Name → Aveek Sinha      Roll No → 709

Reg. No → 11904710

**Q1.)** What is Configuration Management ? Why there is need of Configuration Management ?

**Ans → * **Configuration Management is a systems engineering process for establishing consistency of a product's attributes throughout its life. In the technology world, configuration management is an IT management process that tracks individual configuration items of an IT system.

* It Sometime, referred as an IT automation. Most configuration management involves a high degree of automation to achieve these goals. This is why teams use different tools like Puppet, Ansible, Terraform and other configuration management tools.

* By using automation, it's easier to build in checks and redundancies, improving the potential for omissions due to human error and the accuracy for keeping assets in the desired state.

"You can pay me now, or you can pay me later".

This quote applies well to configuration management and it describe the need of it.

1.> Reduced risks of outages and security breaches through visibility and tracking of the changes to your System.

2.> Cost Reduction by having detailed knowledge of all the elements of your configuration, avoiding wasteful elements.

3.> Improving experience for our customers and internal staff by rapidly detecting and correcting improper Configurations.

4.> Strict control of your process by defining and enforcing formal policies and procedures that govern asset identification, status, monitoring and auditing.

5.> efficient change movement by knowing our baseline configuration, and having the visibility to design changes.

6.> Better Release management and clear status accounting.

```
done!
update-alternatives: using /var/lib/mecab/dic/ipadic-utf8 to provide /var/lib/m
cab/dic/debian (mecab-dictionary) in auto mode
Setting up libhtml-parser-perl (3.72-5) ...
Setting up libhttp-message-perl (6.22-1) ...
Setting up mysql-server-8.0 (8.0.30-0ubuntu0.20.04.2) ...
update-alternatives: using /etc/mysql/mysql.cnf to provide /etc/mysql/my.cnf (m
.cnf) in auto mode
Renaming removed key_buffer and myisam-recover options (if present)
mysqld will log errors to /var/log/mysql/error.log
mysqld is running as pid 3246
Created symlink /etc/systemd/system/multi-user.target.wants/mysql.service → /li
/systemd/system/mysql.service.
Setting up libcgi-pm-perl (4.46-1) ...
Setting up libhtml-template-perl (2.97-1) ...
Setting up mysql-server (8.0.30-0ubuntu0.20.04.2) ...
Setting up libcgi-fast-perl (1:2.15-1) ...
Processing triggers for systemd (245.4-4ubuntu3.17) ...
Processing triggers for man-db (2.9.1-1) ...
Processing triggers for libc-bin (2.31-0ubuntu9.9) ...
ubuntu@ip-172-31-29-203:~$ sudo nano site.pp
ubuntu@ip-172-31-29-203:~$ 
```

```
  GNU nano 4.8                          site.pp

$a=['httpd','mysql-service','nginx']
package{$a:
        ensure=>present,
}
file{'/tmp/s.txt':
        content=> "installed",

}
```

                          [ Read 7 lines ]

