ADVANCE DEVOPS EXP-10

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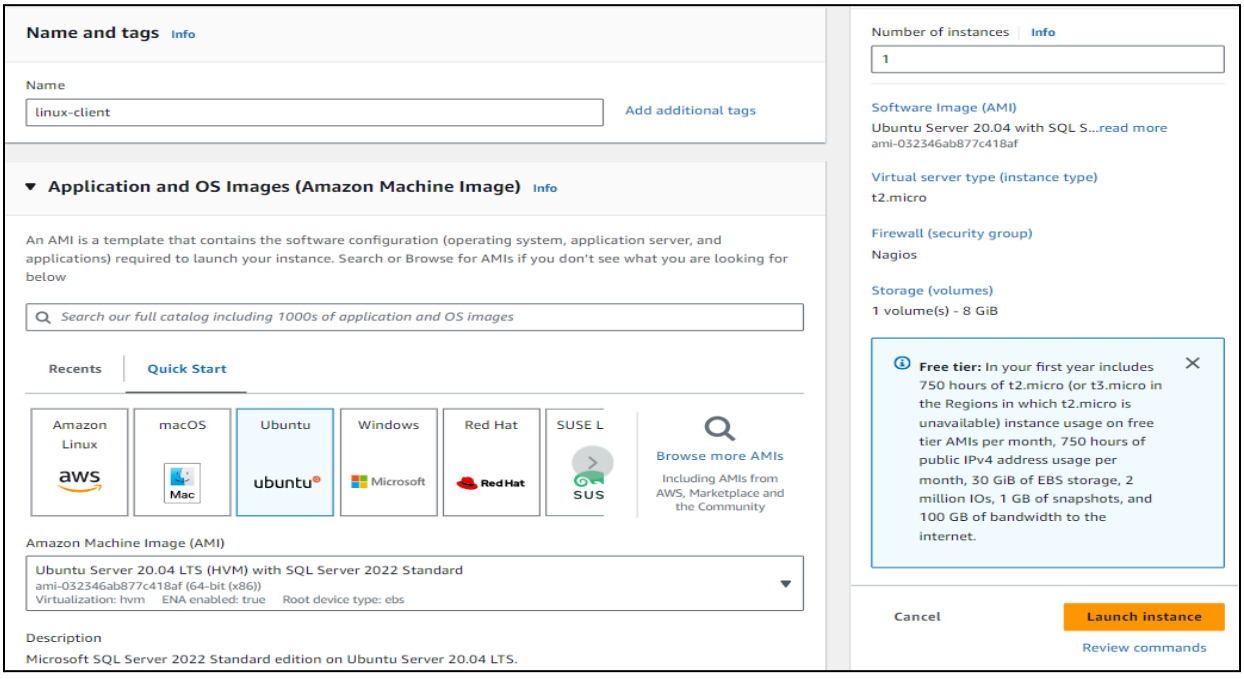
Aim: To perform Port, Service monitoring, Windows/Linux server monitoring using Nagios.

