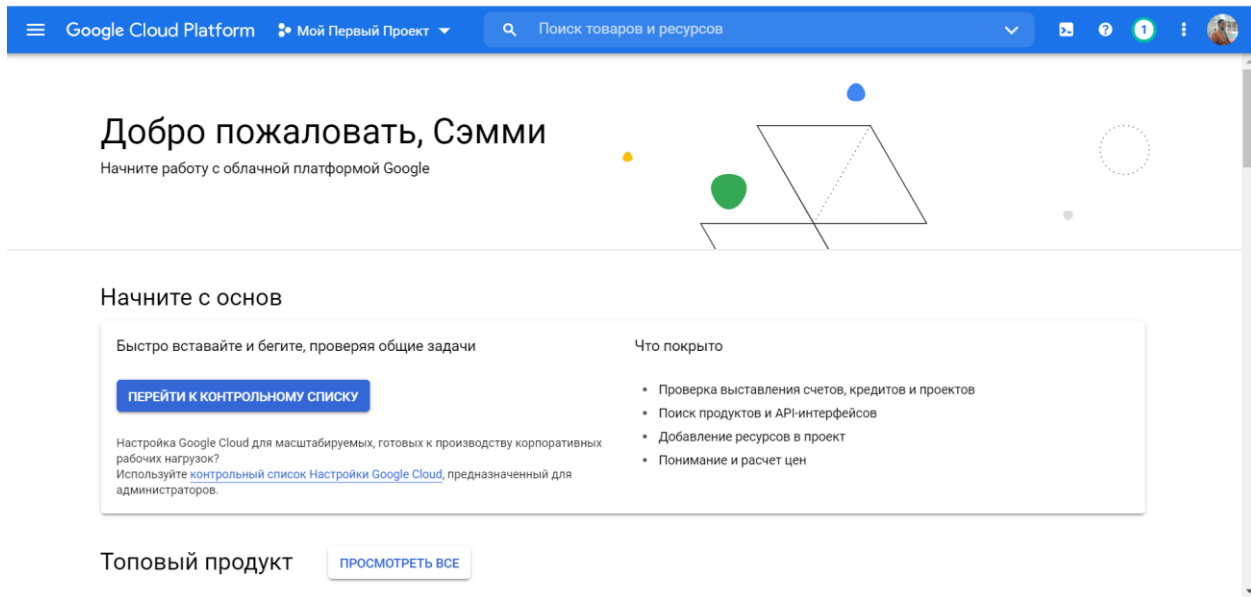
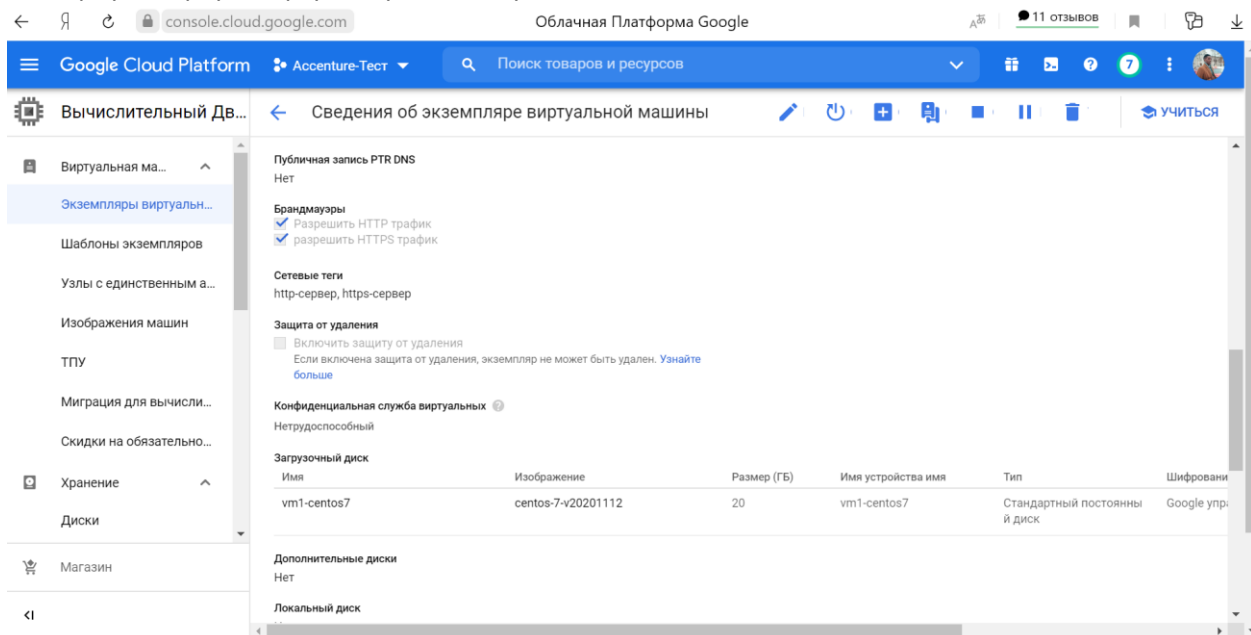


Задание:

1. Зарегистрироваться на пробный период в облачном сервисе (например Oracle, Google, AWS или другие)



2. Развернуть первую виртуальную машину с Centos7



3. Открыть порт для SSH, если требуется.  
SSL работает

#### 4. Проверить, что SSH работает.

```
ssh.cloud.google.com sammyayot254@vm1-centos7:~
[connected, host fingerprint: sha-256:76:58:3B:5C:72:86:A9:4F:65:75:44:0E:1C:7:23:50:DI:BE:7197:DI:CF:2A:67:D8:6F:DI:39:66:C2:6E:71:4D]
[sammyayot254@vm1-centos7 ~]$ sudo yum update
Loaded plugins: fastestmirror
Determining fastest mirrors
epel/x86_64/metalink | 45 kB 00:00:00
 * base: mirror.nsc.liu.se
 * epel: mirror.nsc.liu.se
 * extras: mirror.nsc.liu.se
 * updates: mirror.nsc.liu.se
base | 3.6 kB 00:00:00
epel | 4.7 kB 00:00:00
extras | 2.9 kB 00:00:00
google-cloud-sdk/signature | 454 B 00:00:00
google-cloud-sdk/signature | 1.4 kB 00:00:00 !!!
google-compute-engine/signature | 454 B 00:00:00
google-compute-engine/signature | 1.4 kB 00:00:00 !!!
updates | 2.9 kB 00:00:00
(1/9): base/7/x86_64/group_gz | 153 kB 00:00:00
(2/9): base/7/x86_64/primary_db | 6.1 MB 00:00:00
(3/9): epel/x86_64/group_gz | 95 kB 00:00:00
(4/9): extras/7/x86_64/primary_db | 222 kB 00:00:00
(5/9): updates/7/x86_64/primary_db | 3.7 MB 00:00:00
(6/9): google-cloud-sdk/primary | 133 kB 00:00:00
(7/9): google-compute-engine/primary | 4.1 kB 00:00:00
(8/9): epel/x86_64/primary_db | 6.9 MB 00:00:00
(9/9): epel/x86_64/updateinfo | 1.0 MB 00:00:02
google-cloud-sdk 907/907
google-compute-engine 12/12
Resolving Dependencies
```

