



SmartCash SmartNode Setup Guide v1.0

Windows 10

Date: 08/01/2018

By (Jazz) yoyomonkey

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 Windows 10 PC user who has already installed the SmartCash Wallet, purchased SmartCash from an exchange but has little or no experience of using Linux 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 yoyomonkey on the SmartCash discord channel.

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.

To demonstrate that the service offerings are very similar, I have also included an "OPTIONAL SECTION 3" for vultr.com to show an alternate VPS setup process. Compare the 2 Sections and pay attention that the requirements and setup are very similar.

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.(Windows is used in guide, but other QT version wallets work)

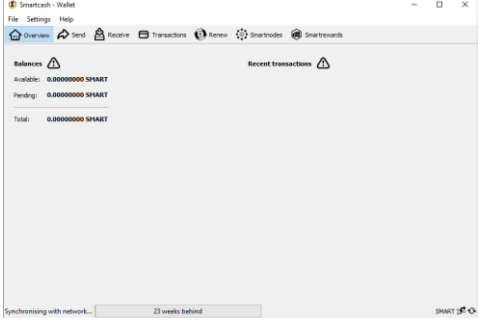
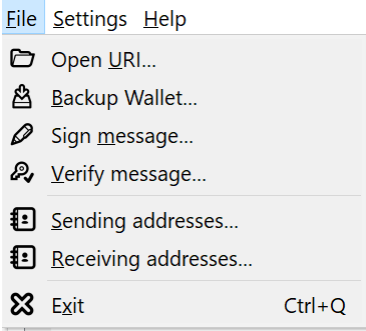
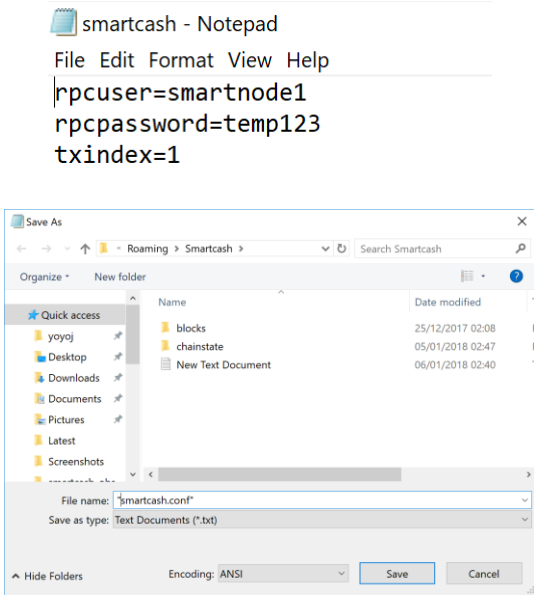
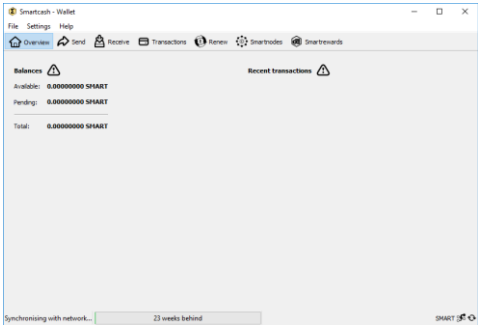
VPS server for remote node running 24hrs/day which includes:


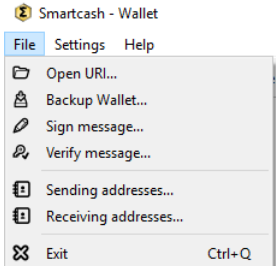
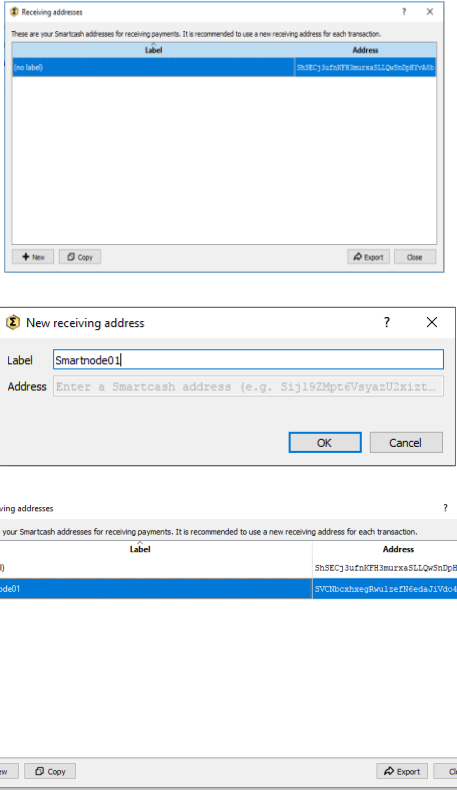
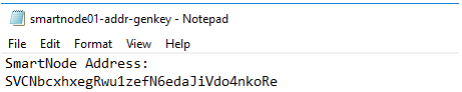
- 1GB RAM (about half used for OS and half for daemon we install)
- 20GB drive (less than 1GB used for wallet, some for OS, and some for future.
- 1 Static IPV4 Address per node (IPV4 address that never changes) (No IPV6)

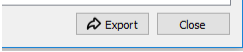
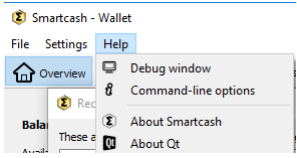
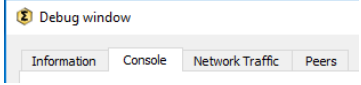
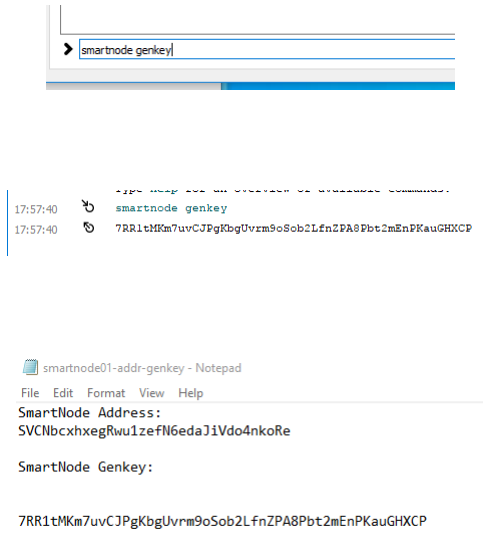
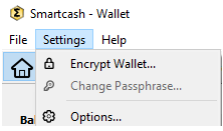
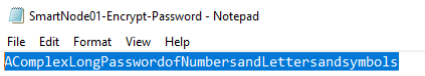
The remote node is actually the SmartNode, but for this guide we will call that remote node.

