

Steps to Install Software (Linux)

1. Sign up for free Trading API account with [Alpaca](#) and save API Keys (Paper and Live)
2. Navigate to [Google Cloud](#) and create an account
 - a. Name project (opt for no organization) and enable billing (\$300 credit then \$0.03/hr)
3. Navigate to Console > Navigation Menu > Products > Compute Engine > Virtual Machines > VM Instances > Create Instance and Enable Compute Engine API
4. Create your virtual machine
 - a. Select name (ex. pancakes)
 - b. Select closest region
 - c. Select E2 series

Machine configuration

Name * ?

Region * ?

Zone * ?

Region is permanent

Google will choose a zone on your behalf, maximizing VM obtainability. Zone is permanent.

NEW: Google Axion machine series now in Preview 1 of 2 X

Try the new N4A series, Google's next generation of Arm-based Axion VMs. Try now

✓ General purpose Compute optimized Memory optimized Storage optimized GPUs

Machine types for common workloads, optimized for cost and flexibility

Series ?	Description	vCPUs ?	Memory ?	CPUs ?
<input type="radio"/> C4	Consistently high performance	2 - 288	4 - 2,232 GB	Intel
<input type="radio"/> C4A	Arm-based consistently high performance	1 - 96	2 - 768 GB	Google
<input type="radio"/> C4D	Consistently high performance	2 - 384	3 - 3,072 GB	AMD
<input type="radio"/> N4	Flexible & cost-optimized	2 - 80	4 - 640 GB	Intel
<input type="radio"/> N4A	Preview Arm-based flexibility & cost optimization	1 - 64	2 - 512 GB	Google
<input type="radio"/> N4D	Flexible & cost-optimized	2 - 96	4 - 768 GB	AMD
<input type="radio"/> C3	Consistently high performance	4 - 192	8 - 1,536 GB	Intel
<input type="radio"/> C3D	Consistently high performance	4 - 360	8 - 2,880 GB	AMD
<input checked="" type="radio"/> E2	Low cost, day-to-day computing	0.25 - 32	1 - 128 GB	Intel
<input type="radio"/> N2	Balanced price & performance	2 - 128	2 - 864 GB	Intel
<input type="radio"/> N2D	Balanced price & performance	2 - 224	2 - 896 GB	AMD

Create Cancel Equivalent code

5. Open your local terminal (Ctrl + Alt + T then search Terminal)
6. Run in the local terminal to create keys


```
ssh-keygen -t rsa -b 4096 -f ~/.ssh/pancakes-key -C "official_admin@algora1.com"
a. Press Enter to for no pass phrase twice
```
7. Run in local terminal to set permissions for keys


```
chmod 400 ~/.ssh/pancakes-key
chmod 644 ~/.ssh/pancakes-key.pub
```
8. Run in local terminal to install gcloud


```
sudo apt-get update && sudo apt-get install -y apt-transport-https ca-certificates gnupg
curl && curl https://packages.cloud.google.com/apt/doc/apt-key.gpg | sudo gpg --dearmor
-o /usr/share/keyrings/cloud.google.gpg && echo "deb
[signed-by=/usr/share/keyrings/cloud.google.gpg] https://packages.cloud.google.com/apt
cloud-sdk main" | sudo tee -a /etc/apt/sources.list.d/google-cloud-sdk.list && sudo apt-get
update && sudo apt-get install -y google-cloud-cli && gcloud init
a. Authenticate your Google account
b. Select your project
c. Select your local region
```
9. Run in the local terminal to upload keys to the virtual machine


```
gcloud compute instances add-metadata pancakes \
--zone=us-central1-a \
--metadata "ssh-keys=official_admin:$(cat ~/.ssh/pancakes-key.pub)"
a. Enter password to local user account (used to login to local computer)
```
10. Download investing engines, drag to desktop, and unzip
11. Run in local terminal to upload investing engine to virtual machine (ensure file is in desktop)


```
scp -i ~/.ssh/pancakes-key ~/Desktop/BEXP
official_admin@56.73.92.8:/home/official_admin/
a. Are you sure you want to continue connecting (yes/no/[fingerprint])?
Enter yes
```
12. Run in the local terminal to connect (SSH) to the virtual machine


```
ssh -i ~/.ssh/pancakes-key official_admin@56.73.92.8
```
13. Run in connected local terminal to install python and active virtual environment


```
sudo apt update
sudo apt install python3 python3-pip python3-venv
python3 -m venv venv
source venv/bin/activate
pip install pandas requests numpy alpaca-py python-dotenv colorama pytz pyinstaller
```
14. Ensure transfer file has proper permission


```
chmod +x BEXP
```
15. Run in connected local terminal to edit bashrc script file


```
nano ~/.bashrc
a. Scroll to bottom of file and paste the following
*Use keys from paper account when deploying PMNY algorithm
export ALPACA_API_KEY="M7X3C9VQF2L8J5TZH1RKD4NSWY"
export ALPACA_SECRET_KEY="Lw3Vn8qTgRzF1sA2pYxJ9kM4hCjB6eNfUoZtQ5rXvDiE7mSb"
b. Save File - Press Ctrl + X then press Y then Enter
c. Run in connected local terminal to apply changes
source ~/.bashrc
```