#### 5. Открыть TCP порт 2233 на Firewall внутри системы (выключать firewall нельзя)

```
ssh.cloud.google.com sammyayot254@vm1-centos7:~
sudo.x86_64 0:1.8.23-10.el7 | systemd.x86_64 0:219-78.el7_9.2
systemd-libs.x86_64 0:219-78.el7_9.2 | systemd-sysv.x86_64 0:219-78.el7_9.2
teamd.x86_64 0:1.29-3.el7 | tuned.noarch 0:2:11:0-10.el7
tzdata.noarch 0:2020d-2.el7 | util-linux.x86_64 0:2.23.2-65.el7
vim-common.x86_64 2:7.4.629-7.el7 | vim-enhanced.x86_64 2:7.4.629-7.el7
vim-filesystem.x86_64 2:7.4.629-7.el7 | vim-minimal.x86_64 2:7.4.629-7.el7
xfsprogs.x86_64 0:4.5.0-22.el7 | yum.noarch 0:3.4.3-168.el7.centos
yum-cron.noarch 0:3.4.3-168.el7.centos

Complete!
[sammyayot254@vm1-centos7 ~]$
[sammyayot254@vm1-centos7 ~]$ sudo systemctl status firewalld
● firewalld.service - firewalld - dynamic firewall daemon
   Loaded: loaded (/usr/lib/systemd/system/firewalld.service; enabled; vendor preset: enabled)
   Active: active (running) since Tue 2020-12-01 16:38:25 UTC; 4min 1s ago
     Docs: man:firewalld(1)
    Main PID: 2861 (firewalld)
   CGroup: /system.slice/firewalld.service
           └─2861 /usr/bin/python2 -Es /usr/sbin/firewalld --nofork --nopid

Dec 01 16:38:25 vm1-centos7 systemd[1]: Starting firewalld - dynamic firewall daemon...
Dec 01 16:38:25 vm1-centos7 systemd[1]: Started firewalld - dynamic firewall daemon.
Dec 01 16:38:25 vm1-centos7 firewalld[2861]: WARNING: AllowZoneDrifting is enabled. This is considered an insecure configuration option. It will be remo...g it now.
Hint: Some lines were ellipsized, use -l to show in full.
[sammyayot254@vm1-centos7 ~]$ sudo firewall-cmd --get-default-zone
trusted
[sammyayot254@vm1-centos7 ~]$ sudo firewall-cmd --set-default-zone=public
success
[sammyayot254@vm1-centos7 ~]$ sudo firewall-cmd --reload
success
[sammyayot254@vm1-centos7 ~]$ sudo firewall-cmd --get-services
RH-Satellite-6 RH-Satellite-6-capsule amanda-client amanda-k5-client amqp amqps apocups audit bacula bacula-client bgp bitcoin bitcoin-rpc bitcoin-testnet bitcoin-t
eastnet-rpc ceph ceph-mon cfengine condor-collector ctdb dhcp dhcpv6 dhcpv6-client distcc dns docker-registry docker-swarm dropbox-lansync elasticsearch etcd-client
etcd-server finger freeipa-ldap freeipa-ldaps freeipa-replication freeipa-trust ftp ganglia-client ganglia-master git gre high-availability http https imap imaps ip
p ipp-client ipsec irc ircs iscsi-target isns jenkins kadmin kerberos kibana klogon kpasswd kprop kshell ldap ldaps libvirt libvirt-tls lightning-network llmnr mana
gesieve matrix mdns minidlna mongod mosh mountd mqtqt mqtqt-tls ms-wbt mssql murmur mysql nfs nfs3 nmea-0183 nrpe ntp nut openvpn ovirt-imageio ovirt-storageconsole
ovirt-vmconsole plex pmcd pmproxy pmwebapi pmwebapis pop3 pop3s postgresql privoxy proxy-dhcp ptp pulseaudio puppetmaster quassel radius redis rpc-bind rsh rsyncd r
tap salt-master samba samba-client samba-dc sane sip sips sip smtp smtp-submission smtps snmp snmptrap spideroak-lansync squid ssh steam-streaming svdrp svn syncthi
ng syncthing-gui synergy syslog syslog-tls telnet tftp tftp-client tinc tor-socks transmission-client upnp-client vdsml vnc-server wbem-http wdem-https wsman wsmans
xdmcp xmpp-bosh xmpp-client xmpp-local xmpp-server zabbix-agent zabbix-server
[sammyayot254@vm1-centos7 ~]$ sudo firewall-cmd --zone=public --add-port=2233/tcp --permanent
success
[sammyayot254@vm1-centos7 ~]$
```

## 6. Открыть TCP порт 2233 на уровне облачного сервиса. (если требуется)

The screenshot shows the Google Cloud Platform interface for managing Firewall rules. The 'Firewall' section is active, displaying a table of rules. The rule 'allow-ingress-from-iap' is highlighted with a red box. The table columns are: Name, Type, Targets, Filters, Protocols / ports, Action, Priority, Network, and Logs.

Name	Type	Targets	Filters	Protocols / ports	Action	Priority	Network	Logs
allow-ingress-from-iap	Ingress	Apply to all	IP ranges: 35.23!	tcp:2233,3389	Allow	1000	default	Off
default-allow-http	Ingress	http-server	IP ranges: 0.0.0.0/0	tcp:80	Allow	1000	default	Off
default-allow-https	Ingress	https-server	IP ranges: 0.0.0.0/0	tcp:443	Allow	1000	default	Off
default-allow-icmp	Ingress	Apply to all	IP ranges: 0.0.0.0/0	icmp	Allow	65534	default	Off
default-allow-internal	Ingress	Apply to all	IP ranges: 10.128.0.0/16	tcp:0-65535 udp:0-65535 icmp	Allow	65534	default	Off
default-allow-rdp	Ingress	Apply to all	IP ranges: 0.0.0.0/0	tcp:3389	Allow	65534	default	Off