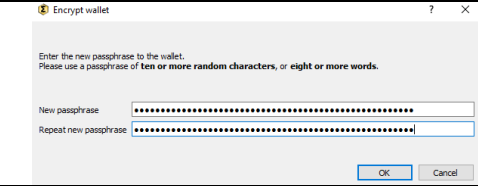
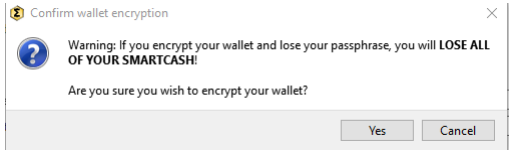
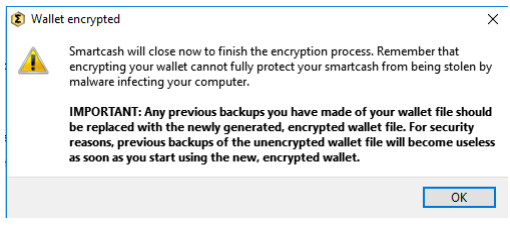
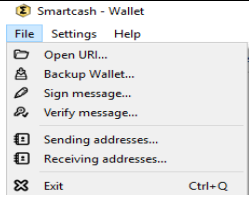
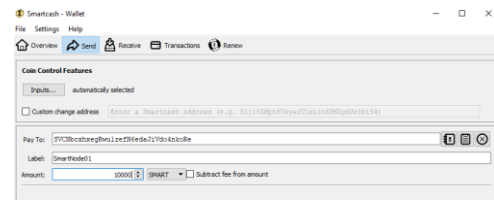

Section 1: Configure Windows SmartCash Wallet


<p>1. Install the 1.1.0 SmartCash wallet from</p> <p>https://smartcash.cc/wallets/</p>	
<p>2. On your Windows machine start your SmartCash wallet.</p>	

	
<p>3. As soon as the wallet starts up go to the File menu and select “Exit”.</p> <p>We need to make a config change before syncing the wallet to make it able to manage the SmartNodes.</p>	
<p>4. To run a SmartNode we need to create a smartnode.conf file in the %appdata%/Smartcash” folder (or the Data directory you selected when you installed the SmartCash Installer).</p> <p>Right click and select create text file. Right-click and edit with notepad.</p> <pre>rpcuser=AUSERNAME rpcpassword=PASSWORD txindex=1</pre> <p>Go to Save As and save the file name as “smartcash.conf” BUT INCLUDE the “double quotes” to force the extension of .conf.</p>	
<p>5. Start the SmartCash wallet again.</p>	

<p>6. Wait for the wallet to fully sync.</p> <p>This can take up to 8 hours depending on many factors including Network Traffic.</p> <p>Look for the tick in the Bottom Right Corner of the wallet to signify that the wallet has fully synced.</p>	
<p>7. Go to File in the top menu bar and then select "Receiving addresses".</p>	
<p>8. Create a new address.</p> <p>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>9. Paste the long address and save it in a file called:</p> <p>"smartnode01-addr-genkey.txt"</p> <p>Close the Receiving addresses window.</p>	

	
<p>10. In the SmartCash wallet select Help in the top menu bar.</p> <p>Click "Debug window"</p>	
<p>11. In the Debug window click the console tab.</p>	
<p>12. At the bottom of the window type into the input box.</p> <p>smartnode genkey</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>13. 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>14. 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>	


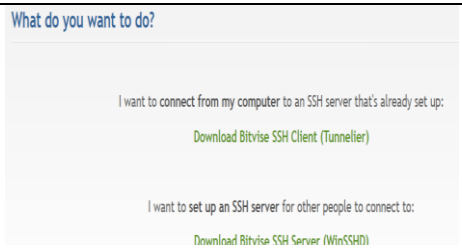
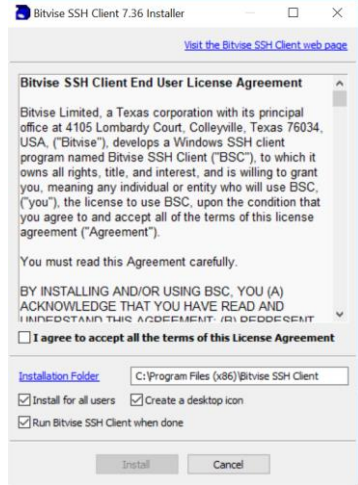
<p>If you lose this password you will lose your SmartCash and no one will be able to get it back. Keep this file really safe!</p>	 <p>The dialog box is titled "Encrypt wallet". It contains the instruction: "Enter the new passphrase to the wallet. Please use a passphrase of ten or more random characters, or eight or more words." There are two input fields: "New passphrase" and "Repeat new passphrase", both filled with asterisks. At the bottom right are "OK" and "Cancel" buttons.</p>
<p>15. 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>The dialog box is titled "Confirm wallet encryption". It features a question mark icon and the text: "Warning: If you encrypt your wallet and lose your passphrase, you will LOSE ALL OF YOUR SMARTCASH!". Below this, it asks: "Are you sure you wish to encrypt your wallet?". At the bottom right are "Yes" and "Cancel" buttons.</p>
<p>16. 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 dialog box is titled "Wallet encrypted". It contains a warning icon and text: "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." At the bottom right is an "OK" button.</p>
<p>17. 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 "File" menu of the "Smartcash - Wallet" application. The menu options are: File, Settings, Help, 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>18. 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 "Send" dialog box in the "Smartcash - Wallet" application. It includes a "Pay To:" field with the address "1P7C3bcbzang8wL1ce5B6da2V9b4kic8b". The "Amount:" field is set to "10000". There are checkboxes for "Custom change address" and "Subtract fee from amount".</p>
<p>19. In the Windows Wallet Debug Console (Help in the Menu and Debug Console) type:</p> <p>smartnode outputs</p>	 <p>The image shows the "smartnode outputs" command being executed in the debug console. The output is a JSON object: {"c09a22d5515dc36e7b9bda7fb143fa698e486a7d306a7b921400888aafc710"}. The console shows the command at 02:25:43 and the output at 02:25:43.</p>

