INSTALL NAGIOS

I. Install Apache2 to Configure HTTP Server.

1. Install Apache2

        apt-get -y install apache2

  2. Configure Apache2

      vi /etc/apache2/conf-enabled/security.conf
    # line 25: change to ServerTokens Prod

      vi /etc/apache2/mods-enabled/dir.conf
            # line 2: add file name that it can access only with directory's name
            DirectoryIndex
    index.html index.htm

      vi /etc/apache2/apache2.conf
            # line 70: add to specify server name
            ServerName www.srv.world

      vi /etc/apache2/sites-enabled/000-default.conf
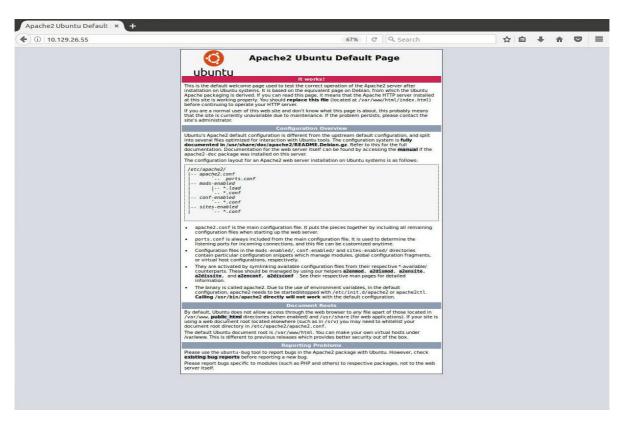   # line 11: change to webmaster's email
            ServerAdmin
            webmaster@srv.world
            systemctl restart apache2

3. Access to "http://(your server's hostname or IP address)/" with web browser. It's OK if following page is shown.

II. Configure Apache2 to use PHP scripts.

1. Install PHP

   apt-get -y install php php-cgi libapache2-mod-php php-common php-pear php-mbstring

   2. Configure Apache2

   a2enconf php7.0-cgi
           Enabling conf php7.0-cgi.
   To activate the new configuration, you need to run: service apache2 reload

   vi /etc/php/7.0/apache2/php.ini
           # line 912: uncomment and add your timezone
           date.timezone = "Asia/Kolkata"

   systemctl restart apache2

3. Create a PHP test page and access to it from any clients with web browser.

   ```
   vi /var/www/html/index.php
   <html>
           <body>
                   <?php
                           print Date("Y/m/d");
                   ?>
           </body>
   </html>
   ```

III Install Nagios

   apt-get -y install nagios3 nagios-plugins-basic

   # set admin password for Nagios Web admin console

IV. Configure Nagios

   vi /etc/nagios3/nagios.cfg

           # line 145: change
           check_external_commands=1

   vi /etc/nagios3/apache2.conf

           # line 40: change access permission
           # Allow From All
   Allow From localhost 10.0.0.0/24 vi

   /etc/init.d/nagios3

           # line 150: change like follows
           if check_config; then

        start_daemon -n $NICENESS -p $THEPIDFILE $DAEMON -d $NAGIOSCFG

        chmod o+rw /var/lib/nagios3/rw/nagios.cmd

    vi /etc/nagios3/conf.d/localhost_nagios2.cfg

        # line 22: comment out and add

        # all partitions are monitored by default but it's unnecessary all,

        # so change to specific pertition to monitor (the example below specify root partition)
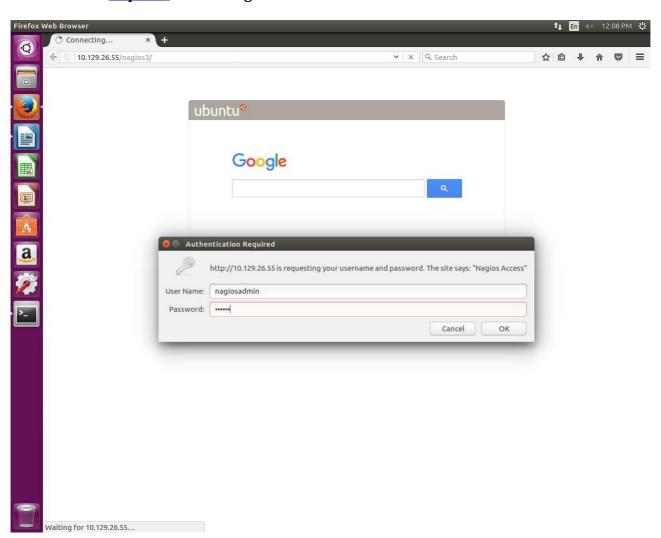
        # check_command check_all_disks!20%!10%