## 7. Изменить стандартный порт подключения для SSH на 2233

```
ssh.cloud.google.com root@vm1-centos7:~  
$OpenSSH: sshd_config.v 4.100 2016/08/15 12:32:04 naddy Exp $  
# This is the sshd server system-wide configuration file. See  
# sshd_config(5) for more information.  
# This sshd was compiled with PATH=/usr/local/bin:/usr/bin  
# The strategy used for options in the default sshd_config shipped with  
# OpenSSH is to specify options with their default value where  
# possible, but leave them commented. Uncommented options override the  
# default value.  
# If you want to change the port on a SELinux system, you have to tell  
# SELinux about this change.  
#*Example*  
#ListenAddress 0.0.0.0  
#ListenAddress ::  
#*Example*  
#Port 22  
#Port 2233  
#AddressFamily any  
#ListenAddress 0.0.0.0  
#ListenAddress ::  
HostKey /etc/ssh/ssh_host_rsa_key  
#HostKey /etc/ssh/ssh_host_dsa_key  
HostKey /etc/ssh/ssh_host_ecdsa_key  
HostKey /etc/ssh/ssh_host_ed25519_key  
# Ciphers and keying  
#RekeyLimit default none  
# Logging  
#SyslogFacility AUTH  
SyslogFacility AUTHPRIV  
#LogLevel INFO  
# Authentication:  
#LoginGraceTime 2m  
PermitRootLogin no  
#StrictModes yes  
#MaxAuthTries 6  
#MaxSessions 10  
#PubkeyAuthentication yes  
-- INSERT --  
16,11 Top
```

```

ssh.cloud.google.com sammyayot254@vm1-centos7:~
[sammyayot254@vm1-centos7 ~]$ cd \
[sammyayot254@vm1-centos7 ~]$ sudo netstat -anp | grep ssh
tcp        0      0 0.0.0.0:22          0.0.0.0:*          LISTEN     1100/sshd
tcp        0      0 10.166.0.3:22      35.235.240.178:37448 ESTABLISHED 23556/sshd: sammyay
tcp6       0      0 :::22              :::*                LISTEN     1100/sshd
unix  2      [ ACC ] STREAM LISTENING  80672    23566/sshd: sammyay /tmp/ssh-vYzv7WvTvT/agent.23566
unix  3      [ ]     STREAM CONNECTED  18545    1100/sshd
unix  3      [ ]     STREAM CONNECTED  81723    23566/sshd: sammyay
unix  3      [ ]     STREAM CONNECTED  81724    23556/sshd: sammyay
unix  2      [ ]     DGRAM   CONNECTED  81720    23556/sshd: sammyay
[sammyayot254@vm1-centos7 ~]$ sudo nano /etc/ssh/sshd_config
[sammyayot254@vm1-centos7 ~]$ sestatus
SELinux status:
SELinuxfs mount: /sys/fs/selinux
SELinux root directory: /etc/selinux
Loaded policy name: targeted
Current mode: enforcing
Mode from config file: enforcing
Policy MLS status: enabled
Policy deny_unknown status: allowed
Max kernel policy version: 31
[sammyayot254@vm1-centos7 ~]$ sudo netstat -anp | grep ssh
tcp        0      0 0.0.0.0:22          0.0.0.0:*          LISTEN     1100/sshd
tcp        0      0 10.166.0.3:22      35.235.240.178:37448 ESTABLISHED 23556/sshd: sammyay
tcp6       0      0 :::22              :::*                LISTEN     1100/sshd
unix  2      [ ACC ] STREAM LISTENING  80672    23566/sshd: sammyay /tmp/ssh-vYzv7WvTvT/agent.23566
unix  3      [ ]     STREAM CONNECTED  18545    1100/sshd
unix  3      [ ]     STREAM CONNECTED  81723    23566/sshd: sammyay
unix  3      [ ]     STREAM CONNECTED  81724    23556/sshd: sammyay
unix  2      [ ]     DGRAM   CONNECTED  81720    23556/sshd: sammyay
[sammyayot254@vm1-centos7 ~]$ sudo semanage port -a -t ssh_port_t -p tcp 2233
[sammyayot254@vm1-centos7 ~]$ sudo firewall-cmd --permanent --zone=public --add-port=2233/tcp
Warning: ALREADY_ENABLED: 2233:tcp
success
[sammyayot254@vm1-centos7 ~]$ sudo firewall-cmd --reload
success
[sammyayot254@vm1-centos7 ~]$ sudo systemctl restart sshd.service
[sammyayot254@vm1-centos7 ~]$ ss -tnlp | grep ssh
[sammyayot254@vm1-centos7 ~]$ sudo ss -tnlp | grep ssh
LISTEN 0      128          *:2233          *:*             users: (("sshd",pid=23822,fd=3))
LISTEN 0      128          [::]:2233     [::]:*          users: (("sshd",pid=23822,fd=4))
[sammyayot254@vm1-centos7 ~]$

```

Free trial status: P18,637.16 credit and 91 days remaining - with a full account, you'll get unlimited access to all of Google Cloud Platform. DISMISS ACTIVATE

Google Cloud Platform My Project Search products and resources

VPC network

- VPC networks
- External IP addresses
- Firewall
- Routes
- VPC network peering
- Shared VPC
- Serverless VPC access
- Packet mirroring

Protocols and ports

Allow all

Specified protocols and ports

tcp: 2233

udp: all

Other protocols

protocols, comma separated, e.g. ah, sctp

DISABLE RULE

SAVE CANCEL

Equivalent REST

## 8. Создать папку TEST в home каталоге пользователя

```

ssh.cloud.google.com sammyayot254@vm1-centos7:/home
unix  3      [ ]     STREAM CONNECTED  81723    23566/sshd: sammyay
unix  3      [ ]     STREAM CONNECTED  81724    23556/sshd: sammyay
unix  2      [ ]     DGRAM   CONNECTED  81720    23556/sshd: sammyay
[sammyayot254@vm1-centos7 ~]$ sudo nano /etc/ssh/sshd_config
[sammyayot254@vm1-centos7 ~]$ sestatus
SELinux status:
SELinuxfs mount: /sys/fs/selinux
SELinux root directory: /etc/selinux
Loaded policy name: targeted
Current mode: enforcing
Mode from config file: enforcing
Policy MLS status: enabled
Policy deny_unknown status: allowed
Max kernel policy version: 31
[sammyayot254@vm1-centos7 ~]$ sudo netstat -anp | grep ssh
tcp        0      0 0.0.0.0:22          0.0.0.0:*          LISTEN     1100/sshd
tcp        0      0 10.166.0.3:22      35.235.240.178:37448 ESTABLISHED 23556/sshd: sammyay
tcp6       0      0 :::22              :::*                LISTEN     1100/sshd
unix  2      [ ACC ] STREAM LISTENING  80672    23566/sshd: sammyay /tmp/ssh-vYzv7WvTvT/agent.23566
unix  3      [ ]     STREAM CONNECTED  18545    1100/sshd
unix  3      [ ]     STREAM CONNECTED  81723    23566/sshd: sammyay
unix  3      [ ]     STREAM CONNECTED  81724    23556/sshd: sammyay
unix  2      [ ]     DGRAM   CONNECTED  81720    23556/sshd: sammyay
[sammyayot254@vm1-centos7 ~]$ sudo semanage port -a -t ssh_port_t -p tcp 2233
[sammyayot254@vm1-centos7 ~]$ sudo firewall-cmd --permanent --zone=public --add-port=2233/tcp
Warning: ALREADY_ENABLED: 2233:tcp
success
[sammyayot254@vm1-centos7 ~]$ sudo firewall-cmd --reload
success
[sammyayot254@vm1-centos7 ~]$ sudo systemctl restart sshd.service
[sammyayot254@vm1-centos7 ~]$ ss -tnlp | grep ssh
[sammyayot254@vm1-centos7 ~]$ sudo ss -tnlp | grep ssh
LISTEN 0      128          *:2233          *:*             users: (("sshd",pid=23822,fd=3))
LISTEN 0      128          [::]:2233     [::]:*          users: (("sshd",pid=23822,fd=4))
[sammyayot254@vm1-centos7 ~]$ pwd
/home/sammyayot254
[sammyayot254@vm1-centos7 ~]$ cd /home
[sammyayot254@vm1-centos7 ~]$ mkdir TEST
mkdir: cannot create directory 'TEST': Permission denied
[sammyayot254@vm1-centos7 ~]$ sudo mkdir TEST
[sammyayot254@vm1-centos7 ~]$ ls -la -a
.. . . . .
Account: sammyayot254
[sammyayot254@vm1-centos7 ~]$

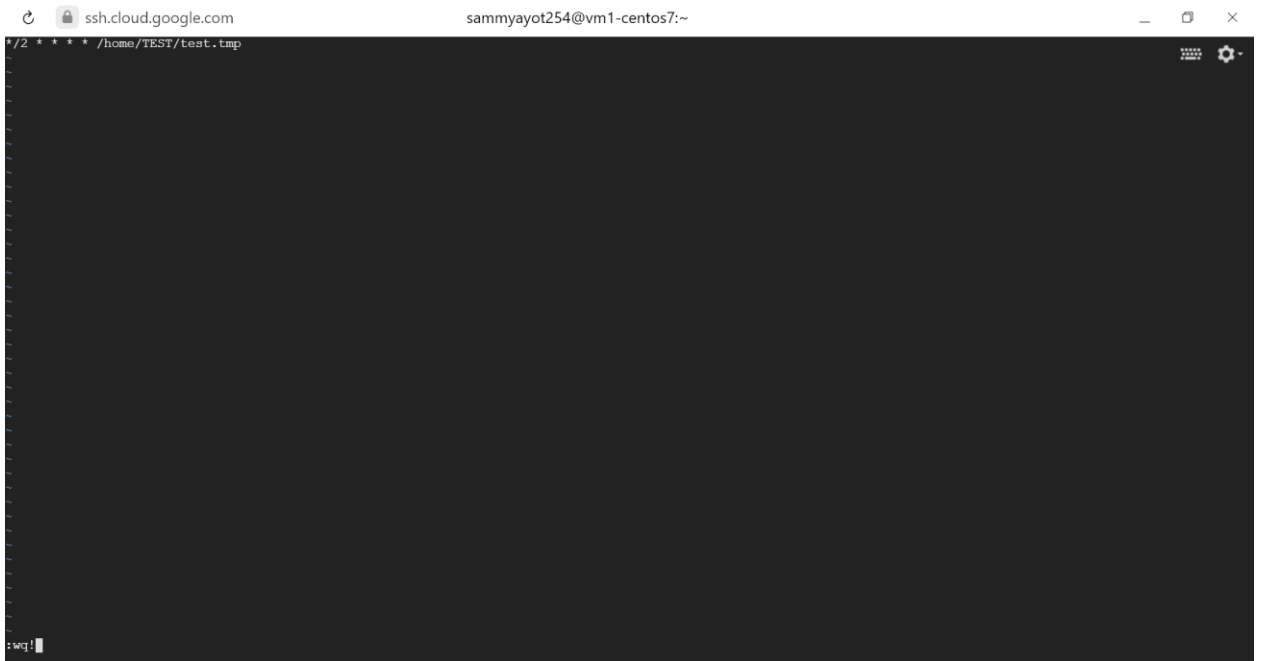
```