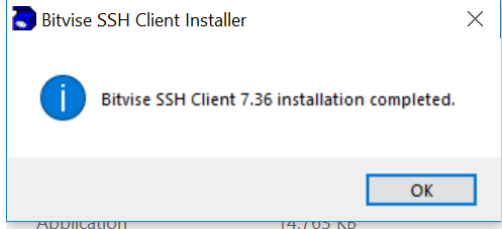
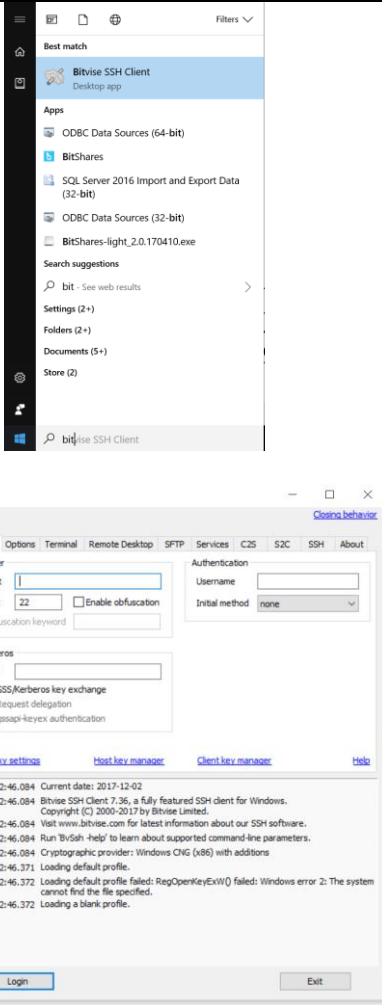
<p>Save the key and index(0,1,2..) in the file.</p> <p>smartnode01-addr-genkey.txt (Section 1: Step 9)</p> <p>We will need this file later on.</p>	
<p>Once that is confirmed and you have backed up your files somewhere safe. Please continue with Section 2.</p>	

Section 2: Install Bitwise SSH Client

The Bitwise SSH Client is a program which will allow you to connect to and control remote machines using the SSH protocol, which is for command line entry communication.

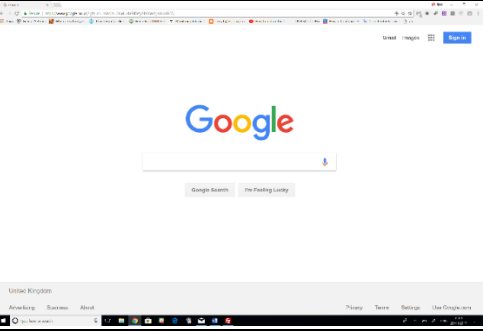
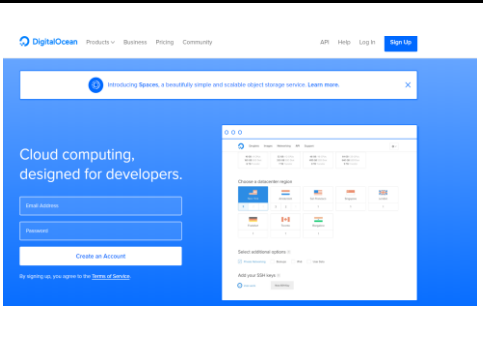
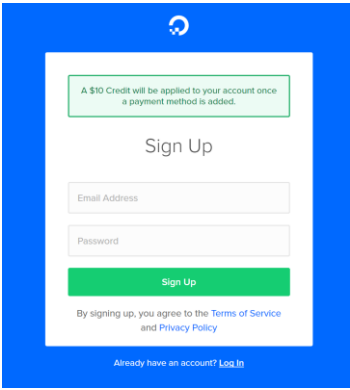
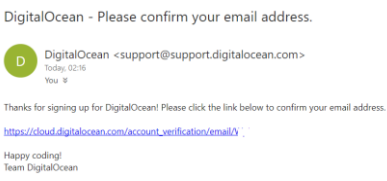
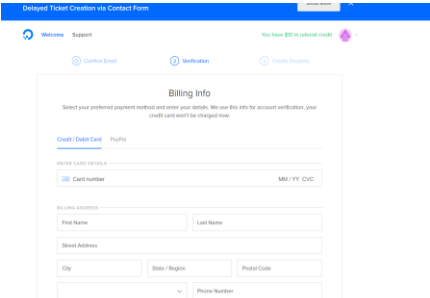
The remote node will be running 24/7 on a remote server. We can setup and maintain using Bitwise with IP-address, username and password. As the remote node will be running for a long duration, this guide will take it a step further by using secure keys to secure the connection further. We suggest following the extra security measure so your SmartNode is not kicked offline. There is no risk to funds, since they are not stored in this server anyway.

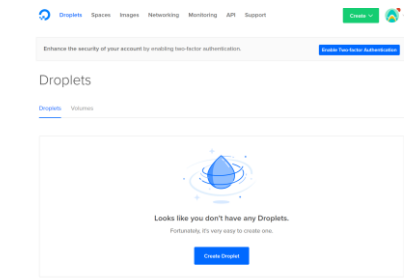
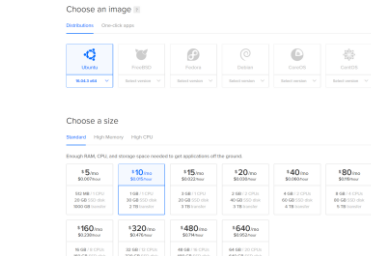
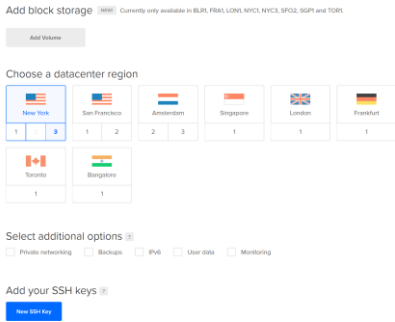
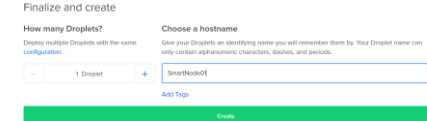
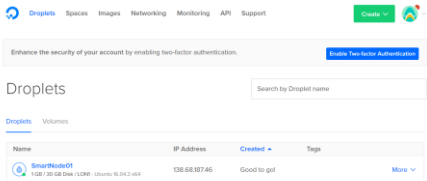
1. Open Google Chrome and go to https://www.bitwise.com/ssh-client .	
2. Go to Downloads and select the "Download Bitwise SSH Client (Tunneller)".	
3. Download the software and install. Read the Agreement and tick the "I agree to accept all the terms of this License Agreement".	