^G Get Help    ^O Write Out   ^W Where Is    ^K Cut Text    ^J Justify     ^C Cur Pos
^X Exit        ^R Read File   ^\ Replace     ^U Paste Text  ^T To Spell    ^  Go To Line

```
Run "sudo yum update" to apply all updates.
[ec2-user@ip-172-31-20-230 ~]$ sudo yum install httpd php
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
```

```
Complete!
[ec2-user@ip-172-31-20-230 ~]$ sudo yum install gcc glibc glibc-common
```

```
Complete!
[ec2-user@ip-172-31-20-230 ~]$ sudo yum install gd gd-devel
e.
```

```
Complete!
[ec2-user@ip-172-31-20-230 ~]$ sudo adduser -m nagios
e.
```

```
Complete!
[ec2-user@ip-172-31-20-230 ~]$ sudo adduser -m nagios
[ec2-user@ip-172-31-20-230 ~]$ sudo passwd nagios
Changing password for user nagios.
New password:
BAD PASSWORD: The password is shorter than 7 characters
Retype new password:
passwd: all authentication tokens updated successfully.
[ec2-user@ip-172-31-20-230 ~]$ 
```

```
[ec2-user@ip-172-31-20-230 ~]$ sudo groupadd nagcmd
[ec2-user@ip-172-31-20-230 ~]$ sudo usermod -a -G nagcmd nagios
[ec2-user@ip-172-31-20-230 ~]$ mkdir ~/downloads
[ec2-user@ip-172-31-20-230 ~]$ cd ~/downloads
[ec2-user@ip-172-31-20-230 downloads]$ wget http://prdownloads.sourceforge.net/s
ourceforge/nagios/nagios-4.0.8.tar.gz
--2022-10-19 13:37:59--  http://prdownloads.sourceforge.net/sourceforge/nagios/n
agios-4.0.8.tar.gz
Resolving prdownloads.sourceforge.net (prdownloads.sourceforge.net)... 204.68.11
1.105
Connecting to prdownloads.sourceforge.net (prdownloads.sourceforge.net)|204.68.1
11.105|:80... connected.
HTTP request sent, awaiting response... 301 Moved Permanently
Location: http://downloads.sourceforge.net/project/nagios/nagios-4.x/nagios-4.0.
```

```
[ec2-user@ip-172-31-20-230 downloads]$ wget http://nagios-plugins.org/download/n
agios-plugins-2.0.3.tar.gz
--2022-10-19 13:38:49--  http://nagios-plugins.org/download/nagios-plugins-2.0.3
.tar.gz
Resolving nagios-plugins.org (nagios-plugins.org)... 45.56.123.251
Connecting to nagios-plugins.org (nagios-plugins.org)|45.56.123.251|:80... conne
cted.
HTTP request sent, awaiting response... 200 OK
Length: 2659772 (2.5M) [application/x-gzip]
Saving to: 'nagios-plugins-2.0.3.tar.gz'

100%[====================================================>] 2,659,772    9.54MB/s    in 0.3s

2022-10-19 13:38:49 (9.54 MB/s) - 'nagios-plugins-2.0.3.tar.gz' saved [2659772/2
659772]

[ec2-user@ip-172-31-20-230 downloads]$ tar zxvf nagios-4.0.8.tar.gz
nagios-4.0.8/
nagios-4.0.8/.gitignore
nagios-4.0.8/Changelog
nagios-4.0.8/INSTALLING
nagios-4.0.8/LEGAL
nagios-4.0.8/LICENSE
nagios-4.0.8/Makefile.in
e.
```

```
[ec2-user@ip-172-31-20-230 downloads]$ cd nagios-4.0.8
[ec2-user@ip-172-31-20-230 nagios-4.0.8]$ ./configure --with-command-group=nagcm
d
checking for a BSD-compatible install... /usr/bin/install -c
checking build system type... x86_64-unknown-linux-gnu
checking host system type... x86_64-unknown-linux-gnu
checking for gcc... gcc
checking for C compiler default output file name... a.out
checking whether the C compiler works... yes
checking whether we are cross compiling... no
checking for suffix of executables...
checking for suffix of object files... o
checking whether we are using the GNU C compiler... yes
checking whether gcc accepts -g... yes
checking for gcc option to accept ISO C89... none needed
```

```
[ec2-user@ip-172-31-20-230 nagios-4.0.8]$ make all
cd ./base && make
make[1]: Entering directory `/home/ec2-user/downloads/nagios-4.0.8/base'
gcc -Wall -I.. -g -O2 -DHAVE_CONFIG_H -DNSCORE -c -o nagios.o nagios.c
gcc -Wall -I.. -g -O2 -DHAVE_CONFIG_H -DNSCORE   -c -o broker.o broker.c
gcc -Wall -I.. -g -O2 -DHAVE_CONFIG_H -DNSCORE   -c -o nebmods.o nebmods.c
gcc -Wall -I.. -g -O2 -DHAVE_CONFIG_H -DNSCORE -c -o ../common/shared.o ../commo
n/shared.c
gcc -Wall -I.. -g -O2 -DHAVE_CONFIG_H -DNSCORE   -c -o nerd.o nerd.c
gcc -Wall -I.. -g -O2 -DHAVE_CONFIG_H -DNSCORE   -c -o query-handler.o query-han
dler.c
```

```
make[1]: Leaving directory `/home/ec2-user/downloads/nagios-4.0.8'
[ec2-user@ip-172-31-20-230 nagios-4.0.8]$ sudo make install-init
```

```
** Init script installed ***

ec2-user@ip-172-31-20-230 nagios-4.0.8]$ sudo make install-config
```

```
[ec2-user@ip-172-31-20-230 nagios-4.0.8]$ sudo make install-commandmode
```

```
Remember, these are *SAMPLE* config files.  You'll need to read
the documentation for more information on how to actually define
services, hosts, etc. to fit your particular needs.

[ec2-user@ip-172-31-20-230 nagios-4.0.8]$ sudo make install-commandmode
/usr/bin/install -c -m 775 -o nagios -g nagcmd -d /usr/local/nagios/var/rw
chmod g+s /usr/local/nagios/var/rw

*** External command directory configured ***

[ec2-user@ip-172-31-20-230 nagios-4.0.8]$  sudo vim /usr/local/nagios/etc/object