## 9. Создать там файл test.tmp

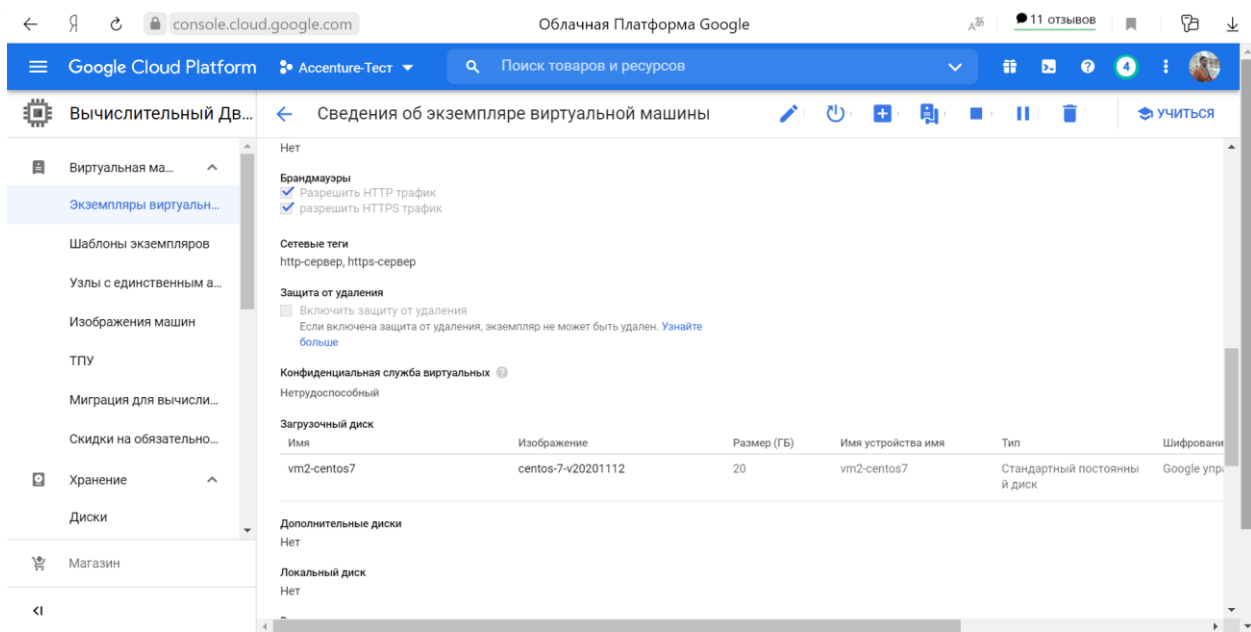
```
ssh.cloud.google.com sammyayot254@vm1-centos7:/home/TEST
Current mode: enforcing
Mode from config file: enforcing
Policy MLS status: enabled
Policy deny unknown status: allowed
Max kernel policy version: 31
[sammyayot254@vm1-centos7 ~]$ sudo netstat -anp | grep ssh
tcp        0  0  0.0.0.0:22                0.0.0.0:*          LISTEN      1100/sshd
tcp        0  0  10.166.0.3:22           35.235.240.178:37448 ESTABLISHED 23566/sshd: sammyay
tcp6       0  0  :::22                   :::*                LISTEN      1100/sshd
unix 2      [ ACC ]     STREAM  LISTENING   80672    23566/sshd: sammyay /tmp/ssh-vYzv7WvTvT/agent.23566
unix 3      [ ]       STREAM  CONNECTED   18545    1100/sshd
unix 3      [ ]       STREAM  CONNECTED   81723    23566/sshd: sammyay
unix 3      [ ]       STREAM  CONNECTED   81724    23566/sshd: sammyay
unix 2      [ ]       DGRAM   0            81720    23566/sshd: sammyay
[sammyayot254@vm1-centos7 ~]$ sudo semanage port -a -t ssh_port_t -p tcp 2233
[sammyayot254@vm1-centos7 ~]$ sudo firewall-cmd --permanent --zone=public --add-port=2233/tcp
Warning: ALREADY_ENABLED: 2233:tcp
success
[sammyayot254@vm1-centos7 ~]$ sudo firewall-cmd --reload
success
[sammyayot254@vm1-centos7 ~]$ sudo systemctl restart sshd.service
[sammyayot254@vm1-centos7 ~]$ ss -tnlp | grep ssh
[sammyayot254@vm1-centos7 ~]$ sudo ss -tnlp | grep ssh
LISTEN 0      128          *:2233          *:*             users:({"sshd",pid=23822,fd=3})
LISTEN 0      128          [::]:2233     [::]:*          users:({"sshd",pid=23822,fd=4})
[sammyayot254@vm1-centos7 ~]$ pwd
/home/sammyayot254
[sammyayot254@vm1-centos7 ~]$ cd /home
[sammyayot254@vm1-centos7 home]$ mkdir TEST
mkdir: cannot create directory 'TEST': Permission denied
[sammyayot254@vm1-centos7 home]$ sudo mkdir TEST
[sammyayot254@vm1-centos7 home]$ ls -a
.
..
TEST
[sammyayot254@vm1-centos7 home]$ cd TEST
[sammyayot254@vm1-centos7 TEST]$ sudo nano test.tmp
[sammyayot254@vm1-centos7 TEST]$ ls -a
.
..
test.tmp
[sammyayot254@vm1-centos7 TEST]$ pwd
/home/TEST
[sammyayot254@vm1-centos7 TEST]$ sudo nano test.tmp
[sammyayot254@vm1-centos7 TEST]$ ls -a
.
..
test.tmp
[sammyayot254@vm1-centos7 TEST]$
```