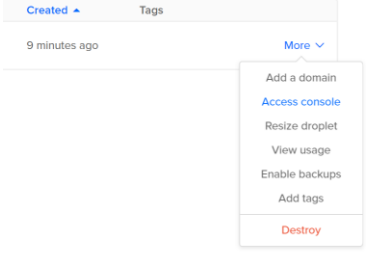
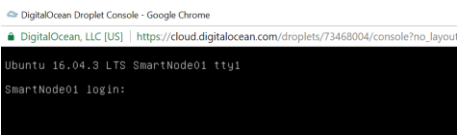
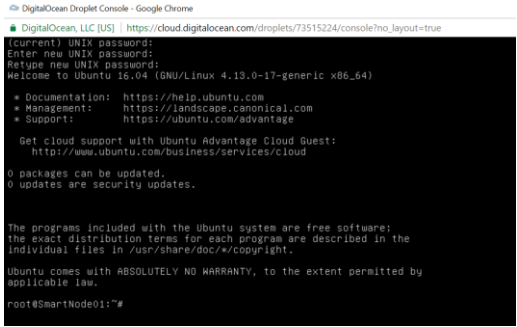
	
<p>4. Go to the Windows Menu Type Bitvise and select the Bitvise SSH Client.</p>	
<p>Congratulations you have installed Bitvise SSH Client. We will be using Bitvise in Section 5 to connect to the VPS.</p>	

Section 3: Digital Ocean sign up and Droplet Creation

Next are the steps to create Virtual Server on Digital Ocean. For 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>	
<p>4. Go to your e-mail and check for a digital ocean email. Confirm the email.</p>	
<p>5. Enter in Payment Details so that you can create a Droplet (VPS)</p>	

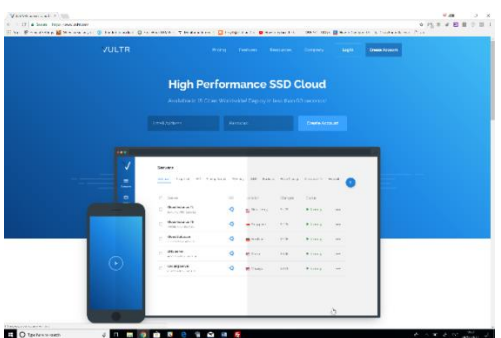
<p>6. Once this is all done, log in again to Digital Ocean and go to “Create Droplet”</p>	
<p>7. Select an Ubuntu Distribution use Ubuntu Version 16.04 LTS. Select a monthly plan.</p> <p>Our suggestion is to setup with 1GB or more of RAM. Although, 512MB of RAM will work for a few days, it will often cause the wallet to lockup when it runs out of memory. As we add features, our wallets will use more resources too.</p>	
<p>8. You DO NOT need to Add block storage so leave this empty.</p> <p>Choose a Datacenter Region. If you have multiple nodes use different locations.</p> <p>DO NOT select additional options</p> <p>DO NOT add SSH Keys</p>	
<p>9. Give your VPS a name and select create.</p>	
<p>10. Check your email account for an email from Digital Ocean which will contain the root password.</p>	
<p>11. Back on the Digital Ocean page in your Internet Browser.</p> <p>Once the machine is created you will be presented with this screen. Click on more link and select Access console.</p>	

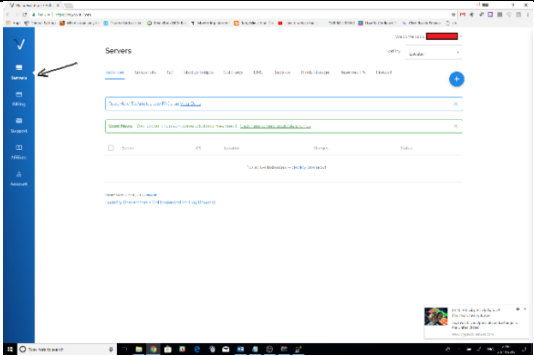
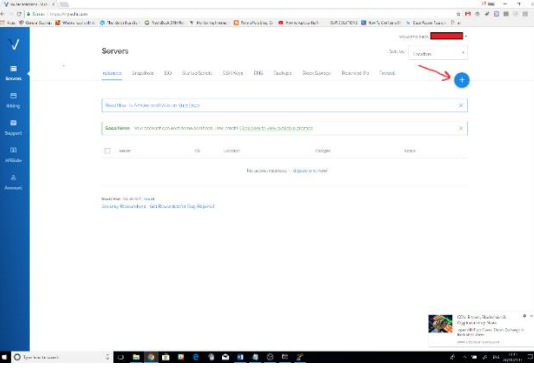
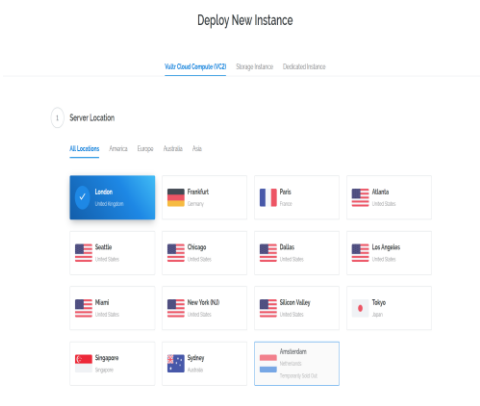
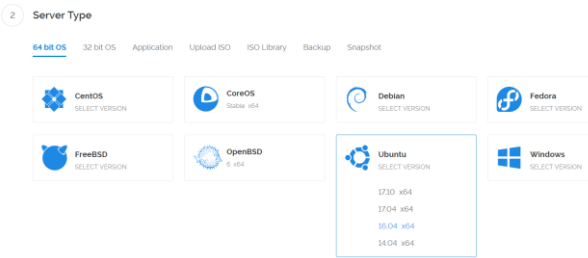
	
<p>12. On the console screen enter the root credentials with the password from the email (step 10) to log in.</p> <p>Please note copy and paste may not work. So please type carefully.</p>	
<p>13. You will be asked to change your password so please follow the instructions and make note of your new password and keep it safe.</p>	
<p>Congratulations. You have successfully created and logged into the VPS in Digital Ocean.</p>	