Step-1. Confirm Nagios is Running on the Server. sudo systemctl status nagios Proceed if you see that Nagios is active and running.

```
[ec2-user@ip-172-31-90-152 nagios-plugins-2.3.3]$ cd
[ec2-user@ip-172-31-90-152 ~]$ sudo systemctl restart nagios
[ec2-user@ip-172-31-90-152 ~]$ sudo systemctl status nagios
● nagios.service - Nagios Core 4.5.5
     Loaded: loaded (/usr/lib/systemd/system/nagios.service; enabled; preset: disabled)
     Active: active (running) since Mon 2024-09-30 19:41:36 UTC; 7s ago
       Docs: https://www.nagios.org/documentation
    Process: 80238 ExecStartPre=/usr/local/nagios/bin/nagios -v /usr/local/nagios/etc/nagios.cfg (code=exited, status=0/SUCCESS)
    Process: 80239 ExecStart=/usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/nagios.cfg (code=exited, status=0/SUCCESS)
   Main PID: 80240 (nagios)
      Tasks: 6 (limit: 1112)
     Memory: 4.0M
        CPU: 15ms
     CGroup: /system.slice/nagios.service
             ├─80240 /usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/nagios.cfg
             ├─80241 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
             ├─80242 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
             ├─80243 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
             ├─80244 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
             └─80245 /usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/nagios.cfg

Sep 30 19:41:36 ip-172-31-90-152.ec2.internal nagios[80240]: qh: Socket '/usr/local/nagios/var/rw/nagios.qh' successfully initialized
Sep 30 19:41:36 ip-172-31-90-152.ec2.internal nagios[80240]: qh: core query handler registered
Sep 30 19:41:36 ip-172-31-90-152.ec2.internal nagios[80240]: qh: echo service query handler registered
Sep 30 19:41:36 ip-172-31-90-152.ec2.internal nagios[80240]: qh: help for the query handler registered
Sep 30 19:41:36 ip-172-31-90-152.ec2.internal nagios[80240]: wproc: Successfully registered manager as @wproc with query handler
Sep 30 19:41:36 ip-172-31-90-152.ec2.internal nagios[80240]: wproc: Registry request: name=Core Worker 80244;pid=80244
Sep 30 19:41:36 ip-172-31-90-152.ec2.internal nagios[80240]: wproc: Registry request: name=Core Worker 80243;pid=80243
Sep 30 19:41:36 ip-172-31-90-152.ec2.internal nagios[80240]: wproc: Registry request: name=Core Worker 80242;pid=80242
Sep 30 19:41:36 ip-172-31-90-152.ec2.internal nagios[80240]: wproc: Registry request: name=Core Worker 80241;pid=80241
Sep 30 19:41:36 ip-172-31-90-152.ec2.internal nagios[80240]: Successfully launched command file worker with pid 80245
```

Step-2. Create an Ubuntu 20.04 Server EC2 Instance



Step-3: Verify Nagios Process on the Server

```
[ec2-user@ip-172-31-80-215 nagios-plugins-2.3.3]$ ps -ef | grep nagios
nagios     68654       1  0 20:29 ?        00:00:00 /usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/nagios.cfg
nagios     68655   68654  0 20:29 ?        00:00:00 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
nagios     68656   68654  0 20:29 ?        00:00:00 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
nagios     68657   68654  0 20:29 ?        00:00:00 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
nagios     68658   68654  0 20:29 ?        00:00:00 /usr/local/nagios/bin/nagios --worker /usr/local/nagios/var/rw/nagios.qh
nagios     68659   68654  0 20:29 ?        00:00:00 /usr/local/nagios/bin/nagios -d /usr/local/nagios/etc/nagios.cfg
ec2-user   69588   26447  0 20:44 pts/0    00:00:00 grep --color=auto nagios
[ec2-user@ip-172-31-80-215 nagios-plugins-2.3.3]$
```

Step-4: Become Root User and Create Directories-
sudo su , mkdir -p /usr/local/nagios/etc/objects/monitorhosts/linuxhosts
and to copy the same config file- cp /usr/local/nagios/etc/objects/localhost.cfg, /usr/local/nagios/etc/objects/monitorhosts/linuxhosts/linuxserver.cfg

```
[ec2-user@ip-172-31-80-215 nagios-plugins-2.3.3]$ sudo su
[root@ip-172-31-80-215 nagios-plugins-2.3.3]# mkdir -p /usr/local/nagios/etc/objects/monitorhosts/linuxhosts
[root@ip-172-31-80-215 nagios-plugins-2.3.3]# cp /usr/local/nagios/etc/objects/localhost.cfg
cp: missing destination file operand after '/usr/local/nagios/etc/objects/localhost.cfg'
Try 'cp --help' for more information.
[root@ip-172-31-80-215 nagios-plugins-2.3.3]# cp /usr/local/nagios/etc/objects/localhost.cfg /usr/local/nagios/etc/objects/monitorhosts/linuxhosts/linuxserver.cfg
[root@ip-172-31-80-215 nagios-plugins-2.3.3]#
```

i-0ae1aae975bae3b7a (nagios-host)

Step-5: Edit the Configuration File
sudo nano /usr/local/nagios/etc/objects/monitorhosts/linuxhosts/linuxserver.cfg

