



This Guide is based off of the SmartCash SmartNode Setup Guide v1.2, windows 10, Date 13/01/2018, by (Jazz) yoyomonkey http://smartnodes.cc/files/SmartCash_SmartNode_Setup_Guide_v1.2.pdf

SmartCash SmartNode Setup Guide v1.0

Mac 10.13.2

Date 18/1/2018

By s@controllinghand.com

Introduction

Welcome to this step by step guide that will take you through the process of creating your own SmartCash SmartNode. This guide is aimed at the casual MAC user who has already installed the SmartCash Wallet, purchased SmartCash from an exchange but has little or no experience of using Linus or VPS (virtual private servers)

This is an in-depth guide that will be broken into sections. The document will attempt to give a very concise explanation of each step accompanied by relevant screengrabs.

As a recommendation, please read through each section first and try to understand what is going on before doing it. As soon as one section is complete, please move to the next one. Don't miss any steps and please take your time.

The views and opinions expressed in this document are from the author only. This document is not an official document of the SmartCash team and has only been created by a hive member in the hope to assist others.

Corrections and Comments

If you like the guide or would like to give any feedback, please contact s@controllinghand.com. If you really like this guide, please send SmartCash to SMQPqJJsY418A8dL7eJsLLq9KZk5NmCsZ

Creating a Virtual Private Server (VPS)

For a small monthly fee, you can run your own Virtual Private server to host a SmartNode without having to create one at home and having the extra headache of worrying about having your machine running 24/7 and managing static IP-addresses etc.

This guide has been created to give a step by step account using Digital Ocean. However, I would like to state that there is no recommended preference from the SmartCash team for picking a VPS service.

If you would like to see similar service offering please visit the OPTIONAL SECTION 3 for vultr.com in yoyomonkey's Guide http://smartnodes.cc/files/SmartCash_SmartNode_Setup_Guide_v1.2.pdf

A list has been compiled of alternate VPS providers and I would encourage all SmartNode creators to do their own research and pick the best service that suits them.

Typing "VPS Hosting Providers" in a Google Search should return a number of possible VPS providers that can be used.

Name	Link
Amazon AWS	https://aws.amazon.com/
Microsoft Azure	https://portal.azure.com/
Google Cloud	https://cloud.google.com/
Digital Ocean	https://www.digitalocean.com/
Vultr VPS	https://www.vultr.com/
Chunk Host	https://chunkhost.com/
VPS Net	https://www.vps.net/
Host-it.co.uk	https://www.host-it.co.uk
VPS City (SmartCash Accepted)	https://www.vps-city.com
Offshore Hosting Space (SmartCash Accepted)	http://offshorehostingspace.org/

Requirements

10,000 SmartCash for each SmartNode.

Computer for running a local wallet only to start nodes and hold funds. Mac is used in this guide, but other QT version wallets work.

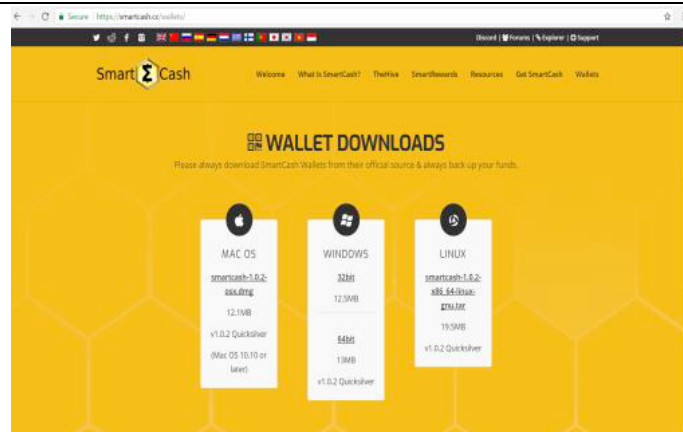
VPS server for remote node running 24hrs/day which includes:

- 1GB RAM (about half used for the OS and half for the daemon we install)
- 20GB drive (less than 1GB used for wallet, some for OS, and some for future.
- 1 Static IPV4 Address per node (IPV4 address that never changes) (No IPV6)

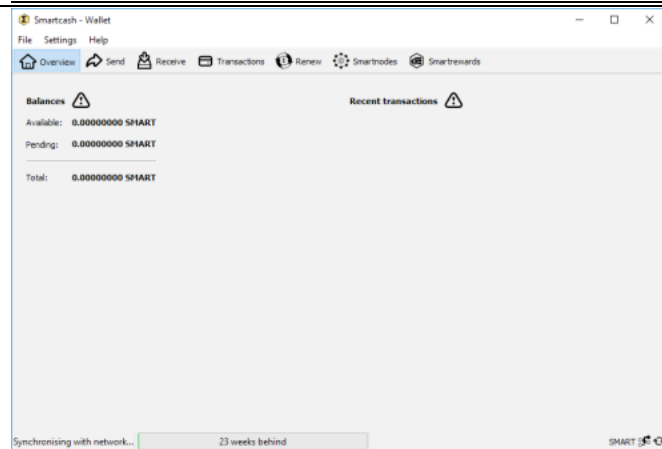
The remote node is actually the SmartNode, but for this guide we will call that remote node.

Section 1: Configure Mac SmartCash Wallet

1. Install 1.1.0 SmartCash wallet from
 - a. <https://smartcash.cc/wallets/>

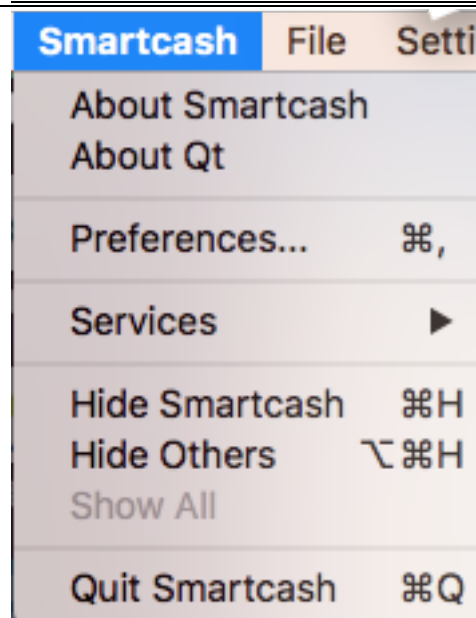


2. On your Mac machine start your SmartCash wallet.



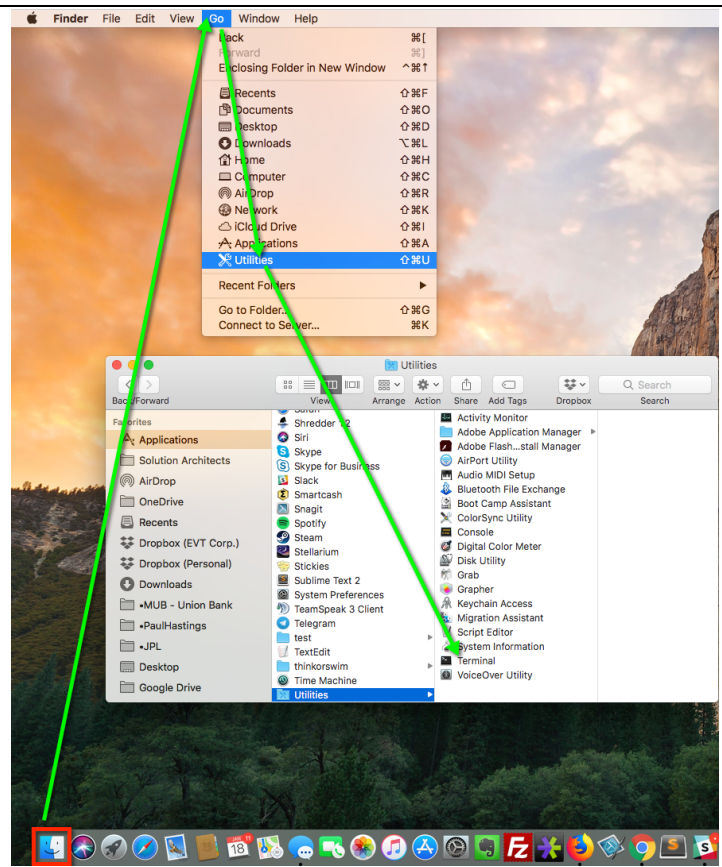
3. As soon as the wallet starts up go to the Smartcash menu and select "Quit Smartcash".

We need to make a Config change before syncing the wallet to make it able to manage the SmartNodes



4. To run a SmartNode we need to create a smartcash.conf file in the Smartcash folder (or the Data directory you selected when you installed the SmartCash Installer).

Bring up a terminal window on your mac.
Click on your Finder -> Go -> Utilities -> terminal
Double click on terminal and a window will pop up.