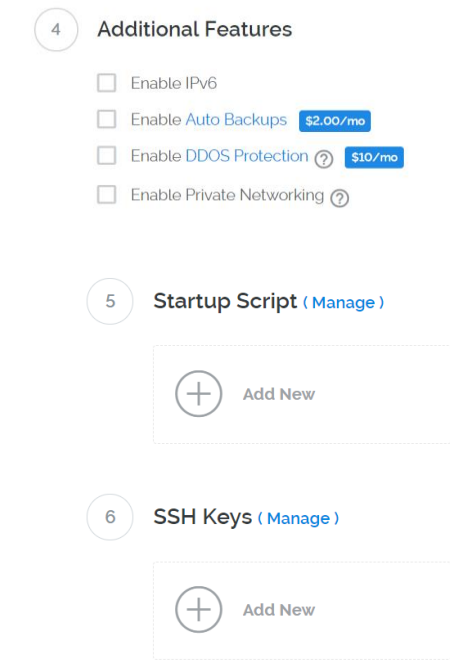


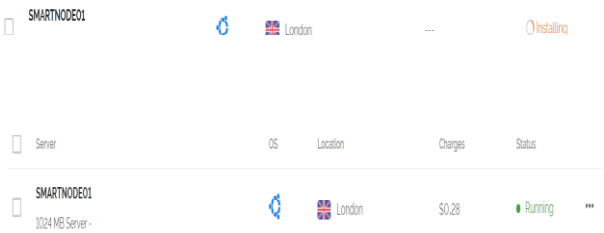
ALTERNATE Section 3: VPS Creation and Console Connection: vultr.com






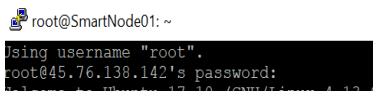
We are now going to use Vultr.com to create an Ubuntu Server in the Vultr console.

We will then log into the server using the Vultr control panel.

<p>1. Using Google Chrome go to Vultr.com and sign in for the service.</p> <p>Once you have signed up, add funds using an accepted form of payment.</p>	
<p>2. When you first log in.</p> <p>Click on the “Servers” icon in the blue left-hand navigation bar.</p>	

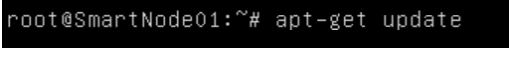


	
<p>3. Click the “+” on the right side of the page.</p>	
<p>4. Create a Server: a. Select your region.</p>	
<p>b. Select Ubuntu and 16.04 x64</p>	

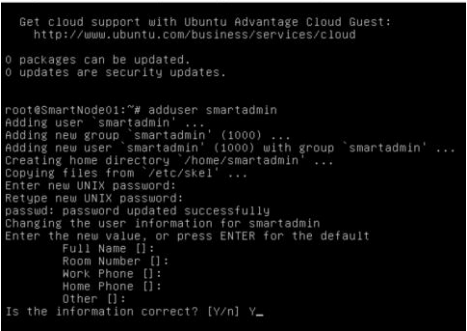
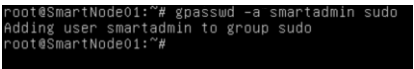
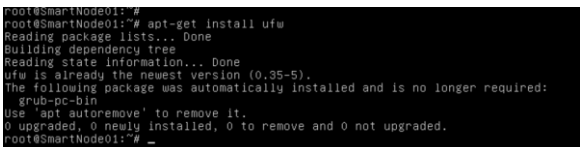
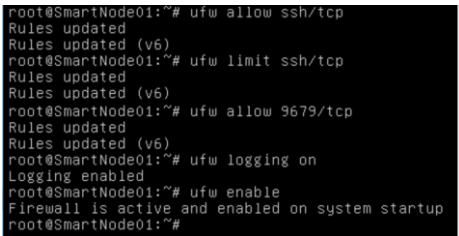
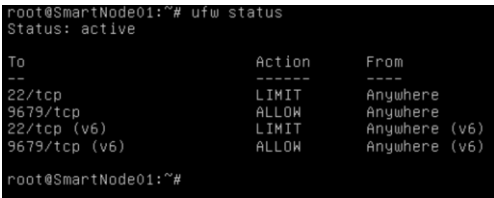

<p>c. Select the 1GB Ram option.</p>	
<p>d. Skip section 4 (Additional Features).</p> <p>Skip section 5 Startup Script</p> <p>Skip section 6 SSH Keys.</p> <p>At default: All should be empty.</p>	
<p>e. Enter a name for your SmartNode.</p>	
<p>f. Click on “Deploy Now”.</p>	
<p>5. You will now be returned to the servers page showing that the Smartnode server is now installing. Please wait 5 minutes for status to change from “Installing” to “Running”.</p>	
<p>6. Once running click on the SmartNode make a note of the IP-address and root password. We will</p>	

need these details to connect to the server.	<p>Location:  London</p> <p>IP Address: 45.76.138.142 </p> <p>Username: root</p> <p>Password: \$Tk8aZlgJJVfHlIP  </p>
7. Click on the connect button located in the top left.	
8. You should now have a connection to your Virtual Machine. Enter the root password exactly when prompted. Please note copy and paste may not work. So please type carefully.	
Please go to Section 4: Step to update the VPS, Create a user and install the firewall.	





Section 4: VPS: Update, Firewall and New user creation, Key Generation 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.

1. In the connection to the virtual machine let us get the latest updates, please type in <code>apt-get update</code> and hit enter.	
2. Now type <code>apt-get upgrade</code> and hit enter it will ask you if you want to upgrade just type yes.	
3. Restart the machine with <code>reboot</code> and log in again.	
4. Once you have logged back in let us create a new user smartadmin with the command <code>adduser smartadmin</code>	

<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 question “Is this information correct” and press enter.</p>	 <pre> 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. root@SmartNode01:~# adduser smartadmin Adding user 'smartadmin' ... Adding new group 'smartadmin' (1000) ... Adding new user 'smartadmin' (1000) with group 'smartadmin' ... Creating home directory /home/smartadmin ... Copying files from /etc/skel ... Enter new UNIX password: Retype new UNIX password: passwd: password updated successfully Changing the user information for smartadmin Enter the new value, or press ENTER for the default Full Name []: Room Number []: Work Phone []: Home Phone []: Other []: Is the information correct? [Y/n] Y_ </pre>
<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</p> <p><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</p> <p><code>apt-get install ufw</code></p>	 <pre> 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>
<p>10. Open up the correct ports for the SmartNode to function later.</p> <p><code>ufw allow ssh/tcp</code> <code>ufw limit ssh/tcp</code> <code>ufw allow 9678/tcp</code> <code>ufw logging on</code> <code>ufw enable</code></p>	 <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>
<p>11. Check the status of the firewall with</p> <p><code>ufw status</code></p>	 <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>
<p>12. As we have been using the console from the vultr control panel we have not used ssh. In the next section we get this sorted but first let us restart the machine again with</p> <p><code>reboot</code></p>	 <pre> root@SmartNode01:~# reboot </pre>

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.