- Change hostname to linuxserver everywhere in the file
- Change address to the public IP address of your linux-client.
- Change host_group name under hostgroup to linux_server

```
##############################################################################
#
# 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               linuxserver
    alias                   linuxserver
    address                 35.174.139.220
}

##############################################################################
#
# HOST GROUP DEFINITION
#
##############################################################################

# Define an optional hostgroup for Linux machines

define hostgroup {

    hostgroup_name          linux-servers1          ; The name of the hostgroup
    alias                   Linux Servers           ; Long name of the group
    members                 localhost               ; Comma separated list of hosts that belong to this group
}
                                                                                [ Read 157 lines ]
^G Help          ^O Write Out     ^W Where Is      ^K Cut           ^T Execute       ^C Location      M-U Undo         M-A Set Mark     M-] To
^X Exit          ^R Read File     ^\ Replace       ^U Paste         ^J Justify       ^/ Go To Line    M-E Redo         M-6 Copy         ^Q Wher
```

Step-6: Update Nagios Configuration

sudo nano /usr/local/nagios/etc/nagios.cfg

Add the command - cfg_dir=/usr/local/nagios/etc/objects/monitorhosts/

```
# Definitions for monitoring a network printer
#cfg_file=/usr/local/nagios/etc/objects/printer.cfg


# You can also tell Nagios to process all config files (with a .cfg
# extension) in a particular directory by using the cfg_dir
# directive as shown below:

#cfg_dir=/usr/local/nagios/etc/servers
#cfg_dir=/usr/local/nagios/etc/printers
#cfg_dir=/usr/local/nagios/etc/switches
#cfg_dir=/usr/local/nagios/etc/routers
cfg_dir=/usr/local/nagios/etc/objects/monitorhosts/
```

Step-7: Verify Configuration Files

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

```
[ec2-user@ip-172-31-80-215 ~]$ sudo /usr/local/nagios/bin/nagios -v /usr/local/nagios/etc/nagios.cfg

Nagios Core 4.4.6
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Last Modified: 2020-04-28
License: GPL

Website: https://www.nagios.org
Reading configuration data...
   Read main config file okay...
Warning: Duplicate definition found for service 'HTTP' on host 'localhost' (config file '/usr/local/nagios/etc/objects/localhost.cfg'
Warning: Duplicate definition found for service 'SSH' on host 'localhost' (config file '/usr/local/nagios/etc/objects/localhost.cfg',
Warning: Duplicate definition found for service 'Swap Usage' on host 'localhost' (config file '/usr/local/nagios/etc/objects/localhos
Warning: Duplicate definition found for service 'Current Load' on host 'localhost' (config file '/usr/local/nagios/etc/objects/localh
Warning: Duplicate definition found for service 'Total Processes' on host 'localhost' (config file '/usr/local/nagios/etc/objects/loc
Warning: Duplicate definition found for service 'Current Users' on host 'localhost' (config file '/usr/local/nagios/etc/objects/local
Warning: Duplicate definition found for service 'Root Partition' on host 'localhost' (config file '/usr/local/nagios/etc/objects/loca
Warning: Duplicate definition found for service 'PING' on host 'localhost' (config file '/usr/local/nagios/etc/objects/localhost.cfg'
   Read object config files okay...

Running pre-flight check on configuration data...

Checking objects...
       Checked 8 services.
       Checked 2 hosts.
       Checked 2 host groups.
       Checked 0 service groups.
       Checked 1 contacts.
       Checked 1 contact groups.
       Checked 24 commands.
       Checked 5 time periods.
       Checked 0 host escalations.
       Checked 0 service escalations.
Checking for circular paths...
       Checked 2 hosts
       Checked 0 service dependencies
       Checked 0 host dependencies
       Checked 5 timeperiods
Checking global event handlers...
Checking obsessive compulsive processor commands...
Checking misc settings...

Total Warnings: 0
Total Errors:   0
```

Step-8: Restart Nagios Service
sudo systemctl restart nagios

Step-9:. SSH into the Client Machine
Use SSH or EC2 Instance Connect to access the `linux-client`.