5. In the terminal type:

```
cd ~/Library/Application\ Support/smartcash/  
pico smartcash.conf
```

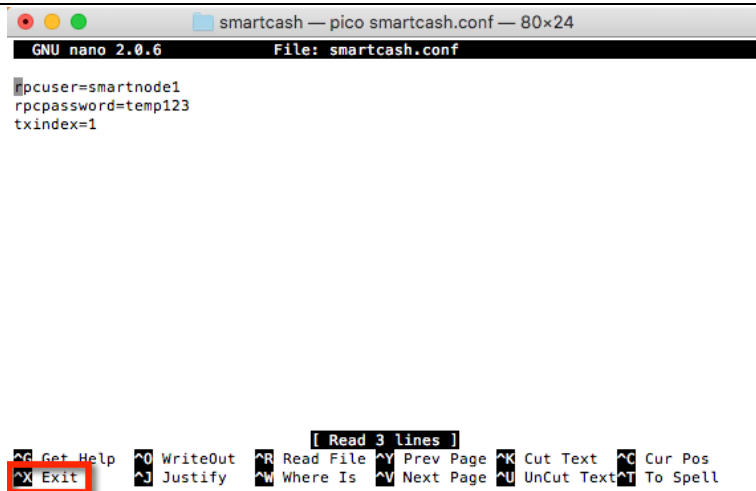
```
smartcash — -bash — 80x24  
[Seans-MacBook-Pro:smartcash seans$ cd ~/Library/Application\ Support/smartcash/ ]  
[Seans-MacBook-Pro:smartcash seans$ pico smartcash.conf ]  
Seans-MacBook-Pro:smartcash seans$
```

6. input the following into the smartcash.conf file

```
rpcuser=AUSERNAME  
rpcpassword=PASSWORD  
txindex=1
```

Make up any username and password of your choice

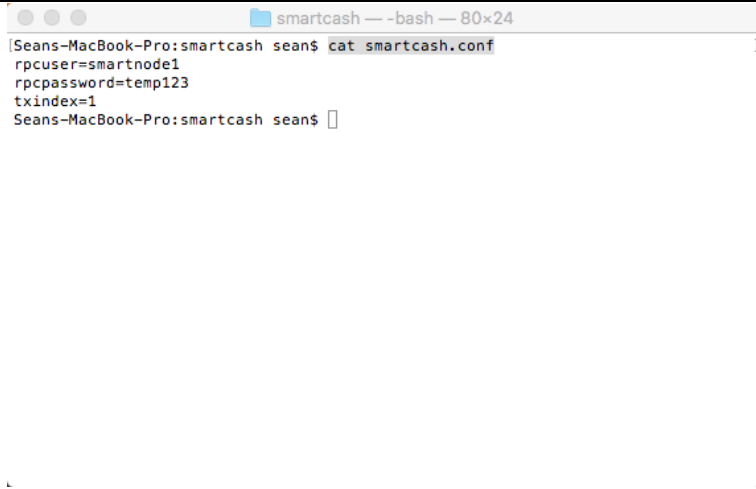
Then hit CTRL-X to exit



```
smartcash — pico smartcash.conf — 80x24  
GNU nano 2.0.6 File: smartcash.conf  
rpcuser=smartnode1  
rpcpassword=temp123  
txindex=1  
[ Read 3 lines ]  
⌘ Get Help ⌘ WriteOut ⌘ Read File ⌘ Prev Page ⌘ Cut Text ⌘ Cur Pos  
⌘ Exit ⌘ Justify ⌘ Where Is ⌘ Next Page ⌘ UnCut Text ⌘ To Spell
```

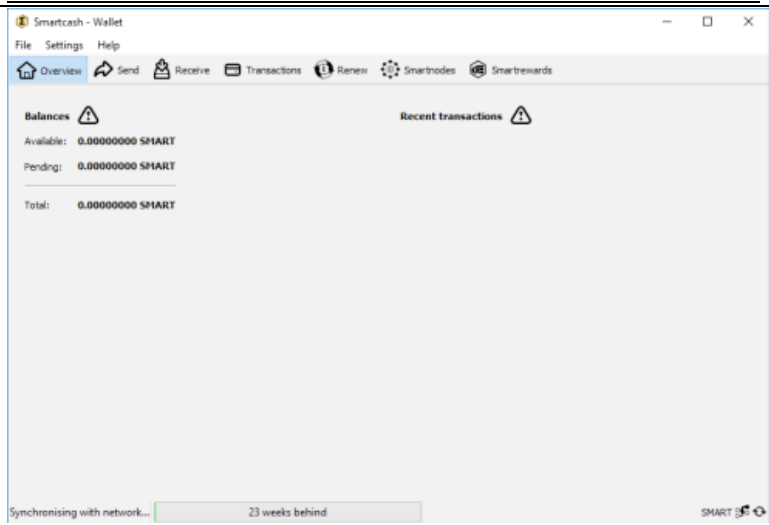
7. To validate the file was created with the correct data type

```
cat smartcash.conf
```

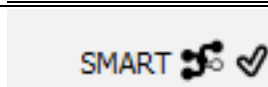


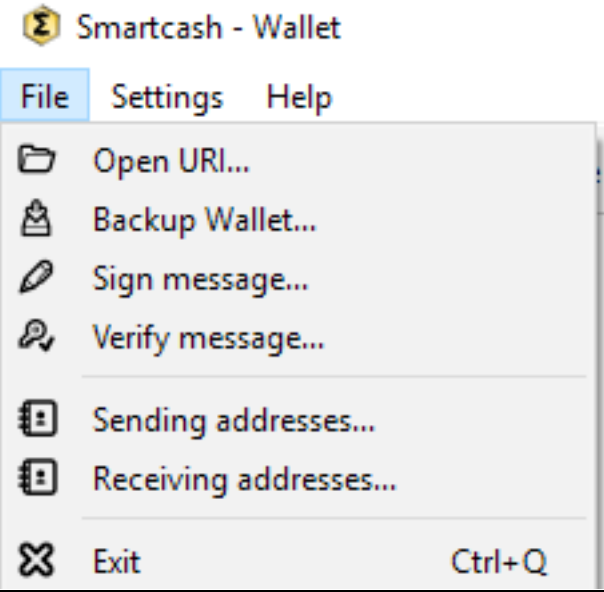
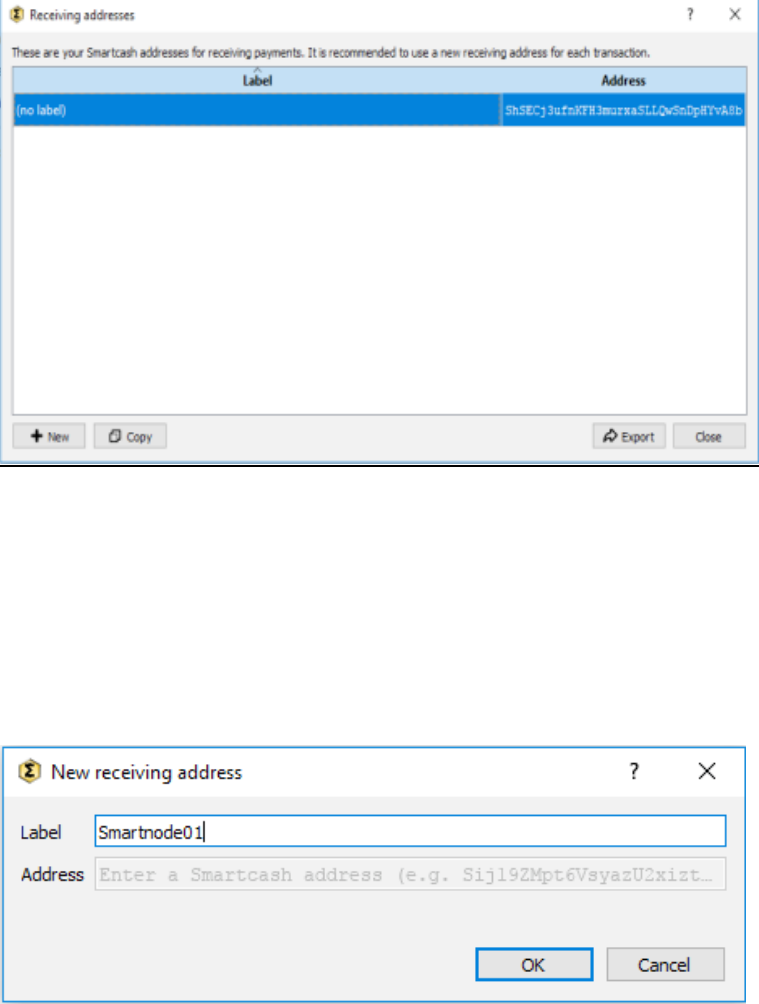
```
smartcash — -bash — 80x24  
Seans-MacBook-Pro:smartcash sean$ cat smartcash.conf  
rpcuser=smartnode1  
rpcpassword=temp123  
txindex=1  
Seans-MacBook-Pro:smartcash sean$
```

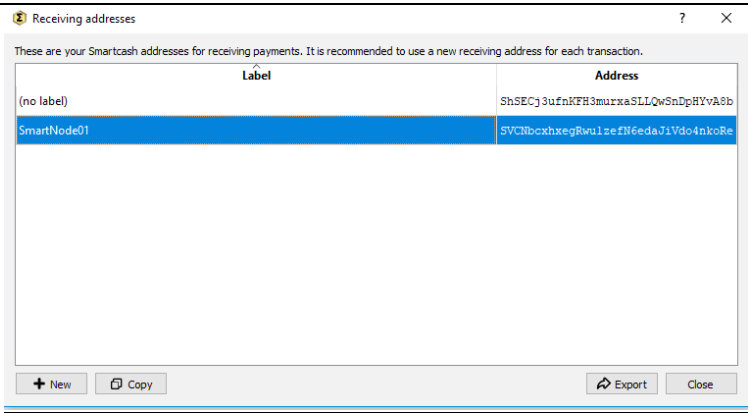
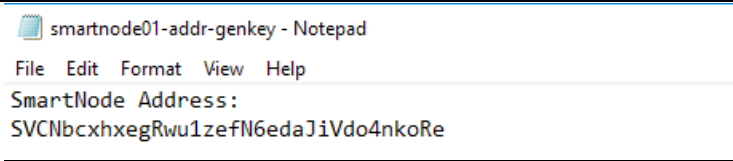
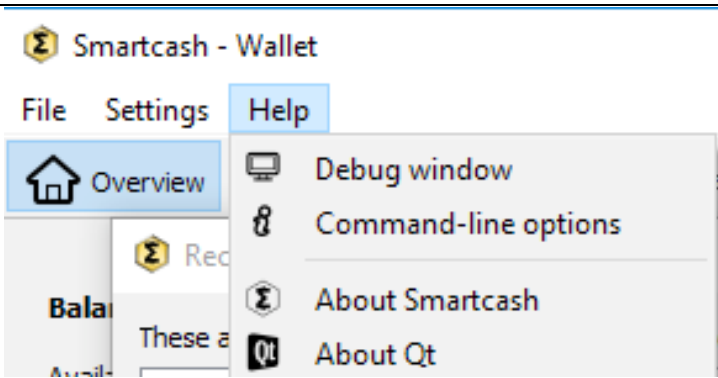
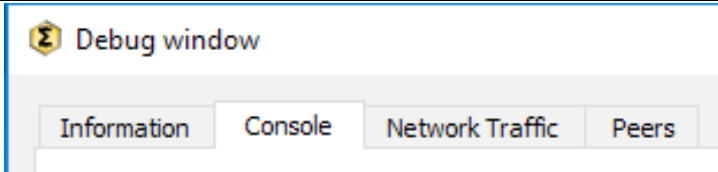
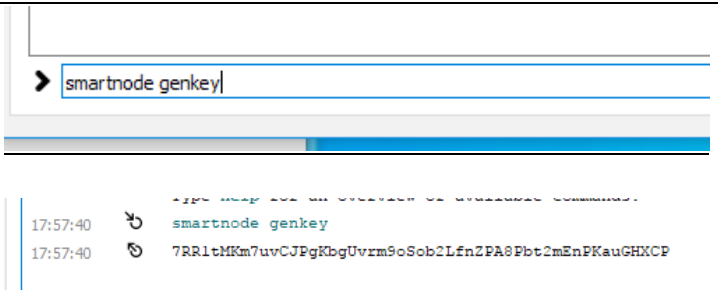
8. Start the SmartCash wallet again

