{SSL\_CIPHER}x \"%r\" %b"

</VirtualHost>

-----------------------------------------------------------------

| 11. | Add another user for nagios access |

-----------------------------------------------------------------

[root@proweb ~]# vim /usr/local/nagios/etc/cgi.cfg

## Here determine how many acess you will provide the user

authorized\_for\_system\_information=nagiosadmin,user1

[root@proweb ~]# htpasswd -m /usr/local/nagios/etc/htpasswd.users user1

[root@proweb ~]# service httpd restart

# Add plugins for more service monitoring

Monitor Tomcat status - 100% works

----------------------------------

check the tomcat /manager/status page for excessive memory usage or an excessive number of threads in use.

Install dependency:

[root@gw ~]# yum install perl-XML-XPath perl-libwww-perl -y

1) Download check\_tomcat.pl from below link:

http://exchange.nagios.org/directory/Plugins/Java-Applications-and-Servers/Apache-Tomcat/check\_tomcat-2Epl/details

2) move the script to /usr/lib/nagios/plugins/ and provide execute permissions

# mv ~/Downloads/check\_tomcat.pl /usr/lib/nagios/plugins/

# chmod +x /usr/lib/nagios/plugins/check\_tomcat.pl

3) Define the script in commands

#/etc/nagios/objects/commands.cfg

and add the following lines.

#Check tomcat service

define command{

command\_name check\_tomcat

command\_line /bin/sh -c “$USER1$/check\_tomcat.pl -H $HOSTADDRESS$ -p $ARG1$ -l $ARG2$ -a $ARG3$ -w $ARG4$ -c $ARG5$”

}

we can use the command\_line variable as below. But sometimes you will get an error. So we can use “/bin/sh -c ” to avoid the error

command\_line $USER1$/check\_tomcat.pl -H $HOSTADDRESS$ -p $ARG1$ -l $ARG2$ -a $ARG3$ -w $ARG4$ -c $ARG5$

Check the status:

[root@gw libexec]# ./check\_tomcat.pl -H 192.168.1.10 -p 8080 -l tomcat -a tomcat@pr0g0t1

OK: memory in use 490 MiB (5418 MiB); threads[http-8080]=1(200);|used=514494136 free=5167411528 max=5681905664 currentThreadsBusy=1 currentThreadCount=49 maxThreads=200

4) For checking the tomcat service add the lines in services.cfg

}

define service{

use generic-service ; Inherit default values from a template

host\_name test-red1

service\_description Tomcat

check\_command check\_tomcat!8080!admin!admin!10%,50%!5%,10%

}

for more information about the options provided please type the following command

#/usr/lib/nagios/plugins/check\_tomcat.pl -help

5) check nagios configurations and restart

[root@gw ~]# /usr/local/nagios/bin/nagios -v /usr/local/nagios/etc/nagios.cfg

[root@gw ~]# nagios -v /etc/nagios/nagios.cfg

Total Warnings: 0

Total Errors: 0

Things look okay – No serious problems were detected during the pre-flight check

# service nagios restart

6) please check nagios service monitoring page for tomcat status

Troubleshoot:

error:

[1389517373] SERVICE ALERT: app2;Process\_Tomcat;WARNING;SOFT;1;WARNING: http://localhost:8080/manager/status?XML=true HTTP/1.1 401 Unauthorized

Solution:

# Monitor Tomcat's Applications status - 100% works

[root@su1 ~]# yum install lynx

[root@su1 ~]# vim /usr/local/nagios/etc/progoti\_config/new\_commands.cfg

## Check tomcat Webapps

define command{

command\_name check\_tomcat\_app

command\_line /usr/local/nagios/libexec/check\_tomcat\_app.sh $ARG1$ $ARG2$ $ARG3$

}

define service {

use generic-service

host\_name ussd

service\_description webapps\_examples

check\_command check\_tomcat\_app!"http://192.168.0.5:8080/manager/html/list"!Examples!tomcat:tomcat\_password

}

[root@su1 ~]# vim /usr/local/nagios/libexec/check\_tomcat\_app.sh

#!/bin/sh

# a webapp status check by looking the Tomcat Web Application Manager

# This script is Absolutely Free Software

MYURL=$1

MYSTRING=$2

MYAUTH=$3

# Return Values

RET\_OK="0"

RET\_WARN="1"

RET\_CRIT="2"

RET\_UNKN="3"

checkdata () {

VAL=`echo $2 | wc | awk '{print $2}'`

if [ $VAL -eq 0 ]; then

echo $1 is not set

exit $RET\_UNKN

fi

}

# MAIN

checkdata "Tomcat Web Application Manager URL" $MYURL

checkdata "Webapp Name" $MYSTRING

checkdata "Username:Password" $MYAUTH

# The "core" of this script is the next line...

STR=`export HOME=/tmp && /usr/bin/lynx -auth=$MYAUTH -dump "$MYURL" 2>&1 | grep $MYSTRING | head -1 | sed -e "s/.\*$MYSTRING//" | awk '{print $1}'`

case "$STR " in

"true ") echo "OK - $MYSTRING WebApp On"

exit $RET\_OK

;;

"false ") echo "ERROR - $MYSTRING WebApp Off"

exit $RET\_WARN

;;

" ") echo "ERROR - $MYSTRING WebApp Undeployed"

exit $RET\_CRIT

;;

" ") echo "UNKNOWN - $MYSTRING WebApp"

exit $RET\_UNKN

;;

esac;

[root@su1 ~]# chmod 755 /usr/local/nagios/libexec/check\_tomcat\_app.sh

# Reference

Great Site For SMS configuration:

http://www.sms-integration.com/how-to-send-alert-sms-from-nagios-110.html ### Works 100% tested my mahidul

http://matt.bottrell.com.au/archives/205-Nagios-2-way-alerting-via-SMS-Part-2.html ### send sms alert with handset

http://www.marcoach.nl/nagios-sms-notificaties/

http://www.lecentre.net/blog/archives/985

http://nagios.manubulon.com/

http://nagios.manubulon.com/snmp\_storage.html

http://nagios.manubulon.com/index\_commands.html#windows

http://exchange.nagios.org/directory/Plugins/Java-Applications-and-Servers/Apache-Tomcat/check\_tomcatSessions/details

Monitoring Oracle: http://www.giuseppeturri.it/NAGIOS\_CHECK\_ORACLE\_INSTALLATION\_GUIDE.pdf

http://www.logix.cz/michal/devel/nagios/

http://wiki.monitoring-fr.org/nagios/mise-en-place-complete-nagios-sur-rhel-5.4/supervision-nagios-snmp