User Guides: CLI Wallet/Daemon Isolation with Qubes + Whonix

4-4 minutes

How to use Monero CLI/daemon with Qubes + Whonix

With Qubes + Whonix you can have a Monero wallet that is without networking and running on a virtually isolated system from the Monero daemon which has all of its traffic forced over Tor.

Qubes gives the flexibility to easily create separate VMs for different purposes. First you will create a Whonix workstation for the wallet with no networking. Next, another Whonix workstation for the daemon which will use your Whonix gateway as it's NetVM. For communication between the wallet and daemon you can make use of Qubes qrexec.

This is safer than other approaches which route the wallets rpc over a Tor hidden service, or that use physical isolation but still have networking to connect to the daemon. In this way you don't need any network connection on the wallet, you preserve resources of the Tor network, and there is less latency.

1. Create Whonix AppVMs:

- Using a Whonix workstation template, create two workstations as follows:

  - The first workstation will be used for your wallet, it will referred to as `monero-wallet-ws`. You will have `NetVM` set to none.

  - The second workstation will be for the `monerod` daemon, it will be referred to as `monerod-ws`. You will have `NetVM` set to the Whonix gateway `sys-whonix`. Before moving on, make sure this workstation has enough private storage. You can estimate how much space you need by checking the size of the raw blockchain. Keep in mind that the blockchain will take up more space with time.

2. In the AppVM `monerod-ws`:

- Create a `systemd` file.

```
user@host:~$ sudo nano /home/user/monerod.service
```

Paste the following contents:

```
[Unit]
Description=Monero Full Node
After=network.target

[Service]
User=user
Group=user

Type=forking
PIDFile=/home/user/.bitmonero/monerod.pid

ExecStart=/usr/bin/monerod --detach --data-dir=/home/user/.bitmonero \
    --no-igd --pidfile=/home/user/.bitmonero/monerod.pid \
    --log-file=/home/user/.bitmonero/bitmonero.log --p2p-bind-ip=127.0.0.1
```

```
Restart=always
PrivateTmp=true

[Install]
WantedBy=multi-user.target
```

- Make monerod daemon run on startup by editing the file `/rw/config/rc.local`.

```
user@host:~$ sudo nano /rw/config/rc.local
```

Add these lines to the bottom:

```
cp /home/user/monerod.service /lib/systemd/system/
systemctl start monerod.service
```

Make file executable.

```
user@host:~$ sudo chmod +x /rw/config/rc.local
```

- Create rpc action file.

```
user@host:~$ sudo mkdir /rw/usrlocal/etc/qubes-rpc
user@host:~$ sudo nano /rw/usrlocal/etc/qubes-rpc/user.monerod
```

Add this line:

```
socat STDIO TCP:localhost:18081
```

- Shutdown `monerod-ws`.

3. In the AppVM `monero-wallet-ws`:

- Edit the file `/rw/config/rc.local`.

```
user@host:~$ sudo nano /rw/config/rc.local
```

Add the following line to the bottom:

```
socat TCP-LISTEN:18081,fork,bind=127.0.0.1 EXEC:"qrexec-client-vm monerod-ws
user.monerod"
```

Make file executable.

```
user@host:~$ sudo chmod +x /rw/config/rc.local
```

- Shutdown `monero-wallet-ws`.

4. In dom0:

- Create the file `/etc/qubes-rpc/policy/user.monerod`:

```
[user@dom0 ~]$ sudo nano /etc/qubes-rpc/policy/user.monerod
```

Add the following line:

```
monero-wallet-ws monerod-ws allow
```