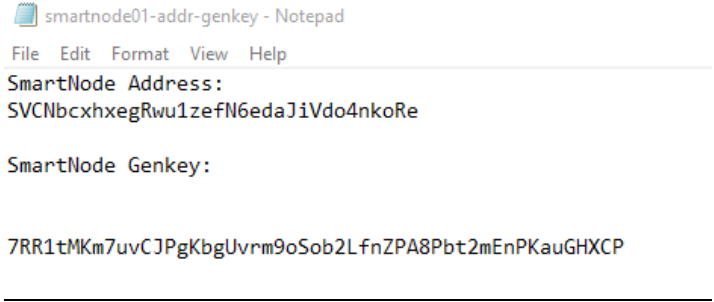
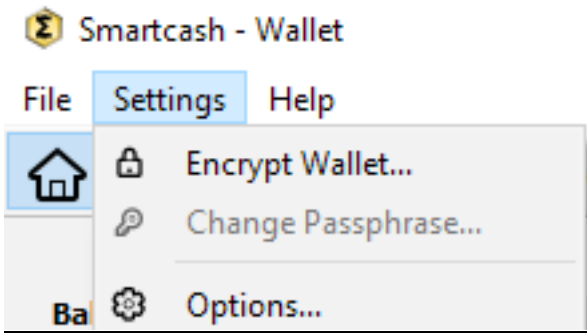
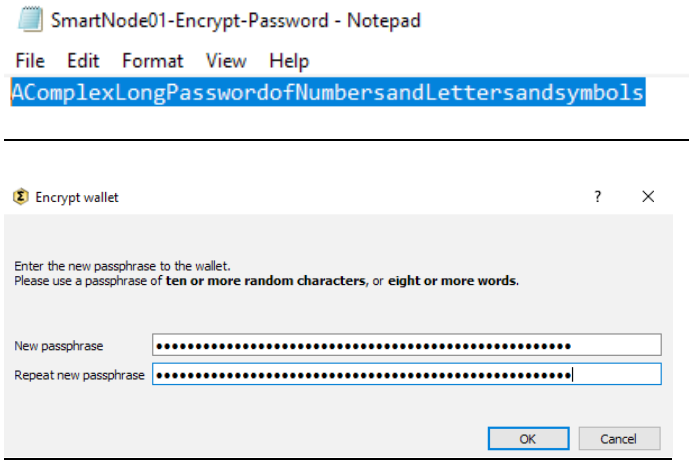
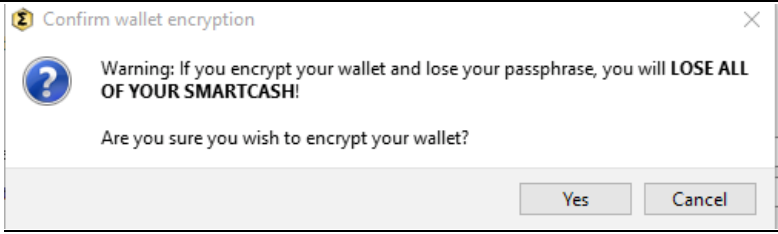


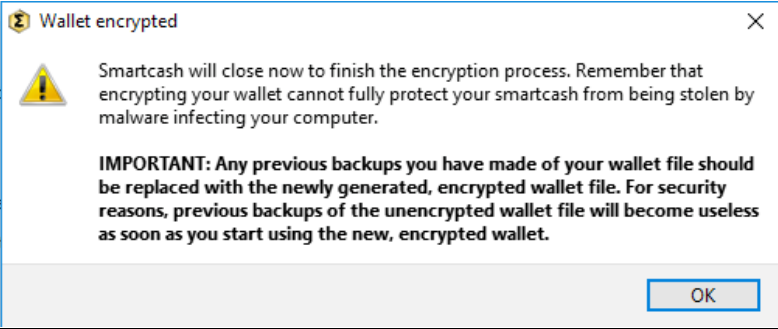
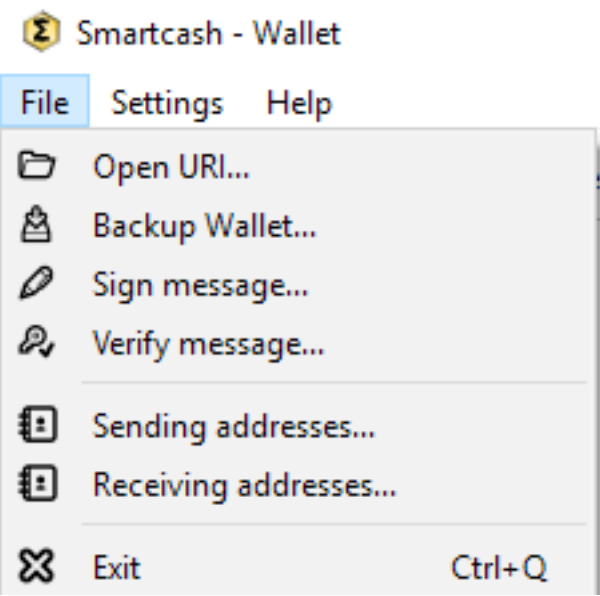
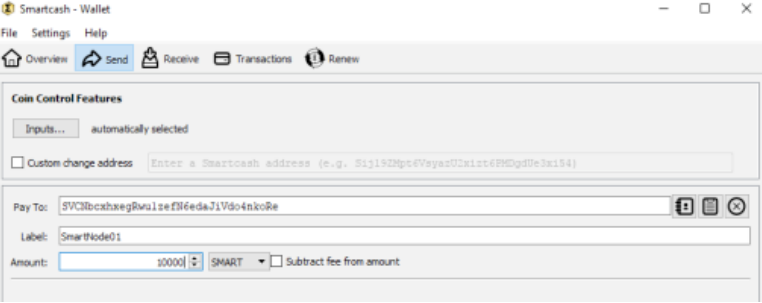

9. Wait for the wallet to fully sync. This can take up to 8 hours depending on many factors including Network Traffic. Look for the tick in the Bottom Right Corner of the wallet to signify that the wallet has fully synced.

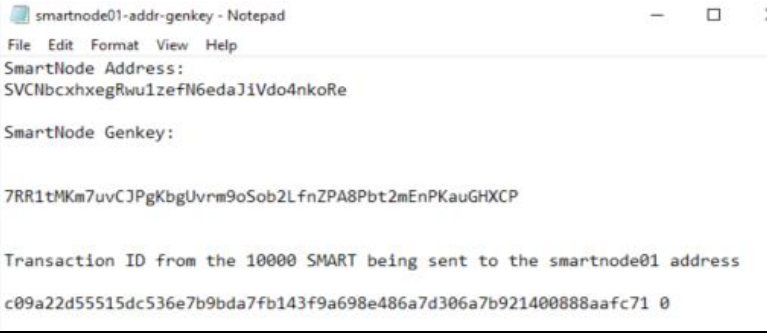


<p>*It might be possible to bootstrap the blockchain to save some time, but I haven't completed to see if that works.</p>	
<p>10. Go to File in the top menu bar and then select "Receiving addresses".</p>	 <p>The screenshot shows the 'Smartcash - Wallet' application window. The 'File' menu is open, displaying options: 'Open URI...', 'Backup Wallet...', 'Sign message...', 'Verify message...', 'Sending addresses...', 'Receiving addresses...', and 'Exit'. The 'Receiving addresses...' option is highlighted.</p>
<p>11. Create a new address. Click New. Call it something identifiable i.e. "SmartNode01". Click Ok.</p> <p>A second address should now appear in Receiving Addresses Window.</p> <p>Click the button "Copy".</p>	 <p>The first screenshot shows the 'Receiving addresses' window with a table containing one entry: 'SmartNode01' with the address 'Sh5ECy3ufnKTH3muraSLLQwSnDp8TVAb'. The second screenshot shows the 'New receiving address' dialog with 'Smartnode01' entered in the Label field and a placeholder for the address.</p>

	
<p>12. Paste the long address and save it in a file called: "smartnode01-addr-genkey.txt" Close the Receiving addresses window.</p>	
<p>13. In the SmartCash wallet select Help in the top menu bar. Click "Debug window"</p>	
<p>14. In the Debug window click the console tab.</p>	
<p>15. At the bottom of the window type into the input box.</p> <p><code>smartnode genkey</code></p> <p>This will generate a long string of text. Copy and paste this into the smartnode01-addr-genkey file as you will need it later</p> <p>Remember to Save the file.</p>	