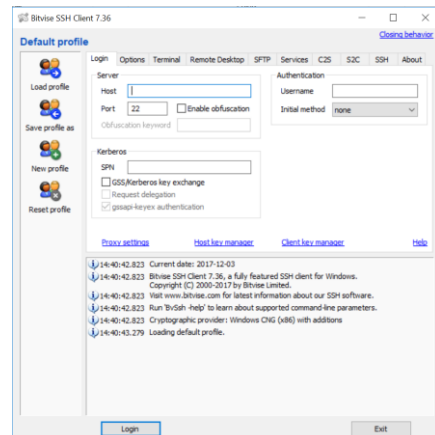
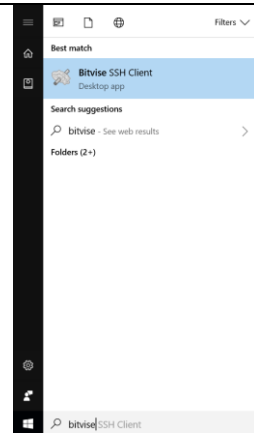
Location:  London
 IP Address: 45.76.138.142 
 Username: root
 Password: \$Tk8aZlgJJVfHlIP  

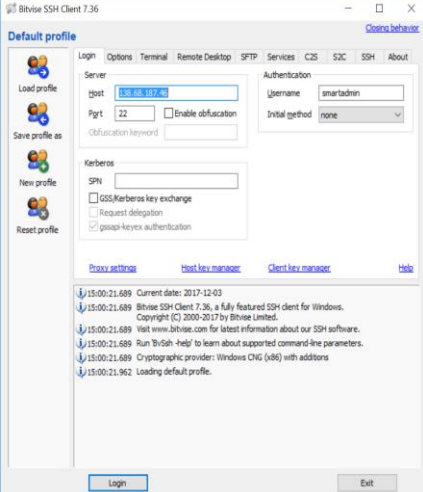
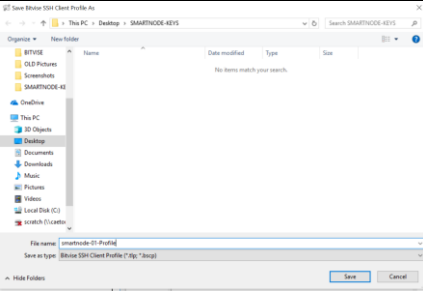
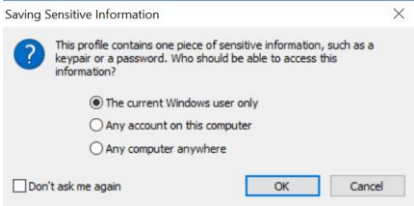
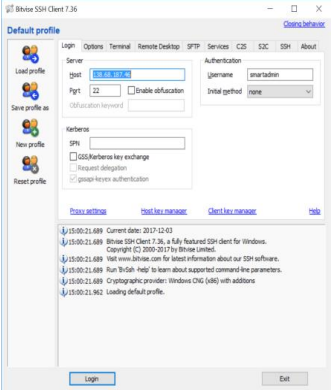
Congratulations you have successfully logged in as root, upgraded and updated the droplet. Created a new user smartadmin and installed/configured a firewall.

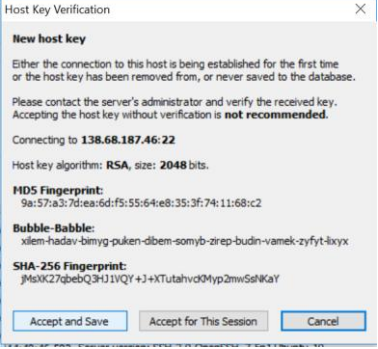
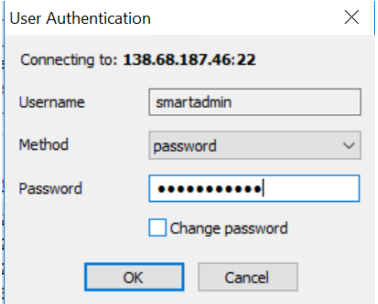

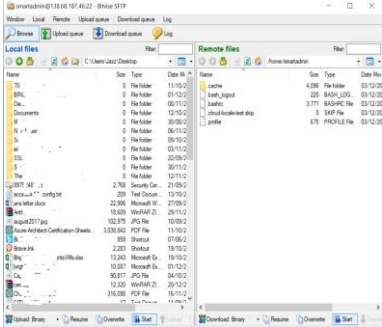
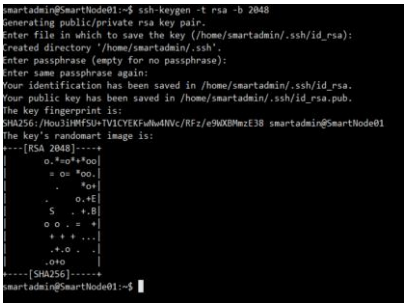
Section 5: Configure Secure Login as smartadmin using the privatekey

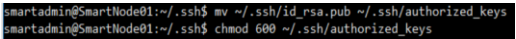
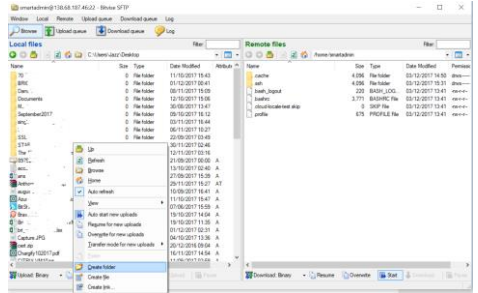
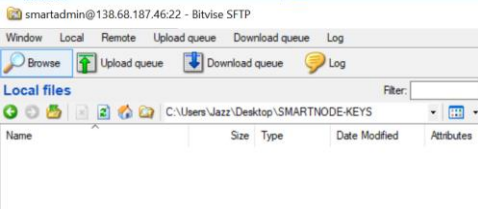
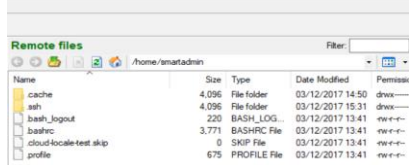