## 10. Настроить запись в файл test.tmp текущей даты и времени в произвольном формате по расписанию, каждые 2 минуты. (можно перезаписывать файл)

```
ssh.cloud.google.com sammyayot254@vm1-centos7:/home/TEST
GNU nano 2.3.1 File: test.tmp
timedatectl
```



## 11. Развернуть вторую виртуальную машину с Centos7



## 12. Открыть порт для SSH, если требуется.

### 13. Проверить, что SSH работает.

```
ssh.cloud.google.com sammyayot254@vm2-centos7:~
[connected, host fingerprint: ssh-rsa 0 47:7b:32:46:61:87:74:fa:d0:77:1a:a9:51:6c
:9c:19:16:3e:66:3e:81:f4:05:da:6b:ca:46:9c:6f:44:8d:83]
[sammyayot254@vm2-centos7 ~]$ sudo yum update
Loaded plugins: fastestmirror
Determining fastest mirrors
epel/x86_64/metalink | 48 kB 00:00:00
 * base: mirror.nsc.liu.se
 * epel: mirror.nsc.liu.se
 * extras: mirror.nsc.liu.se
 * updates: mirror.nsc.liu.se
base | 3.6 kB 00:00:00
epel | 4.7 kB 00:00:00
extras | 2.9 kB 00:00:00
google-cloud-sdk/signature | 454 B 00:00:00
google-cloud-sdk/signature | 1.4 kB 00:00:00 !!!
google-compute-engine/signature | 454 B 00:00:00
google-compute-engine/signature | 1.4 kB 00:00:00 !!!
updates | 2.9 kB 00:00:00
(1/9) : base/7/x86_64/group_gz | 153 kB 00:00:00
(2/9) : base/7/x86_64/primary_db | 6.1 MB 00:00:00
(3/9) : epel/x86_64/group_gz | 95 kB 00:00:00
(4/9) : extras/7/x86_64/primary_db | 222 kB 00:00:00
(5/9) : updates/7/x86_64/primary_db | 3.7 MB 00:00:00
(6/9) : google-cloud-sdk/primary | 133 kB 00:00:00
(7/9) : google-compute-engine/primary | 4.1 kB 00:00:00
(8/9) : epel/x86_64/primary_db | 6.9 MB 00:00:00
(9/9) : epel/x86_64/updateinfo | 18 MB 00:00:00 ETA
96% [-----] 3.9 MB/s
```

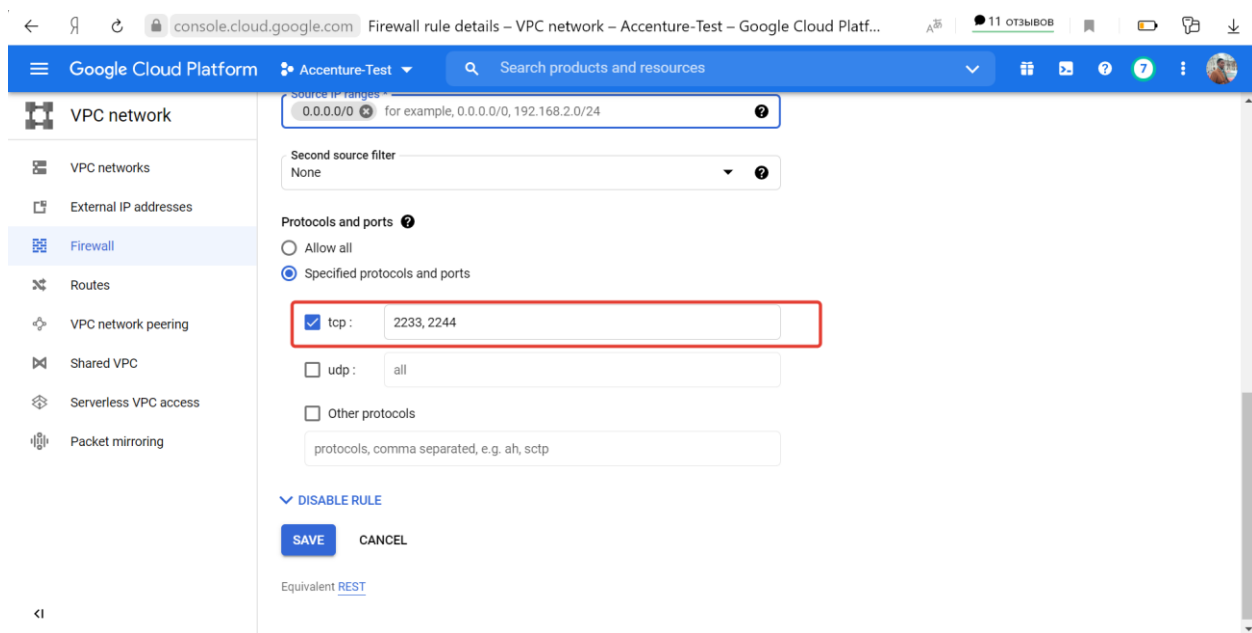
### 14. Открыть TCP порт 2244 на Firewall внутри системы (выключать firewall нельзя)

```
ssh.cloud.google.com sammyayot254@vm2-centos7:~
linux-firmware.noarch 0:20200421-79.git78c0348.e17
lz4.x86_64 0:1.8.3-1.e17
nspr.x86_64 0:4.25.0-2.e17_9
nss-softokn.x86_64 0:3.53.1-6.e17_9
nss-sysinit.x86_64 0:3.53.1-3.e17_9
nss-util.x86_64 0:3.53.1-1.e17_9
perl.x86_64 4:5.16.3-297.e17
perl-libs.x86_64 4:5.16.3-297.e17
plymouth.x86_64 0:0.8.9-0.34.20140113.e17.centos
plymouth-scripts.x86_64 0:0.8.9-0.34.20140113.e17.centos
python.x86_64 0:2.7.5-90.e17
python-libs.x86_64 0:2.7.5-90.e17
rpm.x86_64 0:4.11.3-45.e17
rpm-libs.x86_64 0:4.11.3-45.e17
rsyslog.x86_64 0:8.24.0-57.e17_9
selinux-policy.noarch 0:3.13.1-268.e17_9.2
sudo.x86_64 0:1.8.23-10.e17
systemd-libs.x86_64 0:219-78.e17_9.2
teamd.x86_64 0:1.29-3.e17
tzdata.noarch 0:2020d-2.e17
vim-common.x86_64 2:7.4.629-7.e17
vim-filesystem.x86_64 2:7.4.629-7.e17
xfsprogs.x86_64 0:4.5.0-22.e17
yum-cron.noarch 0:3.4.3-168.e17.centos
lshw.x86_64 0:B.02.18-17.e17
mariadb-libs.x86_64 1:5.5.68-1.e17
nss.x86_64 0:3.53.1-3.e17_9
nss-softokn-freebl.x86_64 0:3.53.1-6.e17_9
nss-tools.x86_64 0:3.53.1-3.e17_9
openldap.x86_64 0:2.4.44-22.e17
perl-Pod-Escapes.noarch 1:1.04-297.e17
perl-macros.x86_64 4:5.16.3-297.e17
plymouth-core-libs.x86_64 0:0.8.9-0.34.20140113.e17.centos
procps-ng.x86_64 0:3.3.10-28.e17
python-firewall.noarch 0:0.6.3-12.e17
python-perf.x86_64 0:3.10.0-1160.6.1.e17
rpm-build-libs.x86_64 0:4.11.3-45.e17
rpm-python.x86_64 0:4.11.3-45.e17
sed.x86_64 0:4.2.2-7.e17
selinux-policy-targeted.noarch 0:3.13.1-268.e17_9.2
systemd.x86_64 0:219-78.e17_9.2
systemd-sysv.x86_64 0:219-78.e17_9.2
tuned.noarch 0:2.11.0-10.e17
util-linux.x86_64 0:2.23.2-65.e17
vim-enhanced.x86_64 2:7.4.629-7.e17
vim-minimal.x86_64 2:7.4.629-7.e17
yum.noarch 0:3.4.3-168.e17.centos

Complete!
[sammyayot254@vm2-centos7 ~]$
[sammyayot254@vm2-centos7 ~]$ sudo systemctl status firewalld
● firewalld.service - firewalld - dynamic firewall daemon
   Loaded: loaded (/usr/lib/systemd/system/firewalld.service; enabled; vendor preset: enabled)
   Active: active (running) since Wed 2020-12-02 00:53:21 UTC; 4min 17s ago
     Docs: man:firewalld(1)
   Main PID: 2763 (firewalld)
   CGroup: /system.slice/firewalld.service
           └─2763 /usr/bin/python2 -Es /usr/sbin/firewalld --nofork --nopid

Dec 02 00:53:21 vm2-centos7 systemd[1]: Starting firewalld - dynamic firewall daemon...
Dec 02 00:53:21 vm2-centos7 systemd[1]: Started firewalld - dynamic firewall daemon.
Dec 02 00:53:21 vm2-centos7 firewalld[2763]: WARNING: AllowZoneDrifting is enabled. This is considered an insecure configuration option. It will be remo...g it now.
Hint: Some lines were ellipsized, use -l to show in full.
[sammyayot254@vm2-centos7 ~]$ sudo firewall-cmd --zone=public --add-port=2244/tcp --permanent
success
[sammyayot254@vm2-centos7 ~]$
```