	
<p>16. VERY IMPORTANT</p> <p>We now have to encrypt the wallet with a secure password.</p> <p>Go to the main SmartCash window and go to “Settings” in the menu and select Encrypt Wallet</p>	
<p>17. First, create a complex password in a notepad file (Save it as “SmartWallet-Encrypt-Password.txt”) and keep this somewhere very safe. Copy and paste this password into the Encrypt wallet Window twice and select OK.</p> <p>If you lose this password you will lose your SmartCash and no one will be able to get it back. Keep this file really safe!</p>	
<p>18. Read and confirm that you understand the message that if you lose this password there is no way of getting your SmartCash back!</p> <p>If you agree click “Yes” to continue.</p>	

<p>19. Please read this window carefully and backup your password file.</p> <p>Once the “SmartWallet-Encrypt-Password.txt” file is backed up (printed it out on paper and I saved it on usb pendrive) remove this file from the machine itself.</p> <p>Select “OK” and the SmartCash Wallet will close.</p>	 <p>The image shows a dialog box titled "Wallet encrypted" with a yellow warning icon. The text inside says: "Smartcash will close now to finish the encryption process. Remember that encrypting your wallet cannot fully protect your smartcash from being stolen by malware infecting your computer." Below this, it states: "IMPORTANT: Any previous backups you have made of your wallet file should be replaced with the newly generated, encrypted wallet file. For security reasons, previous backups of the unencrypted wallet file will become useless as soon as you start using the new, encrypted wallet." There is an "OK" button at the bottom right.</p>
<p>20. Start the Smartcash wallet again.</p> <p>Back up the wallet file by going to the File Menu and Backup Wallet.</p> <p>Save this file to two USB backups and label them. The filename defaults to name as wallet.dat. Do not use these USB drives for any other use as these store your SmartCash funds.</p>	 <p>The image shows the "Smartcash - Wallet" application window with the "File" menu open. The menu options are: "Open URI...", "Backup Wallet...", "Sign message...", "Verify message...", "Sending addresses...", "Receiving addresses...", and "Exit". The "Exit" option has a keyboard shortcut of "Ctrl+Q".</p>
<p>21. You are now ready to send 10,000 SmartCash to the SmartNode01 address from your exchange or another Smartcash address.</p> <p>Send exactly 10,000 in one transaction. You can send from within the same wallet if you wish. Sending from an exchange may require an email approval – accept that and wait for an hour or two. Once off an exchange, in network transfers are seconds.</p>	 <p>The image shows the "Smartcash - Wallet" application window with the "Send" button clicked. The "Coin Control Features" section is visible, showing "Inputs..." as "automatically selected". Below this, there is a "Custom change address" checkbox and a text field for "Enter a Smartcash address (e.g. S1p192Qp6Veyao02x1ot6P8DgdDe3a154)". The "Pay To:" field contains the address "SVC0bcbxsegBwulsefBfeda71Vdo4nkoRe". The "Label:" field contains "SmartNode01". The "Amount:" field is set to "10000" and the "SMART" dropdown is selected. There is a checkbox for "Subtract fee from amount".</p>
<p>22. In the Windows Wallet Debug Console (Help in the Menu and Debug Console) type:</p> <p><code>smartnode outputs</code></p>	 <p>The image shows the "smartnode outputs" command output in the Windows Wallet Debug Console. The output is as follows:</p> <pre>02:25:43 smartnode outputs 02:25:43 { c09a22d55515dc536e7b9bda7fb143f9a698e486a7d306a7b921400888aafc71 0 }</pre>

<p>Save the key and index(0,1,2...) in the file</p> <p>Smartnode01-addr-genkey.txt (Section 1: Step12)</p> <p>We will need this file later on.</p>	
<p>At this point you should have the following to proceed:</p> <p>23. Keep this info:</p> <p>SmartNode Name: <from step 11></p> <p>SmartNode Address: <from step 11></p> <p>SmartNode Genkey: <from step 15></p> <p>SmartNode Transaction ID: <from step 22></p> <p>SmartNode Index ID: <from step 22></p>	
<p>Once that is confirmed and you have backed up your files somewhere safe.</p> <p>Please continue with Section 2</p>	

Section 2: Using the built-in SSH client in MAC OSX

Mac OS X includes a command-line SSH client as part of the operating system. To use it, go to Finder, and select Go-> Utilities from the top menu. Then look for Terminal. Terminal can be used to get a local terminal window, and also supports SSH connections to remote servers.

RUNNING SSH FROM THE TERMINAL COMMAND LINE

Once you have the terminal window open, you have two alternatives. The first approach is to type `ssh hostname` or `ssh user@hostname` into the terminal window. This is more familiar for Linux and Unix users who are used to using a command line.

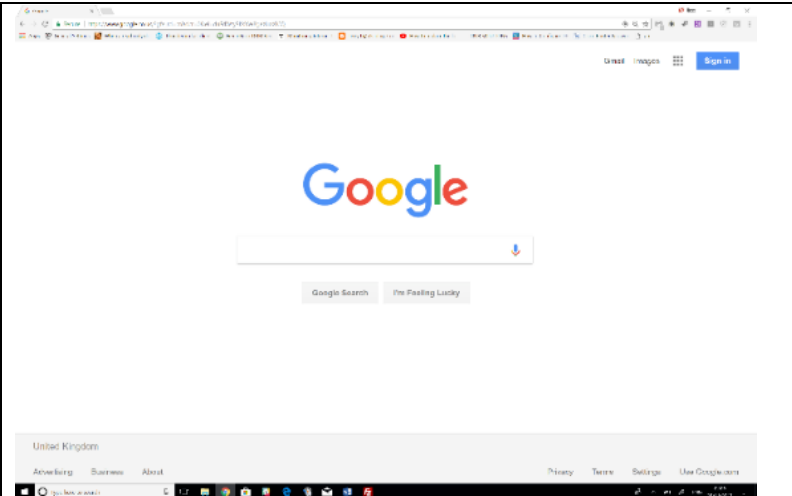
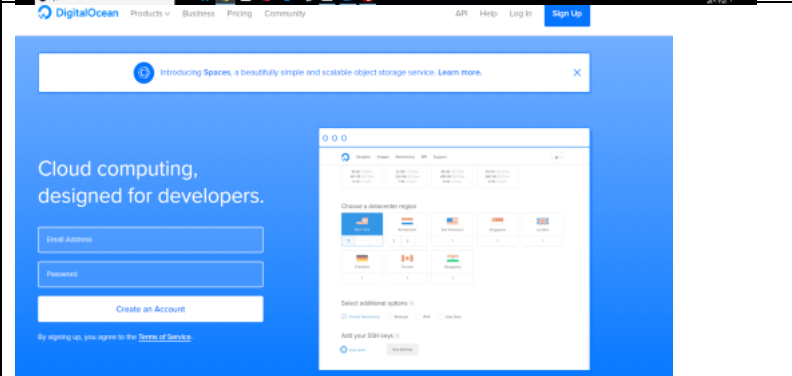
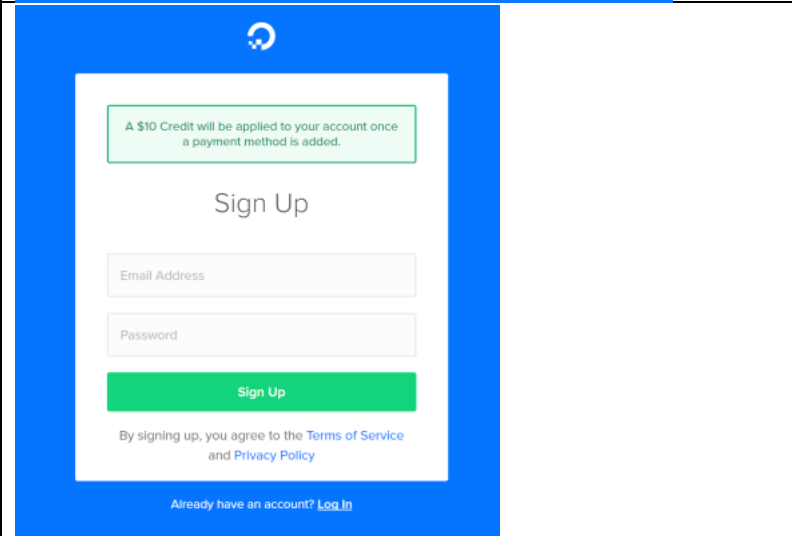
RUNNING SSH WITH A GRAPHICAL USER INTERFACE

The second option is to select New Remote Connection... from the Shell menu of Terminal. This opens a graphical dialog asking for the host to connect to and the user name. This also allows saving connections. This is recommended for users who are not accustomed to using a command line.

We will show you examples how to use this in the next section.

Section 3: Digital Ocean sign up and Droplet Creation

Next are the steps to create a Virtual Server on Digital Ocean. For a small amount each month you can have an Ubuntu machine running in the cloud 24 hours a day, 7 days a week to run your SmartCash SmartNode.

<p>1. Open Google Chrome and go to https://www.digitalocean.com/</p>	
<p>2. Click on the blue "Sign In" button in the top right</p>	
<p>3. Enter your email and create a password.</p>	

4. Go to your email and check for a digital ocean email. Confirm the email.

DigitalOcean - Please confirm your email address.



DigitalOcean <support@support.digitalocean.com>
Today, 02:16
You

Thanks for signing up for DigitalOcean! Please click the link below to confirm your email address.

https://cloud.digitalocean.com/account_verification/email/Y

Happy coding!
Team DigitalOcean

5. Enter in Payment Details so that you can create a Droplet (VPS)

Delayed Ticket Creation via Contact Form

Welcome Support You have \$0 in refund credit

Confirm Email Verification Create Droplet

Billing Info

Select your preferred payment method and enter your details. We use this info for account verification, your credit card won't be charged now.