        check_command check_disk!20%!10%!/
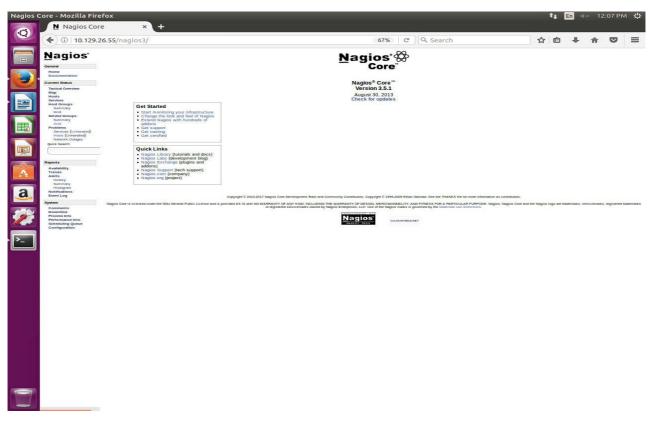
chgrp -R www-data /var/lib/nagios3 chmod 750
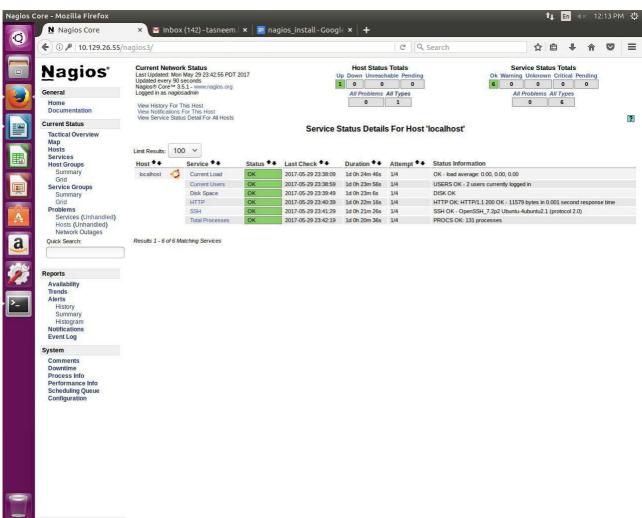
/var/lib/nagios3/rw systemctl restart nagios3

apache2

V. Access to <u>http://IP </u>address/nagios3/

VI. After successing authentication, the Nagios admin site is displayed.

Screenshot 1 — Nagios Core Home

Nagios Core - Mozilla Firefox

N Nagios Core

10.129.26.55/nagios3/

Nagios®

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Nagios® Core™

Nagios® Core™
Version 3.5.1
August 30, 2013
Check for updates

Get Started
• Start monitoring your infrastructure
• Change the look and feel of Nagios
• Extend Nagios with hundreds of addons
• Get support
• Get training
• Get certified

Quick Links
• Nagios Library (tutorials and docs)
• Nagios Labs (development blog)
• Nagios Exchange (plugins and addons)
• Nagios Support (tech support)
• Nagios.com (company)
• Nagios.org (project)

Screenshot 2 — Service Status Details For Host 'localhost'

Nagios Core - Mozilla Firefox

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10.129.26.55/nagios3/

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Current Network Status
Last Updated: Mon May 29 23:42:55 PDT 2017
Updated every 90 seconds
Nagios® Core™ 3.5.1 - www.nagios.org
Logged in as *nagiosadmin*

View History For This Host
View Notifications For This Host
View Service Status Detail For All Hosts

Host Status Totals

Up	Down	Unreachable	Pending
1	0	0	0

All Problems	All Types
0	1

Service Status Totals

Ok	Warning	Unknown	Critical	Pending
6	0	0	0	0

All Problems	All Types
0	6

Service Status Details For Host 'localhost'