## 15. Открыть TCP порт 2244 на уровне облачного сервиса. (если требуется)



The screenshot shows the Google Cloud Platform console for a Firewall rule. The 'Protocols and ports' section is highlighted with a red box. The 'tcp' checkbox is checked, and the port field contains '2233, 2244'. The 'udp' and 'Other protocols' checkboxes are unchecked. The 'SAVE' button is visible at the bottom.

## 16. Изменить стандартный порт подключения для SSH на 2244

```
ssh.cloud.google.com sammyayot254@vm2-centos7:~  
Dependencies Resolved  
-----  
Package Arch Version Repository Size  
-----  
Installing:  
nano x86_64 2.3.1-10.el7 base 440 k  
Transaction Summary  
-----  
Install 1 Package  
Total download size: 440 k  
Installed size: 1.6 M  
Is this ok [y/d/N]: y  
Downloading packages:  
nano-2.3.1-10.el7.x86_64.rpm | 440 kB 00:00:00  
Running transaction check  
Running transaction test  
Transaction test succeeded  
Running transaction  
Installing : nano-2.3.1-10.el7.x86_64 1/1  
Verifying : nano-2.3.1-10.el7.x86_64 1/1  
Installed:  
 nano.x86_64 0:2.3.1-10.el7  
Complete!  
[sammyayot254@vm2-centos7 ~]$ sudo nano /etc/ssh/sshd_config  
[sammyayot254@vm2-centos7 ~]$ sudo nano /etc/ssh/sshd_config  
[sammyayot254@vm2-centos7 ~]$ sudo semanage port -a -t ssh_port_t -p tcp 2244  
[sammyayot254@vm2-centos7 ~]$ sudo firewall-cmd --permanent --zone=public --add-port=2244/tcp  
success: ALREADY_ENABLED: 2244:tcp  
success  
[sammyayot254@vm2-centos7 ~]$ sudo firewall-cmd --reload  
success  
[sammyayot254@vm2-centos7 ~]$ sudo systemctl restart sshd.service  
[sammyayot254@vm2-centos7 ~]$ ss -tnlp | grep ssh  
[sammyayot254@vm2-centos7 ~]$ sudo ss -tnlp | grep ssh  
LISTEN 0 128 *:2244 *:* users: (("sshd",pid=22267,fd=3))  
LISTEN 0 128 [::]:2244 [::]:* users: (("sshd",pid=22267,fd=4))  
[sammyayot254@vm2-centos7 ~]$
```