Credit / Debit Card PayPal

ENTER CARD DETAILS

Card number MM / YY CVC

BILLING ADDRESS

First Name Last Name

Street Address

City State / Region Postal Code

Phone Number

6. Once this is all done, log in again to Digital Ocean and go to "Create Droplet"

Droplets Spaces Images Networking Monitoring API Support Create

Enhance the security of your account by enabling two-factor authentication. [Enable Two-Factor Authentication](#)

Droplets Volumes

Looks like you don't have any Droplets. Fortunately, it's very easy to create one.

Create Droplet

7. Select an Ubuntu Distribution use Ubuntu Version 16.04 LTS. Select a monthly plan.

Our suggestion is to setup with 1GB or more of RAM. Although, 512MB of RAM will work for a few days, it will often cause the wallet to lockup when it runs out of memory. As we add features, our wallets will use more resources too.

Choose an image

Distribution One-click apps

Ubuntu FreeBSD Proxmox Debian CentOS CoreOS

Choose a size

Standard High-Memory High-CPU

Enough RAM, CPU, and storage space needed to get applications off the ground.








15-mo \$0.00/mo	10-mo \$0.00/mo	15-mo \$0.00/mo	20-mo \$0.00/mo	40-mo \$0.00/mo	80-mo \$0.00/mo
1GB / 1GB / 1GB 20 GB / 100 GB / 100 GB 2 TB / 100 GB	1GB / 1GB / 1GB 30 GB / 100 GB / 100 GB 2 TB / 100 GB	2 GB / 1GB / 1GB 20 GB / 100 GB / 100 GB 2 TB / 100 GB	2 GB / 1GB / 1GB 40 GB / 100 GB / 100 GB 2 TB / 100 GB	4 GB / 1GB / 1GB 60 GB / 100 GB / 100 GB 2 TB / 100 GB	8 GB / 1GB / 1GB 80 GB / 100 GB / 100 GB 2 TB / 100 GB
160-mo \$0.00/mo	320-mo \$0.00/mo	480-mo \$0.00/mo	640-mo \$0.00/mo		
16 GB / 1GB / 1GB 80 GB / 100 GB / 100 GB	32 GB / 1GB / 1GB 160 GB / 100 GB / 100 GB	48 GB / 1GB / 1GB 160 GB / 100 GB / 100 GB	64 GB / 1GB / 1GB 160 GB / 100 GB / 100 GB		

8. You Don NOT need to Add block storage so leave this empty.
Choose a Datacenter Region. If you have multiple nodes use different locations.
DO NOT select additional options
DO NOT add SSH keys

Add block storage NEW Currently only available in BLR, FRA, LON, NYC1, NYC3, SFO2, SG1 and TOR1

Add Volume

Choose a datacenter region

 New York 1 2 3	 San Francisco 1 2	 Amsterdam 2 3	 Singapore 1	 London 1	 Frankfurt 1
 Toronto 1	 Bangalore 1				

Select additional options

☐ Private networking ☐ Backups ☐ IPv6 ☐ User data ☐ Monitoring

Add your SSH keys

New SSH Key

Finalize and create

How many Droplets?

Deploy multiple Droplets with the same configuration.

1 Droplet

Choose a hostname

Give your Droplets an identifying name you will remember them by. Your Droplet name can only contain alphanumeric characters, dashes, and periods.

SmartNode01

Add Tags

Create


10. Check your email account for an email from Digital Ocean which will contain the root password.

11. Back on the Digital Ocean page in your Internet Browser.
Once the machine is created you will be presented with this screen. Click on more link and select Access console.

Droplets Spaces Images Networking Monitoring API Support

Enhance the security of your account by enabling two-factor authentication. [Enable Two-Factor Authentication](#)

Droplets

Name	IP Address	Created	Tags
 SmartNode01 1 GB / 30 GB Disk / LON1 - Ubuntu 16.04.3 x64	138.68.187.46	Good to go!	More

Created Tags

9 minutes ago [More](#)

- Add a domain
- [Access console](#)
- Resize droplet
- View usage
- Enable backups
- Add tags
- Destroy

12. On the console screen enter the root credentials with the password from the email (step 10) to log in.
Please note copy and paste may not work. So please type carefully.

DigitalOcean Droplet Console - Google Chrome

DigitalOcean, LLC [US] | https://cloud.digitalocean.com/droplets/73468004/console?no_layout

```
Ubuntu 16.04.3 LTS SmartNode01 tty1
SmartNode01 login:
```

13. You will be asked to change your password so please follow the instructions and make note of your new password and keep it safe.

```
DigitalOcean Droplet Console - Google Chrome
DigitalOcean, LLC [US] | https://cloud.digitalocean.com/droplets/73515224/console?no_layout=true
(current) UNIX password:
Enter new UNIX password:
Retype new UNIX password:
Welcome to Ubuntu 16.04 (GNU/Linux 4.13.0-17-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

Get cloud support with Ubuntu Advantage Cloud Guest:
http://www.ubuntu.com/business/services/cloud

0 packages can be updated.
0 updates are security updates.

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.





root@SmartNode01:~#
```

Congratulations. You have successfully created and logged into the VPS in Digital Ocean

Section 4: VPS: Update, Firewall and New user creation, Key Generations and Root SSH Disabled.

Now that you have logged in, let us start to configure the Linux server to be more secure and get it ready to become a SmartNode. This guide will use the Digital Ocean Droplet as the main examples in screen captures. Using any other VPS should be exactly the same.

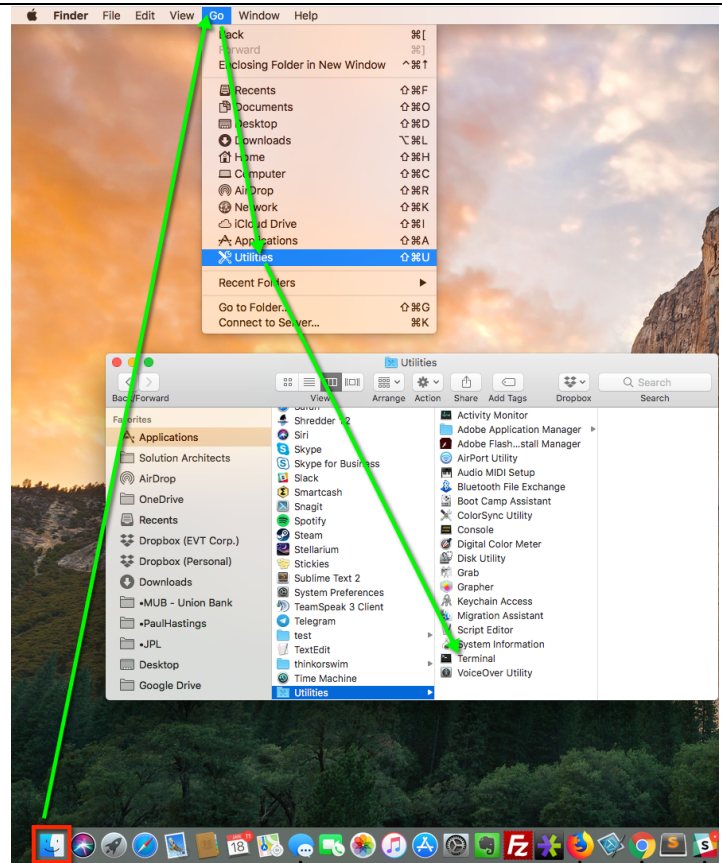
<p>1. In the connection to the virtual machine let us get the latest updates, please type in <code>apt-get update</code></p> <p>And hit enter.</p>	<pre>root@SmartNode01:~# apt-get update</pre>
<p>2. Now type <code>apt-get upgrade</code></p> <p>And hit enter it will ask you if you want to upgrade just type yes.</p>	<pre>root@SmartNode01:~# apt-get upgrade_</pre>
<p>3. Restart the machine with <code>reboot</code></p> <p>And log in again.</p>	<pre>root@SmartNode01:~# reboot</pre>
<p>4. Once you have logged back in let us create a new user (I used "smartadmin") with the command <code>adduser smartadmin</code></p>	
<p>5. Enter the details for a password and keep it safe.</p>	
<p>6. You can enter the optional information but it is not necessary so you can just skip it by pressing enter.</p>	
<p>7. Type Y for the questions "Is this information correct" and press enter.</p>	
<p>8. Give the smartadmin the ability to elevate the user privileges when needed by adding the user to the sudo group with the command <code>gpasswd -a smartadmin sudo</code></p>	<pre>root@SmartNode01:~# gpasswd -a smartadmin sudo Adding user smartadmin to group sudo root@SmartNode01:~#</pre>
<p>9. Let us install the firewall with <code>apt-get install ufw</code></p>	<pre>root@SmartNode01:~# root@SmartNode01:~# apt-get install ufw Reading package lists... Done Building dependency tree Reading state information... Done ufw is already the newest version (0.35-5). The following package was automatically installed and is no longer required: grub-pc-bin Use 'apt autoremove' to remove it. 0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded. root@SmartNode01:~# _</pre>

<div>10. Open up the correct ports for the SmartNode to function later.</div> <div>ufw allow ssh/tcp</div> <div>ufw limit ssh/tcp</div> <div>ufw allow 9678/tcp</div> <div>ufw logging on</div> <div>ufw enable</div>	<pre>root@SmartNode01:~# ufw allow ssh/tcp Rules updated Rules updated (v6) root@SmartNode01:~# ufw limit ssh/tcp Rules updated Rules updated (v6) root@SmartNode01:~# ufw allow 9678/tcp Rules updated Rules updated (v6) root@SmartNode01:~# ufw logging on Logging enabled root@SmartNode01:~# ufw enable Firewall is active and enabled on system startup root@SmartNode01:~#</pre>
<div>11. Check the status of the firewall with</div> <div>ufw status</div>	<pre>root@SmartNode01:~# ufw status Status: active To Action From -- 22/tcp LIMIT Anywhere 9678/tcp ALLOW Anywhere 22/tcp (v6) LIMIT Anywhere (v6) 9678/tcp (v6) ALLOW Anywhere (v6) root@SmartNode01:~#</pre>
<div>12. As we have been using the console from the control panel we have not used ssh.</div> <div>In the next section we get this sorted but first let us restart the machine again with</div> <div>reboot</div> <div>NOTE: Please be aware that restarting the machine may change your IP address so please refer back to the website and check your IP has not changed in the reboot</div>	<div>root@SmartNode01:~# reboot</div> <div><div>Location:</div><div> London</div></div> <div><div>IP Address:</div><div>45.76.138.142 </div></div> <div><div>Username:</div><div>root</div></div> <div><div>Password:</div><div><div>\$Tk8aZlgJJVfHIIP</div><div> </div></div></div>
<div>Congratulation you have successfully logged in as root, upgraded and updated the droplet. Created a new user smartadmin and installed/configured a firewall.</div>	