Step-10: Update Package Index and Install Required Packages
sudo apt update -y
sudo apt install gcc -y
sudo apt install -y nagios-nrpe-server nagios-plugins

```
ubuntu@ip-172-31-86-24:~$ sudo apt update -y
sudo apt install gcc -y
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Packages [15.0 MB]
Get:5 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:6 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [380 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe Translation-en [5982 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Components [3871 kB]
Get:9 http://security.ubuntu.com/ubuntu noble-security/main Translation-en [83.1 kB]
Get:10 http://security.ubuntu.com/ubuntu noble-security/main amd64 c-n-f Metadata [4560 B]
Get:11 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Packages [274 kB]
Get:12 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 c-n-f Metadata [301 kB]
Get:13 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 Packages [269 kB]
Get:14 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse Translation-en [118 kB]
Get:15 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 Components [35.0 kB]
Get:16 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 c-n-f Metadata [8328 B]
Get:17 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [535 kB]
Get:18 http://security.ubuntu.com/ubuntu noble-security/universe Translation-en [116 kB]
Get:19 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main Translation-en [130 kB]
Get:20 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 c-n-f Metadata [8652 B]
Get:21 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [379 kB]
```

Step-11: Edit NRPE Configuration File

Commands -
sudo nano /etc/nagios/nrpe.cfg
Add your Nagios host IP address under `allowed_hosts:`
`allowed_hosts=<Nagios_Host_IP>`

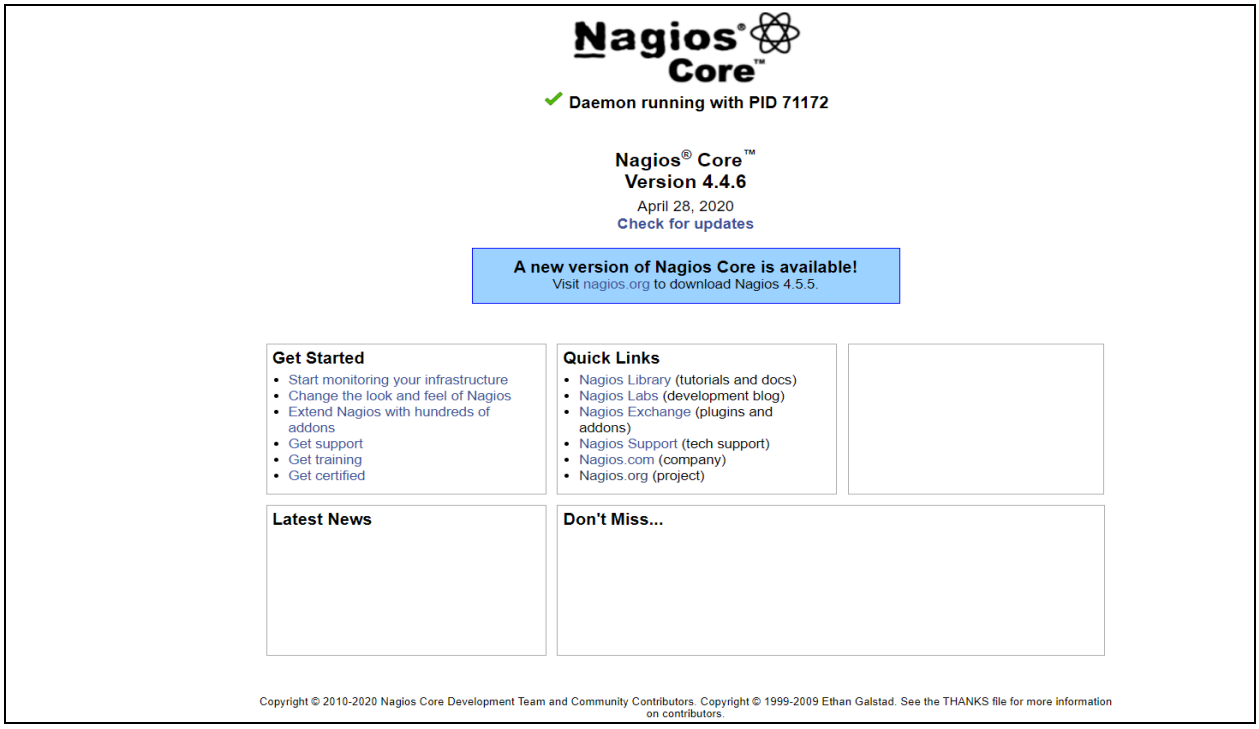
```
#
# Note: The daemon only does rudimentary checking of the client's IP
# address.  I would highly recommend adding entries in your /etc/hosts.allow
# file to allow only the specified host to connect to the port
# you are running this daemon on.
#
# NOTE: This option is ignored if NRPE is running under either inetd or xinetd

allowed_hosts=127.0.0.1,35.174.139.220



# COMMAND ARGUMENT PROCESSING
# This option determines whether or not the NRPE daemon will allow clients
# to specify arguments to commands that are executed.  This option only works
# if the daemon was configured with the --enable-command-args configure script
# option.
#
# *** ENABLING THIS OPTION IS A SECURITY RISK! ***
# Read the SECURITY file for information on some of the security implications
# of enabling this variable.
#
# Values: 0=do not allow arguments, 1=allow command arguments

dont_blame_nrpe=0
```