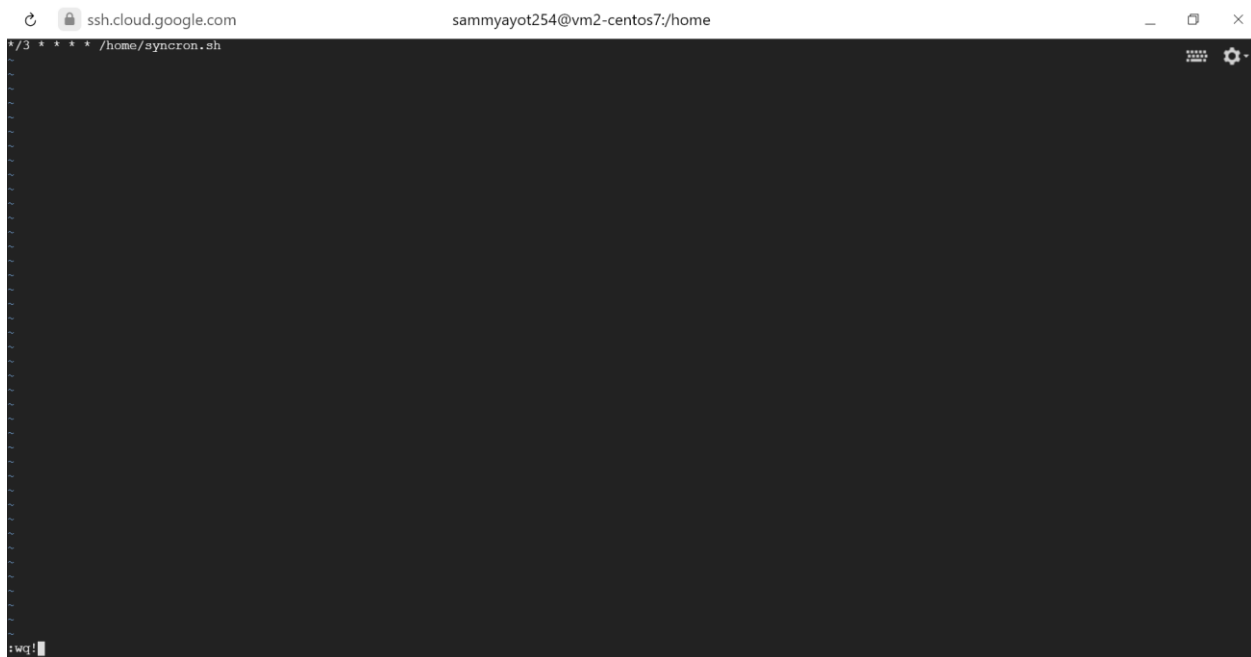
## 17. Создать папку TEST в home каталоге пользователя

```
ssh.cloud.google.com root@vm2-centos7:~
Verifying : nano-2.3.1-10.el7.x86_64
Installed:
 nano.x86_64 0:2.3.1-10.el7

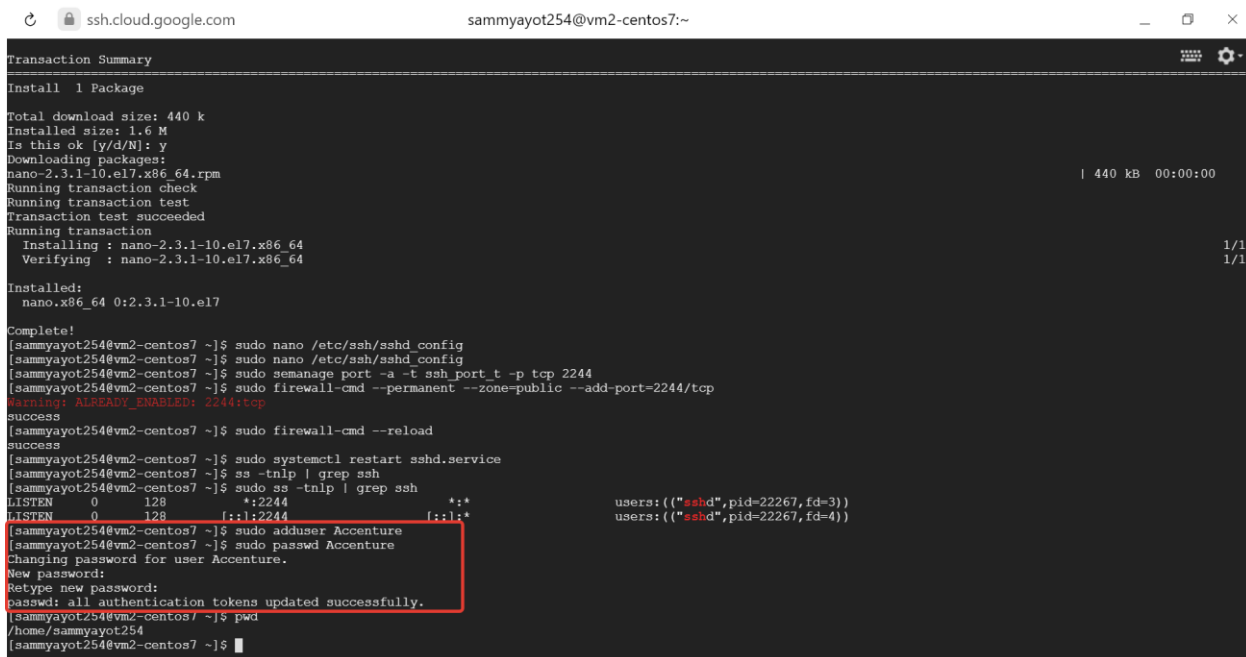
Complete!
[sammyayot254@vm2-centos7 ~]$ sudo nano /etc/ssh/sshd_config
[sammyayot254@vm2-centos7 ~]$ sudo nano /etc/ssh/sshd_config
[sammyayot254@vm2-centos7 ~]$ sudo semanage port -a -t ssh_port_t -p tcp 2244
[sammyayot254@vm2-centos7 ~]$ sudo firewall-cmd --permanent --zone=public --add-port=2244/tcp
Warning: ALREADY_ENABLED: 2244:tcp
success
[sammyayot254@vm2-centos7 ~]$ sudo firewall-cmd --reload
success
[sammyayot254@vm2-centos7 ~]$ sudo systemctl restart sshd.service
[sammyayot254@vm2-centos7 ~]$ ss -tnlp | grep ssh
[sammyayot254@vm2-centos7 ~]$ sudo ss -tnlp | grep ssh
LISTEN 0      128          *:2244          *:*              users: (("sshd",pid=22267,fd=3))
LISTEN 0      128          [::]:2244      [::]:*           users: (("sshd",pid=22267,fd=4))
[sammyayot254@vm2-centos7 ~]$ sudo adduser Accenture
[sammyayot254@vm2-centos7 ~]$ sudo passwd Accenture
Changing password for user Accenture.
New password:
Retype new password:
passwd: all authentication tokens updated successfully.
[sammyayot254@vm2-centos7 ~]$ pwd
/home/sammyayot254
[sammyayot254@vm2-centos7 ~]$ cd /home
[sammyayot254@vm2-centos7 home]$ ls
Accenture  sammyayot254
[sammyayot254@vm2-centos7 home]$ sudo mkdir TEST
[sammyayot254@vm2-centos7 home]$ ls -la
total 4
drwxr-xr-x 3 sammyayot254 1229
drwxr-xr-x 3 sammyayot254 1229
[sammyayot254@vm2-centos7 home]$ su -
Password:
[sammyayot254@vm2-centos7 home]$ sudo su -
[root@vm2-centos7 ~]# cat /etc/group
root:x:0:
bin:x:1:
daemon:x:2:
sys:x:3:
adm:x:4:sammyayot254
tty:x:5:
```

## 18. Настроить синхронизацию папки TEST между двумя серверами, каждые 3 минуты.

```
ssh.cloud.google.com sammyayot254@vm2-centos7:/home
GNU nano 2.3.1 File: synchron.sh
#!/bin/bash
rsync -avz Accenture@35.228.202.200:/home/TEST
```