Section 5: VPS: Configure Secure Login as smartadmin using the privatekey

Now let us log in as the newly created user smartadmin and secure our SSH Connection

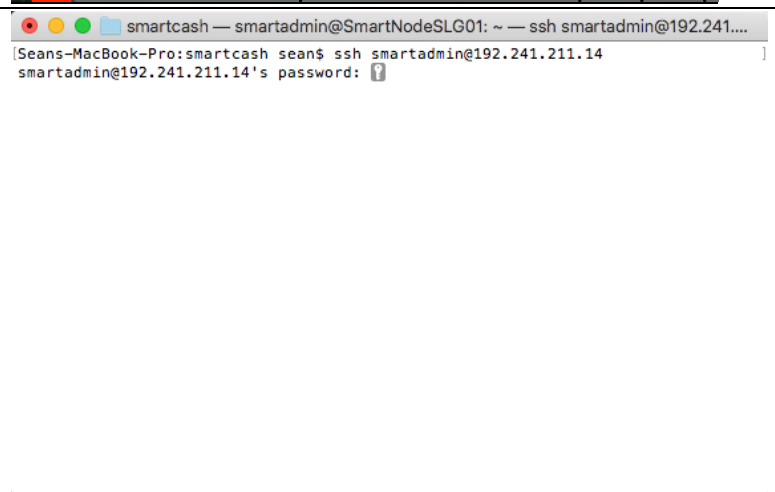
1. Bring up another terminal window



2. Login to your droplet using the IP address and smartadmin userid and password you created in section 4 step 5

```
ssh smartadmin@<dropletIP>
```

Enter in the password and hit enter



3. Let us create the ssh key

```
ssh-keygen -t rsa -b 2048
```

It will offer to save the file in the default location:

```
/home/smartadmin/.ssh
```

Press Enter to Accept Defaults.

Create a Passphrase.

Enter the Passphrase Again.

```
smartadmin@SmartNode01:~$ ssh-keygen -t rsa -b 2048
Generating public/private rsa key pair.
Enter file in which to save the key (/home/smartadmin/.ssh/id_rsa):
Created directory '/home/smartadmin/.ssh'.
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/smartadmin/.ssh/id_rsa.
Your public key has been saved in /home/smartadmin/.ssh/id_rsa.pub.
The key fingerprint is:
SHA256:/Hou3iHMfSU+TV1CYEKFWlw4NVc/RFz/e9WXBHmzE38 smartadmin@SmartNode01
The key's randomart image is:
+---[RSA 2048]---+
|  o.*=o*+*oo|
|  = o= *oo.|
|  .  *o+|
|  .  o.+E|
|  S  .+.B|
|  o o . = +|
|  + + + ...|
|  .+.o . .|
|  .o+o|
+---[SHA256]-----+
smartadmin@SmartNode01:~$
```

4. Now we need to rename and change the permission on the public key.

```
mv ~/.ssh/id_rsa.pub ~/.ssh/authorized_keys
```

```
chmod 600 ~/.ssh/authorized_keys
```

```
smartadmin@SmartNode01:~/.ssh$ mv ~/.ssh/id_rsa.pub ~/.ssh/authorized_keys
smartadmin@SmartNode01:~/.ssh$ chmod 600 ~/.ssh/authorized_keys
```

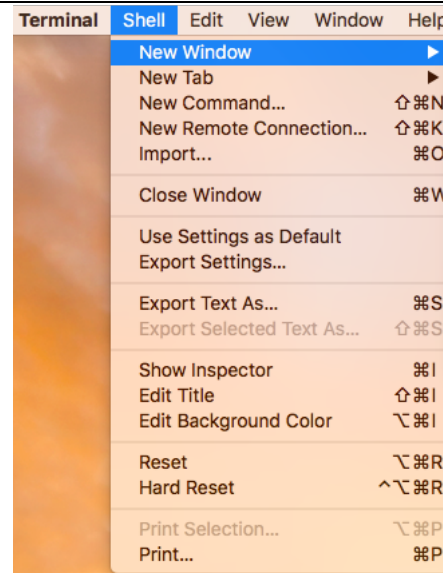
5. Next we need to copy the private key to our local MAC

bring up another terminal that is local to the MAC

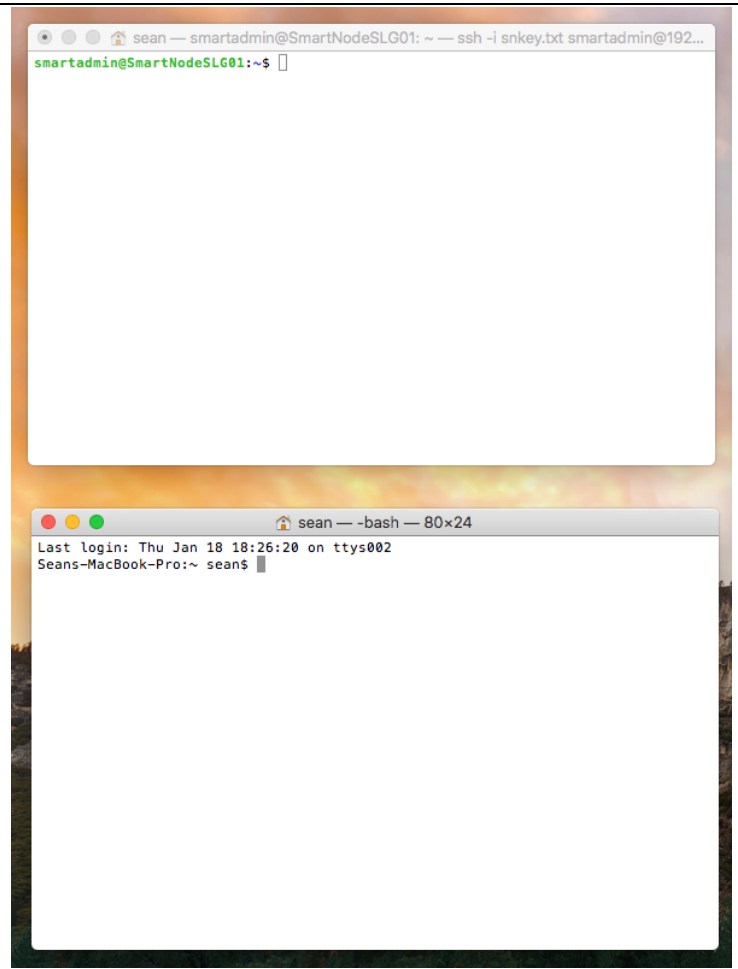
click on your current terminal that should be SSH logged into the droplet server so that the Terminal menu will show. Go to

Shell-> New Window

This will bring up a second terminal



6. You should now have two terminal windows up. One connected to the droplet server and the other on your local MAC



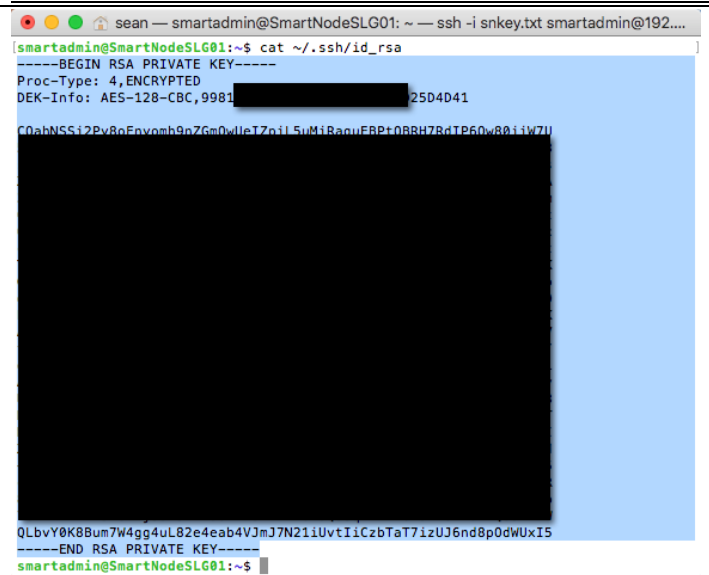
7. First we need to copy the ssh private key

On the droplet node type

```
cat ~/.ssh/id_rsa
```

Then highlight the private key. Be sure to include the BEGIN and END lines.

I blanked out the key on purpose. Just ignore that.



8. Now we need to copy the key locally on our MAC
In the other terminal that is local to the MAC type

```
pico ~/snkey.txt
```

Paste the private key into the file. Be sure to include the
BEGIN and END lines.

Now press CTRL + x to close.

“Save modified buffer?” will appear at the bottom.
Press Y to save.

Hit Enter to confirm the filename to save as.