Limit Results: 100

Host	Service	Status	Last Check	Duration	Attempt	Status Information
localhost	Current Load	OK	2017-05-29 23:38:09	1d 0h 24m 46s	1/4	OK - load average: 0.00, 0.00, 0.00
	Current Users	OK	2017-05-29 23:38:59	1d 0h 23m 56s	1/4	USERS OK - 2 users currently logged in
	Disk Space	OK	2017-05-29 23:39:49	1d 0h 23m 6s	1/4	DISK OK
	HTTP	OK	2017-05-29 23:40:39	1d 0h 22m 16s	1/4	HTTP OK: HTTP/1.1 200 OK - 11579 bytes in 0.001 second response time
	SSH	OK	2017-05-29 23:41:29	1d 0h 21m 26s	1/4	SSH OK - OpenSSH_7.2p2 Ubuntu-4ubuntu2.1 (protocol 2.0)
	Total Processes	OK	2017-05-29 23:42:19	1d 0h 20m 36s	1/4	PROCS OK: 131 processes

Results 1 - 6 of 6 Matching Services

NOTIFICATION SETTINGS

I. Refer Configuration of Postfix to send mails using gmail

https://github.com/fresearchgroup/IP-based-hardware-infrastructure-management-for-cloud/blob/master/Installation/PostfixConfiguration.pdf

II.Set notification recipients. And aldo Nagios sends notifications with mail command, so install it.

```
        vi /etc/nagios3/conf.d/contacts_nagios2.cfg
 # line 26: set recipient email address  email
 root@localhost
        systemctl restart nagios3
```

III.It's possible to change notification setting on Nagios admin site.

Login to it and click "Services", then services list is displayed. The icons which are displayed near a service name are just the one which notification is disabled.To enable notification on a service, click service name first. Click "Enable notifications for this service". Click "commit" button.

IV.If notification is enabled and a service has some troubles, the notification like follows are sent to the recipients you set.

SET THRESHOLDS

I The thresholds are set in configuration file by default. For example, the item for monitoring disk usage of root partition is set like follows.

```
        vi /etc/nagios3/conf.d/localhost_nagios2.cfg
        # 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.
        # the thresholds are set as Warning if > 20% free, critical if 10% > 10% free
 # change these values if you'd like to change them  define
 service{
        use                     generic-service
         host_name                  localhost
        service_description        Disk Space
        check_command              check_all_disks!20%!10%
        }
```

IIFor the case you add a new plugin and configure for it all, set like follows.

```
        # display options for a plugin
        /usr/lib/nagios/plugins/check_ntp_time -h
        ...
        ...
         -w, --warning=THRESHOLD
           Offset to result in warning status (seconds)
         -c, --critical=THRESHOLD
```

```
                ...
                ...


# add definition of command for a plugin with thresholds' options  vi

/etc/nagios3/commands.cfg
# add follows to the end define
command{
                command_name      check_ntp_time
                command_line      $USER1$/check_ntp_time -H $ARG1$ -w $ARG2$ -c $ARG3$
                }

# add definition of service with thresholds' values  vi
/etc/nagios3/conf.d/localhost_nagios2.cfg
        # add follows to the end ( Warning if it has 1 sec time difference, Critical if it has 2 sec )

        define service{
            use                   generic-service
            host_name              localhost
            service_description    NTP_TIME
            check_command           check_ntp_time!ntp1.jst.mfeed.ad.jp!1!2
            }

        systemctl restart nagios3
```

III. The notification is sent if a system value is over the threshold.

ADD MONITORING TARGET ITEM

I.Many plugins are provided with packages like follows.

        apt-get search nagios-plugins-

II.For example, add check_ntp plugin to monitor time difference between the system and NTP server.

```
        vi /etc/nagios3/commands.cfg
# add follows to the end define
command{
        command_name      check_ntp_time
        command_line      $USER1$/check_ntp_time -H $ARG1$ -w $ARG2$ -c $ARG3$
        }

        vi /etc/nagios3/conf.d/localhost_nagios2.cfg
# add follows to the end ( Warning if it has 1 sec time difference, Critical if it has 2 sec )  define
service{
        use                       generic-service
         host_name                 localhost
        service_description         NTP_TIME
        check_command             check_ntp_time!ntp1.jst.mfeed.ad.jp!1!2
        }
```

systemctl restart nagios3

III.It's possible to view the status for a new plugin on the admin site.