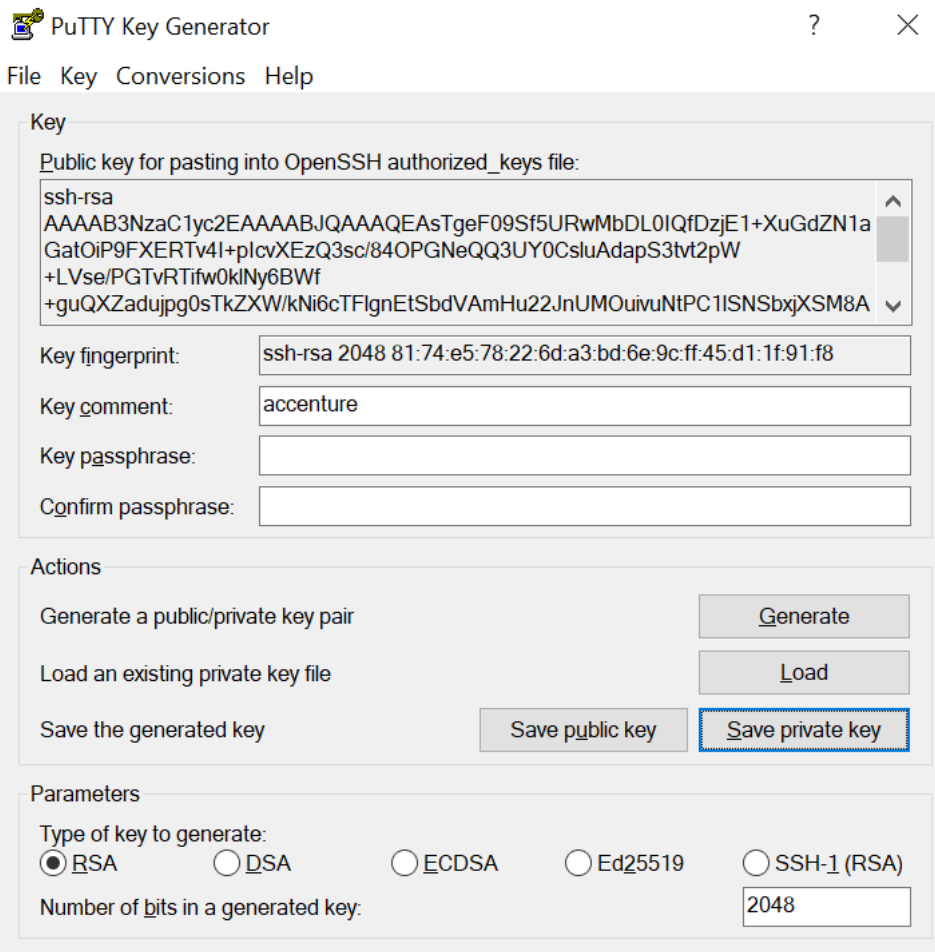


Создать пользователя “Accenture” и настроить аутентификацию, авторизацию по SSH ключу на обоих серверах.



```
ssh.cloud.google.com root@vm1-centos7:~  
[root@vm1-centos7 ~]# cat /etc/group  
root:x:0:  
bin:x:1:  
daemon:x:2:  
sys:x:3:  
adm:x:4:sammyayot254,Accenture  
tty:x:5:  
disk:x:6:  
lp:x:7:  
mem:x:8:  
kmem:x:9:  
wheel:x:10:  
cdrom:x:11:  
mail:x:12:postfix  
man:x:15:  
dialout:x:18:  
floppy:x:19:  
games:x:20:  
tape:x:33:  
video:x:39:sammyayot254  
ftp:x:50:  
lock:x:54:  
audio:x:63:  
nobody:x:99:  
users:x:100:  
utmp:x:22:  
uucp:x:35:  
input:x:999:  
systemd-journal:x:190:  
systemd-network:x:192:  
dbus:x:81:  
polkitd:x:998:  
ssh_keys:x:997:Accenture  
ntp:x:38:  
sshd:x:74:Accenture  
postdrop:x:90:  
postfix:x:89:  
chrony:x:996:  
cgred:x:995:  
google-sudoers:x:1000:sammyayot254,Accenture  
sammyayot254:x:1001:  
Accenture:x:1002:  
[root@vm1-centos7 ~]#
```

Показать публичные IP адреса для доступа к серверам под учетной записью Accenture и SSH ключ.  
**Публичные IP vm1: 35.228.202.200 (порт: 2233)**  
**Публичные IP vm2: 35.228.0.134 (порт: 2244)**



Google Cloud Platform console showing VM instance details for 'Accenture-Test'. The page includes a navigation sidebar on the left with categories like 'Virtual machines', 'Storage', and 'Marketplace'. The main content area displays configuration options such as 'Availability policies', 'Custom metadata', and 'SSH Keys'. A red box highlights the 'accenture' SSH key entry, which contains the following text:

```
ssh-rsa AAAAB3NzaC1yc2EAAAABJQAAAQEAstge...
mBfQ6DqGfZB/ssFqk6jkuCzesrww= accenture
```

Other visible details include the service account '972747301276-compute@developer.gserviceaccount.com' and 'Cloud API access scopes' set to 'Allow default access'.

PuTTY Configuration dialog box. The 'Category' list on the left shows 'SSH' is selected. The main panel, titled 'Basic options for your PuTTY session', contains the following settings:

- Host Name (or IP address):** 35.228.0.134
- Port:** 2244
- Connection type:** SSH (selected)
- Saved Sessions:** A list containing 'vm2', 'Default Settings', 'vm1', and 'vm2' (highlighted). Buttons for 'Load', 'Save', and 'Delete' are present.
- Close window on exit:** Only on clean exit (selected)

Buttons at the bottom include 'About', 'Help', 'Open', and 'Cancel'.

```
accenture@vm2-centos7:~  
login as: accenture  
Authenticating with public key "accenture"  
[accenture@vm2-centos7 ~]$ pwd  
/home/accenture  
[accenture@vm2-centos7 ~]$ █
```

Также у учетной записи Accenture должны быть Root права.

```
ssh.cloud.google.com root@vm2-centos7:~  
Defaults env_keep += "LC_MONETARY LC_NAME LC_NUMERIC LC_PAPER LC_TELEPHONE"  
Defaults env_keep += "LC_TIME LC_ALL LANGUAGE LINGUAS _XKB_CHARSET XAUTHORITY"  
  
#  
# Adding HOME to env_keep may enable a user to run unrestricted  
# commands via sudo.  
# Defaults env_keep += "HOME"  
Defaults secure_path = /sbin:/bin:/usr/sbin:/usr/bin  
  
## Next comes the main part: which users can run what software on  
## which machines (the sudoers file can be shared between multiple  
## systems).  
## Syntax:  
##  
## user MACHINE=COMMANDS  
##  
## The COMMANDS section may have other options added to it.  
##  
## Allow root to run any commands anywhere  
root ALL=(ALL) ALL  
Accenture ALL=(ALL) ALL  
  
## Allows members of the 'sys' group to run networking, software,  
## service management apps and more.  
# %sys ALL = NETWORKING, SOFTWARE, SERVICES, STORAGE, DELEGATING, PROCESSES, LOCATE, DRIVERS  
  
## Allows people in group wheel to run all commands  
%wheel ALL=(ALL) ALL  
  
## Same thing without a password  
# %wheel ALL=(ALL) NOPASSWD: ALL  
  
## Allows members of the users group to mount and unmount the  
## cdrom as root  
# %users ALL=/sbin/mount /mnt/cdrom, /sbin/umount /mnt/cdrom  
  
## Allows members of the users group to shutdown this system  
# %users localhost=/sbin/shutdown -h now  
  
:wq█
```