Run the following command to change the file
permissions to 600 to secure the key. You can also
set them to 400. This step is required:

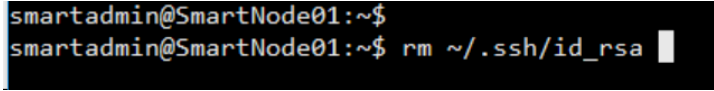
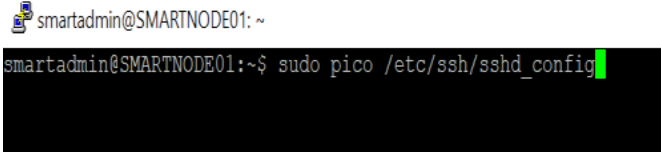
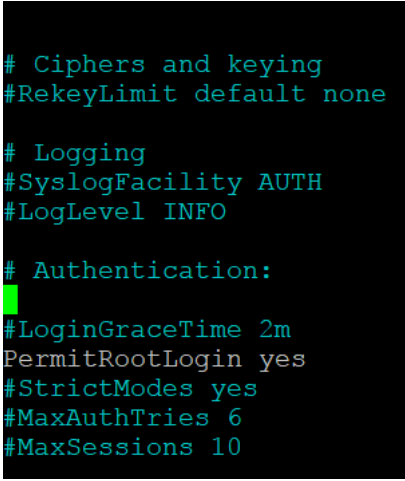
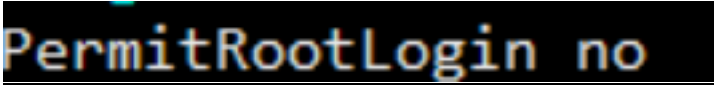
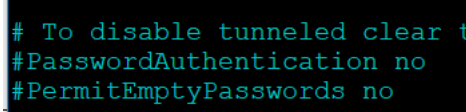
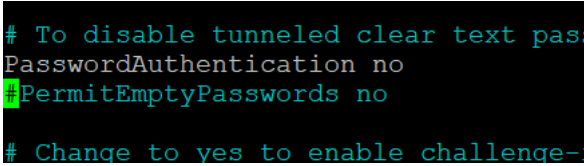
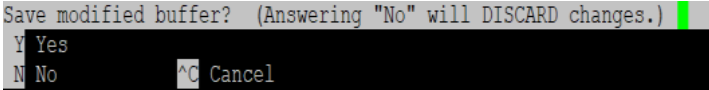
```
chmod 600 ~/snkey.txt
```

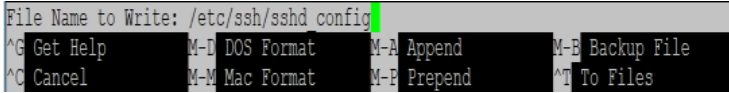
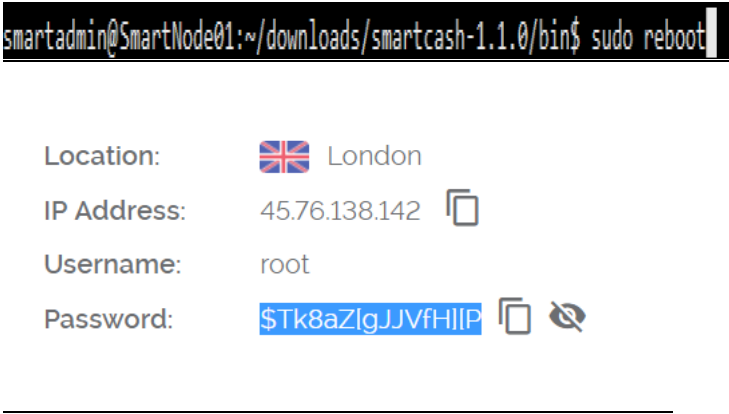
We will use this snkey.txt later to ssh into the server
from this point on.

```
sean -- -bash -- 83x32
Seans-MacBook-Pro:~ sean$ pico ~/snkey.txt

GNU nano 2.0.6 File: /Users/sean/snkey.txt
-----BEGIN RSA PRIVATE KEY-----
Proc-Type: 4,ENCRYPTED
DEK-Info: AES-128-CBC,9981[REDACTED]1
[REDACTED]
8InvSPocaeHJWfk+INFU56Cm/CECDHWGkMUyG5G+N0gDB6qLVkM6RP97fk0lsRMp
[ Read 30 lines ]
^G Get Help  ^O WriteOut  ^R Read File ^Y Prev Page ^K Cut Text  ^C Cur Pos
^X Exit      ^J Justify   ^W Where Is  ^V Next Page ^U UnCut Text ^T To Spell

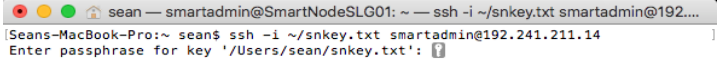
Seans-MacBook-Pro:~ sean$ pico ~/snkey.txt
Seans-MacBook-Pro:~ sean$ chmod 600 ~/snkey.txt
Seans-MacBook-Pro:~ sean$
```

<p>9. Go BACK to the terminal connected to the Droplet and delete the id_rsa (private key) file from linux with the command</p> <pre>rm ~/.ssh/id_rsa</pre>	
<p>10. Now to disable root access for ssh.</p> <pre>sudo pico /etc/ssh/sshd_config</pre> <p>Enter when prompted the password for the smartadmin user.</p>	
<p>1. Scroll down the file till you see PermitRootLogin yes</p> <p>and change it to no</p>	 
<p>2. Scroll down to PasswordAuthentication and make sure it has no # character in front and says no (check screenshot)</p>	 <p>To</p> 
<p>3. Now press CTRL + x to close.</p> <p>“Save modified buffer?” will appear at the bottom. Press Y to save.</p>	

4. Hit Enter to confirm the filename to save as.	
5. Now it is time to restart the ssh service, so the changes become active. <code>sudo systemctl reload sshd</code>	
6. Congratulation we are all done just restart the machine <code>Sudo reboot</code> Your machine is now updated and ready	
Proceed to section 6	

Section 6: VPS: Securely login as the smartadmin user with the private key and passphrase using your local MAC terminal

Finally, let us test the login as the smartadmin user.

1. Bring up a local mac terminal	
2. Now that the server is more secure and only the smartadmin user can ssh with the local private key on your MAC we will login with some additional command variables Type in the following ssh -i ~/snkey.txt smartadmin@<YOUR-IP-ADDRESS>	 A screenshot of a macOS terminal window. The title bar shows the name 'sean' and the window title 'sean — smartadmin@SmartNodeSLG01: ~ — ssh -i ~/snkey.txt smartadmin@192.241.211.14'. The terminal content shows the command 'ssh -i ~/snkey.txt smartadmin@192.241.211.14' being executed, followed by the prompt 'Enter passphrase for key "/>
Congratulation. You now have securely logged in with a secure key and password into your account.	

Section 7: Installing SmartCash using a PPA

Since you have already logged in as the smartadmin user let us install the Smartcash Wallet using apt-get.

<div>1. Let's install a package called software properties common</div> <div>sudo apt-get install software-properties-common</div>	<pre>smartadmin@SmartNode01:~\$ sudo apt-get install software-properties-common [sudo] password for smartadmin: Reading package lists... Done Building dependency tree Reading state information... Done software-properties-common is already the newest version (0.96.20.7). The following package was automatically installed and is no longer required: grub-pc-bin Use 'sudo apt autoremove' to remove it. 0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded. smartadmin@SmartNode01:~\$</pre>
<div>2. Then type in</div> <div>sudo add-apt-repository ppa:smartcash/ppa</div> <div>Confirm the install by pressing Enter</div>	<pre>smartadmin@SmartNode01:~\$ sudo add-apt-repository ppa:smartcash/ppa smartadmin@SmartNode01:~\$ sudo add-apt-repository ppa:smartcash/ppa Wallet binaries and .deb install packages for the SmartCash wallet. For more info visit: https://smartcash.cc More info: https://launchpad.net/~smartcash/+archive/ubuntu/ppa Press [ENTER] to continue or ctrl-c to cancel adding it gpg: keyring '/tmp/tmpkjtzd0/secring.gpg' created gpg: keyring '/tmp/tmpkjtzd0/pubring.gpg' created gpg: requesting key B71983CB from hkp server keyserver.ubuntu.com gpg: /tmp/tmpkjtzd0/trustdb.gpg: trustdb created gpg: key B71983CB: public key "Launchpad PPA for Smart Cash" imported gpg: Total number processed: 1 gpg: imported: 1 (RSA: 1) OK</pre>
<div>3. Type</div> <div>sudo apt-get update</div>	<pre>smartadmin@SmartNode01:~\$ sudo apt-get update</pre>
<div>4. Finally, to install smartcash:</div> <div>sudo apt-get install smartcashd</div>	<pre>smartadmin@SmartNode01:~\$ sudo apt-get install smartcashd</pre>
Go to Section 8 to add a configuration file before running for the first time.	

Section 8: Configure SmartNode to run on Droplet/VPS

<div>1. Type</div> <div><pre>mkdir ~/.smartcash</pre></div> <div>press enter.</div> <div><pre>pico ~/.smartcash/smartcash.conf</pre></div> <div>Press enter.</div>	<div><pre>mkdir ~/.smartcash</pre></div> <div><pre>smartadmin@SmartNode01:~\$ pico ~/.smartcash/smartcash.conf</pre></div>
<div>2. We need to create a smartcash.conf file to create the node.</div> <div>Type:</div> <div><pre>rpcuser=AUSERNAME rpcpassword=PASSWORD port=9678 daemon=1 listen=1 server=1 smartnode=1 txindex=1 smartnodeprivkey=7RR1tMKm8uvC.....</pre></div> <div>smartnodeprivkey is the output from the command “smartnode genkey” command you used in Section 1</div>	<div><pre>GNU nano 2.5.3 File: /home/smartadmin/.smartcash/smartcash.conf rpcuser=smartnode1 rpcpassword=temp123 port=9678 daemon=1 listen=1 server=1 smartnode=1 txindex=1 smartnodeprivkey=7RR1tMKm7uvCJPgKbgUvrm9osob2LfnZPA8b2mEnPKauGHXCP</pre></div>
<div>3. Now press CTRL + x to close.</div> <div>“Save modified buffer?” will appear at the bottom. Press Y to save.</div> <div>Hit Enter to confirm the filename to save as.</div>	<div><pre>Save modified buffer? (Answering "No" will DISCARD changes.) Y Yes N No ^C Cancel</pre></div> <div><pre>File Name to Write: smartcash.conf ^G Get Help M-D DOS Format ^C Cancel M-M Mac Format</pre></div>
<div>4. Start</div> <div><pre>smartcashd</pre></div>	<div><pre>smartadmin@SmartNode01:~/downloads/smartcash-1.1.0/bin\$./smartcashd</pre></div> <div><pre>Smartcash server starting</pre></div>

```
smartadmin@Jazz-SmartModel1:~/downloads/smartcash-1.1.0/bin$ Error: Cannot obtain a lock on data directory /home/smartadmin/.smartcash. Smartcash
is probably already running.
```

```
smartadmin@SmartNode01:~/downloads/smartcash-1.1.0/bin$ ./smartcash-cli stop
Smartcash server stopping
```

```
smartadmin@SmartNode01:~/downloads/smartcash-1.1.0/bin$ ./smartcashd
```


```
smartadmin@SmartNode01:~/downloads/smartcash-1.1.0/bin$ ./smartcash-cli getinfo
{"version": 1010000,
 "protocolversion": 90023,
 "walletversion": 130000,
 "balance": 0.00000000,
 "blocks": 107957,
 "timeoffset": 0,
 "connections": 0,
 "proxy": "",
 "difficulty": 14788.1807539218,
 "testnet": false,
 "keypoololdest": 1513883227,
 "keypoolsize": 100,
 "paytxfee": 0.00000000,
 "relayfee": 0.00300000,
 "errors": ""
}
```

```
"blocks": 107957,
```