Step-12: Restart NRPE Server

Commands -
sudo systemctl restart nagios-nrpe-server

Step-13: Check Nagios Dashboard

Open your browser and navigate to http://<Nagios_Host_IP>/nagios.
Log in with nagiosadmin and the password you set earlier.
You should see the new host linuxserver added.
Click on Hosts to see the host details.
Click on Services to see all services and ports being monitored


Nagios Core
Daemon running with PID 71172
Nagios® Core™
Version 4.4.6
April 28, 2020
Check for updates
A new version of Nagios Core is available!
Visit nagios.org to download Nagios 4.5.5.
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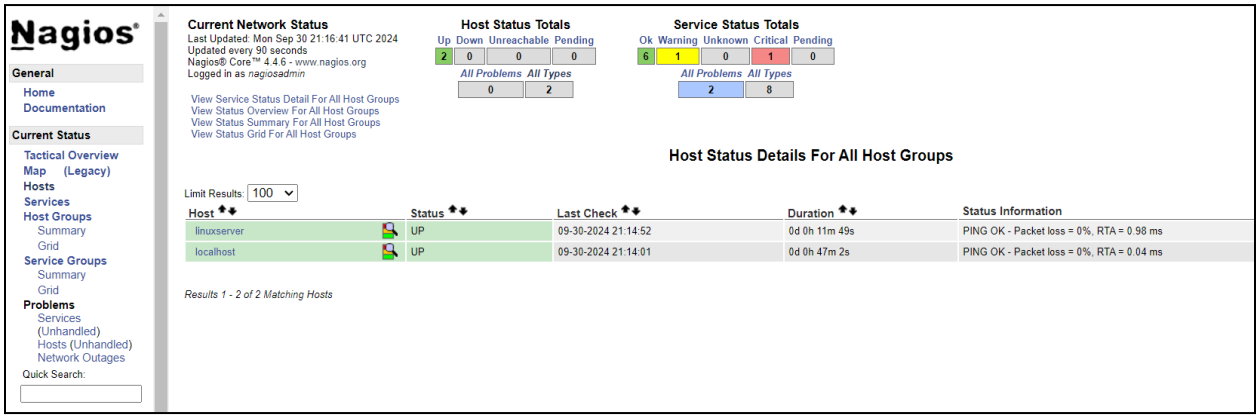
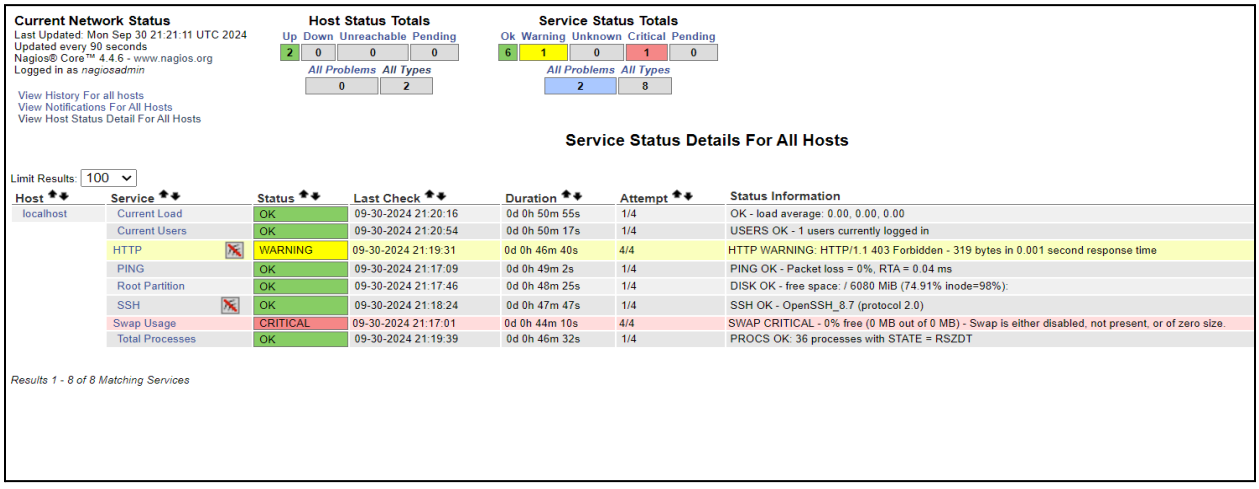