s/contacts.cfg // change email.
```

```
[ec2-user@ip-172-31-20-230 nagios-4.0.8]$  sudo vim /usr/local/nagios/etc/object
s/contacts.cfg // change email.
4 files to edit
[ec2-user@ip-172-31-20-230 nagios-4.0.8]$ sudo make install-webconf
/usr/bin/install -c -m 644 sample-config/httpd.conf /etc/httpd/conf.d/nagios.con
f

*** Nagios/Apache conf file installed ***
```

```
[ec2-user@ip-172-31-20-230 nagios-4.0.8]$ sudo htpasswd -c /usr/local/nagios/etc
/htpasswd.users nagiosadmin
New password:
Re-type new password:
Adding password for user nagiosadmin
[ec2-user@ip-172-31-20-230 nagios-4.0.8]$
```

```
[ec2-user@ip-172-31-20-230 nagios-4.0.8]$ sudo htpasswd -c /usr/local/nagios/etc
/htpasswd.users nagiosadmin
New password:
Re-type new password:
Adding password for user nagiosadmin
[ec2-user@ip-172-31-20-230 nagios-4.0.8]$ sudo service httpd restart
Redirecting to /bin/systemctl restart httpd.service
[ec2-user@ip-172-31-20-230 nagios-4.0.8]$ cd ~/downloads
[ec2-user@ip-172-31-20-230 downloads]$ tar zxvf nagios-plugins-2.0.3.tar.gz
nagios-plugins-2.0.3/
nagios-plugins-2.0.3/perlmods/
nagios-plugins-2.0.3/perlmods/Config-Tiny-2.14.tar.gz
nagios-plugins-2.0.3/perlmods/parent-0.226.tar.gz
nagios-plugins-2.0.3/perlmods/Test-Simple-0.98.tar.gz
nagios-plugins-2.0.3/perlmods/Makefile.in
nagios-plugins-2.0.3/perlmods/version-0.9903.tar.gz
nagios-plugins-2.0.3/perlmods/Makefile.am
nagios-plugins-2.0.3/perlmods/Module-Runtime-0.013.tar.gz
nagios-plugins-2.0.3/perlmods/Module-Metadata-1.000014.tar.gz
nagios-plugins-2.0.3/perlmods/Params-Validate-1.08.tar.gz
nagios-plugins-2.0.3/perlmods/Class-Accessor-0.34.tar.gz
```

```
config.status: creating pkg/solaris/pkginfo
config.status: creating po/Makefile.in
config.status: creating config.h
config.status: executing depfiles commands
config.status: executing libtool commands
config.status: executing po-directories commands
config.status: creating po/POTFILES
config.status: creating po/Makefile
configure: WARNING: unrecognized options: --with-nagios-user-nagios, --with-nagi
os-group-nagios
            --with-apt-get-command:
         --with-ping6-command: /usr/bin/ping6 -n -U -w %d -c %d %s
          --with-ping-command: /usr/bin/ping -n -U -w %d -c %d %s
                  --with-ipv6: yes
                 --with-mysql: no
               --with-openssl: no
                --with-gnutls: no
            --enable-extra-opts: yes
                  --with-perl: /usr/bin/perl
          --enable-perl-modules: no
                --with-cgiurl: /nagios/cgi-bin
           --with-trusted-path: /bin:/sbin:/usr/bin:/usr/sbin
                --enable-libtap: no
```

```
if test "nagios-plugins" = "gettext-tools"; then \
  /usr/bin/mkdir -p /usr/local/nagios/share/gettext/po; \
  for file in Makefile.in.in remove-potcdate.sin    Makevars.template; do \
    /usr/bin/install -c  -m 644 ./$file \
                    /usr/local/nagios/share/gettext/po/$file; \
  done; \
  for file in Makevars; do \
    rm -f /usr/local/nagios/share/gettext/po/$file; \
  done; \
else \
  : ; \
fi
make[1]: Leaving directory `/home/ec2-user/downloads/nagios-plugins-2.0.3/po'
make[1]: Entering directory `/home/ec2-user/downloads/nagios-plugins-2.0.3'
make[2]: Entering directory `/home/ec2-user/downloads/nagios-plugins-2.0.3'
make[2]: Nothing to be done for `install-exec-am'.
make[2]: Nothing to be done for `install-data-am'.
make[2]: Leaving directory `/home/ec2-user/downloads/nagios-plugins-2.0.3'
make[1]: Leaving directory `/home/ec2-user/downloads/nagios-plugins-2.0.3'
[ec2-user@ip-172-31-20-230 nagios-plugins-2.0.3]$ sudo chkconfig --add nagios
[ec2-user@ip-172-31-20-230 nagios-plugins-2.0.3]$ sudo chkconfig --add nagios
[ec2-user@ip-172-31-20-230 nagios-plugins-2.0.3]$ sudo chkconfig nagios on
[ec2-user@ip-172-31-20-230 nagios-plugins-2.0.3]$ sudo chkconfig nagios on
[ec2-user@ip-172-31-20-230 nagios-plugins-2.0.3]$ 
```

```
                Checked 8 services.
                Checked 1 hosts.
                Checked 1 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 1 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


Things look okay - No serious problems were detected during the pre-flight check
[ec2-user@ip-172-31-20-230 nagios-plugins-2.0.3]$ sudo service nagios start
d twice.
```

```
Checking for circular paths...
        Checked 1 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


Things look okay - No serious problems were detected during the pre-flight check
[ec2-user@ip-172-31-20-230 nagios-plugins-2.0.3]$ sudo service nagios start
Starting nagios (via systemctl):                          [  OK  ]
[ec2-user@ip-172-31-20-230 nagios-plugins-2.0.3]$ http://ec2-xx-xxxx-xxxx-xxx.ap
-west-1.compute.amazonaws.com/nagios/
```