SmartExplorer [Explorer](#) [Movement](#) [Network](#) [Top 100](#) [API](#)

Network (Th/s)
5.5344

Difficulty
183857.09589411



Coin Supply (SMART)
1096000355.522923

SMART Price
\$0.165169

You may enter a block height, block hash, or hash or address.

[Search](#)

Latest Transactions

Show 10 entries

Block	Hash	Recipients	Amount (SMART)	Timestamp
241326	398242502bd956ea42a6f220ca20ca290cd89614467f8ae0cf8b4d4948713	2	2973.06300000	Sat, 23 Dec 2017 02:26:38 GMT

Latest Transactions	
Show	<div> <div>10</div> <div>▼</div> </div> entries
Block	
241326	3982245f2d2bd96dea4

```
./smartcash-cli smartnode status
```

smartcash-cli smartnode status

This will return a smartnode status.

“Smartnode is capable but not activated”

Once you run the start command from your LOCAL wallet (Section 9) and wait a few minutes, it will say

“Smartnode successfully started”.

```
smartadmin@45.63.97.91:22 - Bitrix term - smartadmin@TestNet:1 - ~/downloads/smartcash-1.1.0/bin$ ./smartcash-cli smartnode status
{
  "vin": "CTxIn(COutPoint(b56ab31bc506ce770cb479197161cdc780ffff846de1f0:de22c84a94acebd8ab, 2), scriptSig=)",
  "service": "45.63.97.91:9678",
  "payee": "SVCNbcxhxeRwulIzefN6eda3iVdo4nkoRe",
  "status": "Smartnode is capable but not activated."
}
```

```
{
  "vin": "CTxIn(COutPoint(c09a22d55515dc536e7b9bda7fb143f9a698e486a7d306a7b9921400888aafc71, 0), scriptSig=)",
  "service": "45.76.138.142:9678",
  "payee": "SVCNbcxhxeRwulIzefN6eda3iVdo4nkoRe",
  "status": "Smartnode successfully started"
}
```

Congratulations your SmartNode is now configured.

Section 9: Start the SmartCash SmartNode

1. Go back to your local MAC and open up a terminal window. We need to update the smartnode.conf file with all the info from Section 1 step 23. So that your local Wallet can manage your smartnode.

Type:

```
cd ~/Library/Application\ Support/smartcash/
```

This file has an example showing how a smartnode can be added for the MAC wallet to manage it.

Each line denotes a single SmartNode.

The line consists of the following information separated by a single space.

LABEL: A one-word name you make up to call your node (ex. SmartNode01)

IP: PORT: Your remote node VPS's IP-Address, and the port which is always 9678.

SMARTNODEPRIVKEY: This is the result of your "smartnode genkey" from Section 1

TRANSACTION HASH: The collateral tx. Hash from "smartnode outputs" command from Section 1

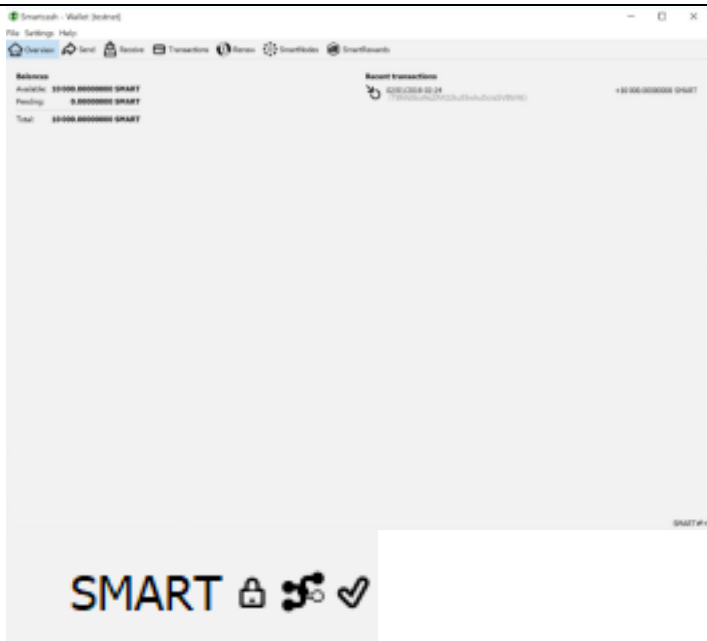
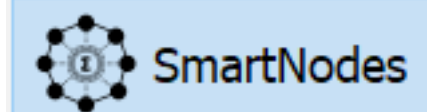
INDEX: The Index value(0,1,2...) at the end of the smartnode outputs from Section 1

Add your smartnode details using the structure highlighted above. Do not add a # to the beginning lines of your smartnodes.

Save the file.



```
smartnode.conf - Notepad
File Edit Format View Help
smartnode 45.76.138.142:9678 78R1tWn7uvCPgYbglVrm8uSob2LFnZP4BPhtZnEnPKauGHKCP c09a22d55515dc536e7b9bda7fb143f9a698e486a7d306a7b921400000aafc71 0
```

<div>2. Start the SmartCash wallet (If it is already started please close the application and restart the wallet so it can read the changes made). Wait for the wallet to fully sync: Indicated by the tick in the bottom right corner</div>	<div></div>										
<div>3. Click on the “SmartNodes” Tab.</div>	<div></div>										
<div>4. Click on the “My SmartNodes” Tab.</div>	<div><div>File Settings Help</div><div> Overview Send Receive Transactions Renew</div><div>My SmartNodes All SmartNodes</div><div>Note: Status of your smartnodes in local wallet can potentially be slightly off. Always wait for wallet to sync additional data and then double check from your smartnode should be running but you still do not see "ENABLED" in the status column.</div><table><thead><tr><th></th><th>Alias</th><th>Address</th><th>Port</th><th>Status</th></tr></thead><tbody><tr><td>1</td><td>Jazz-SmartNode01</td><td>45.63.97.91:9678</td><td>900...</td><td>PRE_E...</td></tr></tbody></table><div><div>Start alias</div><div>Start all</div><div>Start MISSING</div><div>Update status</div><div>Start</div></div></div>		Alias	Address	Port	Status	1	Jazz-SmartNode01	45.63.97.91:9678	900...	PRE_E...
	Alias	Address	Port	Status							
1	Jazz-SmartNode01	45.63.97.91:9678	900...	PRE_E...							
<div>5. Not to finally start your SmartNode. Click on “Start MISSING” button. (Clicking on “Start all” will reset any other SmartNode already started and push their payment date back. Start MISSING only starts nodes that need to be started.)</div>	<div><div>Start alias</div><div>Start all</div><div>Start MISSING</div><div>Update status</div><div>!</div></div>										

<p>You will be asked to type in your passphrase.</p>	<div><p>This operation needs your wallet passphrase to unlock the wallet.</p><p>Enter passphrase <input type="text"/></p><div><div>OK</div><div>Cancel</div></div></div>														
<p>6. Your SmartNode will change from a “missing” status to a “pre-Enabled” to finally “Enabled” this takes about 10 minutes.</p>	<div><div>SmartCash - Wallet (testnet)</div><div><div>File Settings Help</div><div>Overview Send Receive Transactions SmartNodes SmartAccounts</div><div>My SmartNodes All SmartNodes</div><div><p>Note: Status of your smartnodes in local wallet can potentially be slightly incorrect. Always wait for wallet to sync additional data and then double check from another node. If your smartnode should be running but you still do not see "Enabled" in "Status" field.</p><table><thead><tr><th>Alias</th><th>Address</th><th>Index</th><th>Status</th><th>Active</th><th>Last Seen</th><th>Pages</th></tr></thead><tbody><tr><td>Smart Node</td><td>2P443273734C78</td><td>100</td><td>Download</td><td>Unlocked</td><td>2016-07-10 10:00:00</td><td>1/1</td></tr></tbody></table></div><div><div>Start node Start all Start (PENDING) Update status</div><div>Status will be updated automatically in (secs): 0</div></div><div>SMART v 0.1.0</div></div></div>	Alias	Address	Index	Status	Active	Last Seen	Pages	Smart Node	2P443273734C78	100	Download	Unlocked	2016-07-10 10:00:00	1/1
Alias	Address	Index	Status	Active	Last Seen	Pages									
Smart Node	2P443273734C78	100	Download	Unlocked	2016-07-10 10:00:00	1/1									
<p>Congratulations you are now running your first SmartCash Smartnode! The local Mac wallet does not need to be left on 24/7. The Mac wallet can be used to see the rewards and SmartNode uptime.</p>															