Steps to Run Software

1. Run in a new local terminal to connect (SSH) to the virtual machine
`ssh -i /Users/isseyohannes/.ssh/pancakes-key official_admin@56.73.92.8`
2. Run in connected local terminal to activate virtual environment
`source venv/bin/activate`
3. Run in connected local terminal to open separate session
`screen -S investing`
3. Run in connected local terminal to view available investing engines
`ls`
4. Run in connected local terminal to run selected investing engine
`./BEXP`
5. Run in local terminal to connected/reconnect detached window to check algorithm status
`screen -r investing`
 - a. Leave without disrupting
`Ctrl + A then Ctrl + D`
 - b. Stop algorithm
`Ctrl + A then K`
 - i. Really kill this window [y/n]
Enter y
6. Check the log file to view status live (prints positions, profit/loss, etc.)
`tail -f bexp_investing.log`
 - a. Clear investing log
`rm -rf bexp_investing.log`
7. List screens which are currently running
`screen -ls`

Subjective Information (Substitute with your information)

official_admin@algora1.com: Gmail used to create Google Cloud account for virtual machine

official_admin: Beginning of Gmail used to create Google Cloud account for virtual machine

56.73.92.8: External IP address found in Console > Navigation Menu > Products > Compute Engine > Virtual Machines > VM Instances

isseyohannes: Name the user of the local machine. Run **whoami** in local terminal to find your name

BEXP: Name of investing engine selected

bexp: Name of investing engine's lowercase composes appropriate .log file (ex. **bexp_investing.log**)

us-central1-a: Region of your virtual machine. Navigate to Console > Navigation Menu > Products > Compute Engine > Virtual Machines > VM Instances to view your region

pancakes : Name of virtual machine. Navigate to Console > Navigation Menu > Products > Compute Engine > Virtual Machines > VM Instances to view name of instance

Investing Engines Available

BEXP : BEXP combines all four proven strategies into one diversified engine. It caps exposure at 25% per ticker (TSLA, NVDA, AAPL, AMD) for smoother equity curves while applying the exact same high-conviction signal logic as the individual bots. Real-time, per-second monitoring keeps the basket balanced and protects against downside momentum.

TSLA : Full-capital deployment on Tesla, Inc. when high-probability upside signals appear. Per-second monitoring rapidly cuts exposure the moment negative momentum emerges.

NVDA : Full-capital deployment on NVIDIA Corp. when high-probability upside signals appear. Per-second monitoring rapidly cuts exposure the moment negative momentum emerges.

AAPL : Full-capital deployment on Apple, Inc. when high-probability upside signals appear. Per-second monitoring rapidly cuts exposure the moment negative momentum emerges.

AMD : Full-capital deployment on Advanced Micro Devices, Inc. when high-probability upside signals appear. Per-second monitoring rapidly cuts exposure the moment negative momentum emerges.

PMNY : PMNY is the paper-trading version of BEXP, designed for users who want to test the engine risk-free. It combines all four strategies into a diversified basket with a 25% cap per ticker (TSLA, NVDA, AAPL, AMD), using the same high-conviction signals and second-by-second monitoring to manage risk and balance exposure.