ADD MONITORING TARGET HOST#1

I Add a server for monitoring target with simply Ping command.

```
        vi /etc/nagios3/conf.d/node01.cfg
# create new  define host{
                use                     generic-host
                host_name               node01
                alias                   node01
                address                 10.0.0.51
                }
                define service{
                use                     generic-service
                host_name               node01
                service_description     PING
                check_command            check_ping!100.0,20%!500.0,60%
                }

        systemctl restart nagios3
```

II. View the status for a new server on the admin site

Add Monitoring Target Host#2 (Ubuntu)

I. Install nrpe on a target host you'd like to monitor services on it.

```
apt-get -y install nagios-nrpe-server  vi
/etc/nagios/nrpe.cfg
        # line 81: add access permission (specify Nagios server)
# line 221: comment out and add command[check_users]=/usr/lib/nagios/plugins/check_users -w
5 -c 10
        command[check_load]=/usr/lib/nagios/plugins/check_load -w 15,10,5 -c 30,25,20
#command[check_hda1]=/usr/lib/nagios/plugins/check_disk -w 20% -c 10% -p /dev/hda1
command[check_disk]=/usr/lib/nagios/plugins/check_disk -w 20% -c 10% -p /
command[check_zombie_procs]=/usr/lib/nagios/plugins/check_procs -w 5 -c 10 -s Z
command[check_total_procs]=/usr/lib/nagios/plugins/check_procs -w 150 -c 200   systemctl
restart nagios-nrpe-server
```

II.Configure Nagios server.
```
apt-get -y install nagios-nrpe-plugin  vi
/etc/nagios3/conf.d/node01.cfg  systemctl
restart nagios3
```

III.View the status for a new server on the admin site.

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Current Network Status
Last Updated: Tue May 30 05:51:19 PDT 2017
Updated every 90 seconds
Nagios® Core™ 3.5.1 - www.nagios.org
Logged in as *nagiosadmin*

View History For all hosts
View Notifications For All Hosts
View Host Status Detail For All Hosts

Host Status Totals
Up	Down	Unreachable	Pending
3	0	0	0

All Problems All Types
| 0 | 3 |

Service Status Totals
Ok	Warning	Unknown	Critical	Pending
11	0	0	2	0

All Problems All Types
| 2 | 13 |

[?]

Service Status Details For All Hosts

Limit Results: [100 ▾]

Host ▲▼	Service ▲▼	Status ▲▼	Last Check ▲▼	Duration ▲▼	Attempt ▲▼	Status Information
localhost	Current Load	OK	2017-05-30 05:48:20	0d 6h 21m 57s	1/4	OK - load average: 0.04, 0.07, 0.10
	Current Users	OK	2017-05-30 05:49:29	0d 6h 21m 7s	1/4	USERS OK - 2 users currently logged in
	Disk Space	OK	2017-05-30 05:47:00	0d 6h 7m 17s	1/4	DISK OK
	HTTP	OK	2017-05-30 05:46:47	0d 6h 19m 27s	1/4	HTTP OK: HTTP/1.1 200 OK - 11579 bytes in 0.001 second response time
	SSH	OK	2017-05-30 05:47:57	0d 6h 18m 37s	1/4	SSH OK - OpenSSH_7.2p2 Ubuntu-4ubuntu2.1 (protocol 2.0)
	Total Processes	OK	2017-05-30 05:50:00	0d 6h 17m 47s	1/4	PROCS OK: 205 processes
mayank_vm	Current Load	OK	2017-05-30 05:49:52	0d 2h 26m 27s	1/4	OK - load average: 0.04, 0.01, 0.00
	Current Users	OK	2017-05-30 05:49:01	0d 2h 27m 18s	1/4	USERS OK - 1 users currently logged in
	PING	OK	2017-05-30 05:48:24	0d 2h 59m 8s	1/4	PING OK - Packet loss = 0%, RTA = 0.43 ms
	Root Partition	OK	2017-05-30 05:46:20	0d 2h 29m 59s	1/4	DISK OK - free space: / 30723 MB (86% inode=90%):
	Total Processes 💬 ✓	CRITICAL	2017-05-30 05:49:06	0d 3h 22m 13s	4/4	PROCS CRITICAL: 201 processes
server	IPMI 💬 ✓	CRITICAL	2017-05-30 05:50:15	0d 3h 21m 4s	4/4	IPMI Status: Critical [82 system event log (SEL) entries present]
	PING	OK	2017-05-30 05:46:24	0d 5h 34m 27s	1/4	PING OK - Packet loss = 0%, RTA = 1.12 ms

Results 1 - 13 of 13 Matching Services