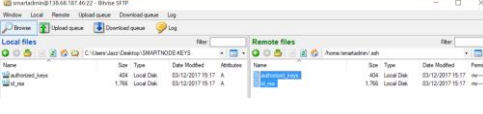
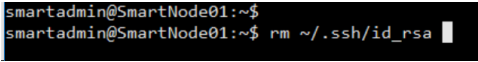
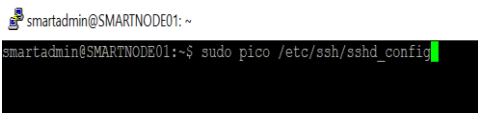
Now let us log in as the newly created user smartadmin and secure our SSH Connection

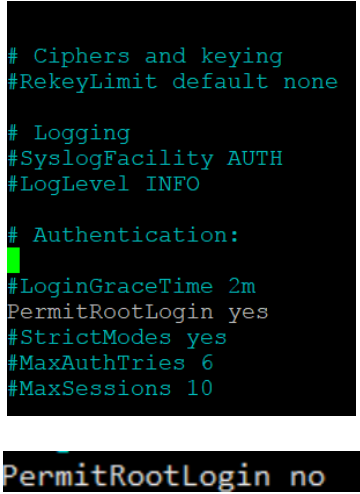
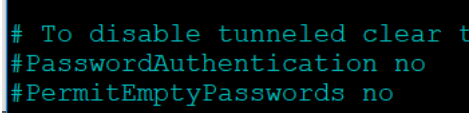
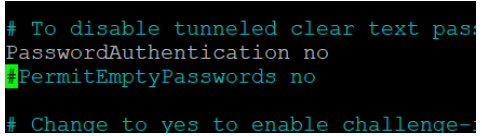
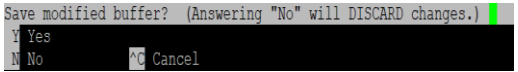
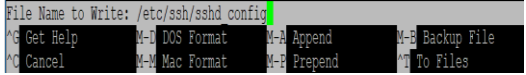
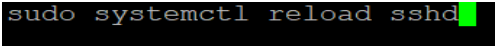

1. Go to Windows menu and start up Bitvise SSH Client.







<p>2. Enter in the details for:</p> <ul style="list-style-type: none"> • Host: IP Address of Droplet • UserName: smartadmin • Click “Save Profile as” 	
<p>3. Give the Profile a Name to Save-As. Click “Save”.</p>	
<p>4. Click “OK”.</p>	
<p>5. Click “Login”.</p>	
<p>6. Click “Accept and Save”</p>	

	 <p>Host Key Verification</p> <p>New host key</p> <p>Either the connection to this host is being established for the first time or the host key has been removed from, or never saved to the database.</p> <p>Please contact the server's administrator and verify the received key. Accepting the host key without verification is not recommended.</p> <p>Connecting to 138.68.187.46:22</p> <p>Host key algorithm: RSA, size: 2048 bits.</p> <p>MD5 Fingerprint: 9a:57:a3:7d:ea:6d:f5:55:64:e8:35:3f:74:11:68:c2</p> <p>Bubble-Bubble: xlem-hadav-bimyg-puken-dibem-somyb-zirep-budin-vamek-zyfyt-lxyx</p> <p>SHA-256 Fingerprint: jMsXK27qebQ3HJ1VQY+3+XTUtahvdMyp2mwSsNkaY</p> <p>Accept and Save Accept for This Session Cancel</p>
<p>7. Password: Type the password you created for the smartadmin user.</p> <p>Click "OK".</p> <p>Two windows will appear one xterm console window and a file transfer window.</p>	 <p>User Authentication</p> <p>Connecting to: 138.68.187.46:22</p> <p>Username: <input type="text" value="smartadmin"/></p> <p>Method: <input type="text" value="password"/></p> <p>Password: <input type="password" value="....."/></p> <p><input type="checkbox"/> Change password</p> <p>OK Cancel</p>  <pre>smartadmin@SmartNode01:~\$</pre>  <p>smartadmin@138.68.187.46:22 - Show SFTP</p> <p>Local files: /C:/Users/Local/OneDrive/... Remote files: /home/smartadmin/...</p>
<p>8. Go to the xterm console window and let us create the ssh key.</p> <p>ssh-keygen -t rsa -b 2048</p> <p>It will offer to save the file in the default location:</p> <p>/home/smartadmin/.ssh</p> <p>Press Enter to Accept Defaults.</p> <p>Create a Passphrase.</p> <p>Enter the Passphrase Again.</p>	 <pre>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:Hou3iHf5u+TV1CYEKfuhw4N/c/Rfz/e9KXIMmzE38 smartadmin@SmartNode01 The key's randomart image is: +--[RSA 2048]--+ o .oo+o+oo o .oo+ o .o+ o .+ o .+ o .+ o .+ o .+ o .+ o .+ +-----[SHA256]----- smartadmin@SmartNode01:~\$</pre>

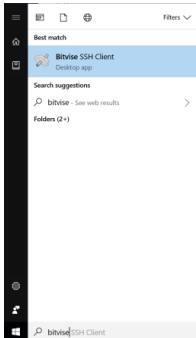
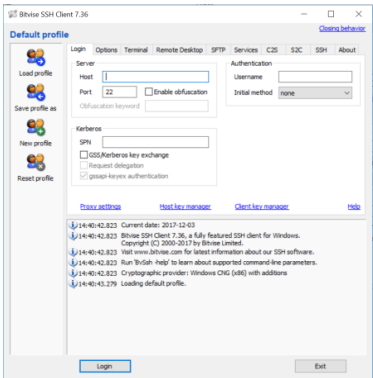
<p>9. Now we need to rename and change the permission on the public key.</p> <pre>mv ~/.ssh/id_rsa.pub ~/.ssh/authorized_keys</pre> <pre>chmod 600 ~/.ssh/authorized_keys</pre>	 <pre>smartadmin@SmartNode01:~/.ssh\$ mv ~/.ssh/id_rsa.pub ~/.ssh/authorized_keys smartadmin@SmartNode01:~/.ssh\$ chmod 600 ~/.ssh/authorized_keys</pre>
<p>10. Go to the File Transfer Window</p> <p>Create a folder in the left hand side of the file transfer window. (This is your local system - Windows 10 Machine)</p> <p>Right Mouse Click – Select Create folder named “SMARTNODE-KEYS”</p> <p>Double click the Folder to enter the folder.</p>	 
<p>11. On the right side is the Droplet/VPS Side of the file transfer window (Remote VPS Machine).</p> <p>Look for a directory called .ssh</p> <p>If this window is empty click or does not show .ssh folder on the refresh button on the right hand side.</p> <p>Go into the .ssh folder select both files and copy both files.</p> <p>Right mouse click and select “Download”</p>	  
<p>12. Go to the x-term session and delete the id_rsa (private key) file from linux with the command.</p> <pre>rm ~/.ssh/id_rsa</pre>	 <pre>smartadmin@SmartNode01:~\$ rm ~/.ssh/id_rsa</pre>
<p>13. 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>	 <pre>smartadmin@SMARTNODE01:~\$ sudo pico /etc/ssh/sshd_config</pre>