Nagios
General
Home
Documentation
Current Status
Tactical Overview
Map (Legacy)
Hosts
Services
Host Groups
Summary
Grid
Service Groups
Summary
Grid
Problems
Services (Unhandled)
Hosts (Unhandled)
Network Outages
Quick Search:
Current Network Status
Last Updated: Mon Sep 30 21:16:41 UTC 2024
Updated every 90 seconds
Nagios® Core™ 4.4.6 - www.nagios.org
Logged in as nagiosadmin
View Service Status Detail For All Host Groups
View Status Overview For All Host Groups
View Status Summary For All Host Groups
View Status Grid For All Host Groups
Host Status Totals
Up Down Unreachable Pending
2 0 0 0
All Problems All Types
0 2
Service Status Totals
Ok Warning Unknown Critical Pending
6 1 0 1 0
All Problems All Types
2 8
Host Status Details For All Host Groups
Limit Results: 100
Host
Status
Last Check
Duration
Status Information
linuxserver
UP
09-30-2024 21:14:52
0d 0h 11m 49s
PING OK - Packet loss = 0%, RTA = 0.98 ms
localhost
UP
09-30-2024 21:14:01
0d 0h 47m 2s
PING OK - Packet loss = 0%, RTA = 0.04 ms
Results 1 - 2 of 2 Matching Hosts


Current Network Status
Last Updated: Mon Sep 30 21:21:11 UTC 2024
Updated every 90 seconds
Nagios® Core™ 4.4.6 - 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
2 0 0 0
All Problems All Types
0 2
Service Status Totals
Ok Warning Unknown Critical Pending
6 1 0 1 0
All Problems All Types
2 8
Service Status Details For All Hosts
Limit Results: 100
Host
Service
Status
Last Check
Duration
Attempt
Status Information
localhost
Current Load
OK
09-30-2024 21:20:16
0d 0h 50m 55s
1/4
OK - load average: 0.00, 0.00, 0.00
Current Users
OK
09-30-2024 21:20:54
0d 0h 50m 17s
1/4
USERS OK - 1 users currently logged in
HTTP
WARNING
09-30-2024 21:19:31
0d 0h 46m 40s
4/4
HTTP WARNING: HTTP/1.1 403 Forbidden - 319 bytes in 0.001 second response time
PING
OK
09-30-2024 21:17:09
0d 0h 49m 2s
1/4
PING OK - Packet loss = 0%, RTA = 0.04 ms
Root Partition
OK
09-30-2024 21:17:46
0d 0h 48m 25s
1/4
DISK OK - free space: / 6080 MiB (74.91% inode=98%):
SSH
OK
09-30-2024 21:18:24
0d 0h 47m 47s
1/4
SSH OK - OpenSSH_8.7 (protocol 2.0)
Swap Usage
CRITICAL
09-30-2024 21:17:01
0d 0h 44m 10s
4/4
SWAP CRITICAL - 0% free (0 MB out of 0 MB) - Swap is either disabled, not present, or of zero size.
Total Processes
OK
09-30-2024 21:19:39
0d 0h 46m 32s
1/4
PROCS OK: 36 processes with STATE = RSZDT
Results 1 - 8 of 8 Matching Services