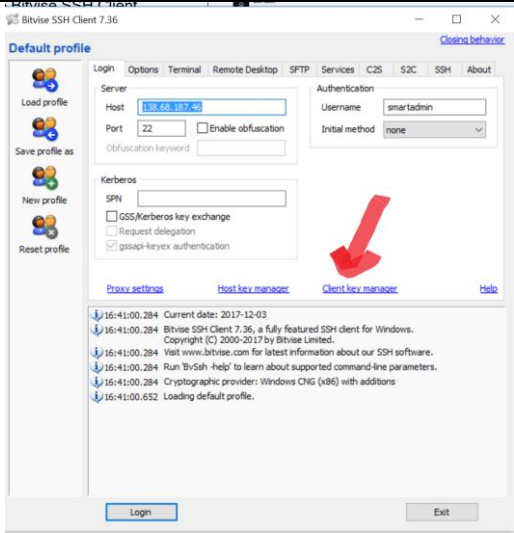
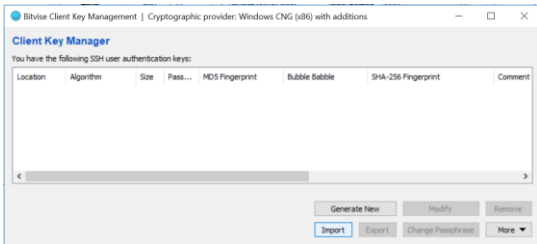
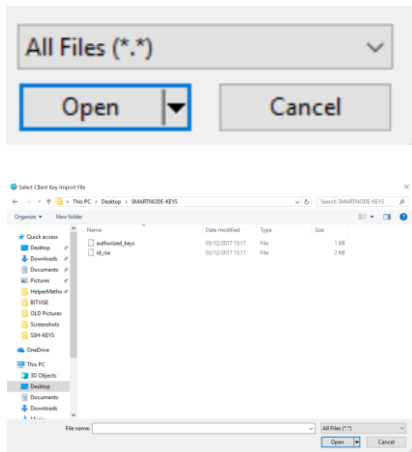
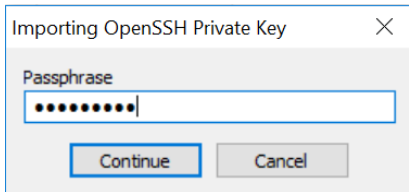
<p>14. Scroll down the file till you see PermitRootLogin yes</p> <p>and change it to no</p>	
<p>15. Scroll down to PasswordAuthentication and make sure it has no # in front and says no (check screenshot)</p>	 <p>To</p> 
<p>16. Now press CTRL + x to close.</p> <p>“Save modified buffer?” will appear at the bottom.</p> <p>Press Y to save.</p>	
<p>17. Hit Enter to confirm the filename to save as.</p>	
<p>18. Now it is time to restart the ssh service so the changes become active.</p> <p><code>sudo systemctl reload sshd</code></p>	
<p>19. Congratulations we are all done just restart the machine.</p> <p><code>sudo reboot</code></p> <p>Your machine is now updated and ready.</p>	

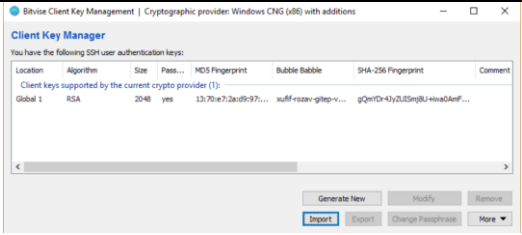
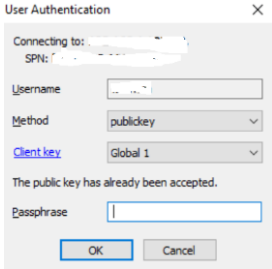
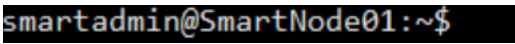
	Location:  London IP Address: 45.76.138.142  Username: root Password: \$Tk8aZlgJJVfHlIP  
20. Close Bitvise SSH and all associated windows.	

Section 6: Securely login as the smartadmin user with the private key and passphrase using Bitvise

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

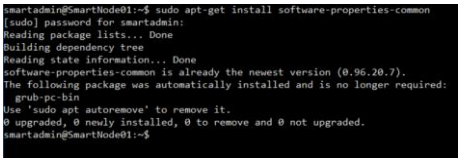
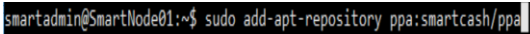
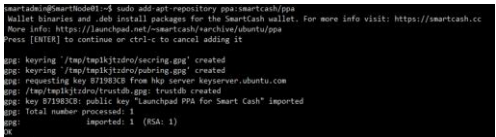
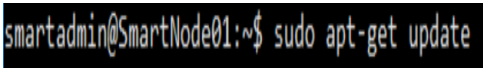
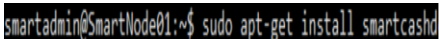
1. Go to Windows menu and start the Bitvise SSH Client	 
2. From the previous section when we used Bitvise, we should already have the connections already but just in case the screenshot is provided. Click on Client Key Manager Link	

	
<p>1. Click on Import.</p>	
<p>2. Navigate to the “SMARTNODE-KEYS” folder and then select the id_rsa file.</p> <p>(This was Section 5: Step 11)</p> <p>To see this file in the window. Change the file type to “All Files” in the drop-down in the bottom right corner .</p>	
<p>3. Enter the Passphrase used to create the ssh key (Section 5 Step 8).</p>	

	
<p>4. Select publickey and enter the password used for creating the key.</p> <p>Click OK.</p> <p>You should then be logged in.</p>	 
<p>Congratulations. You now have securely logged in with a secure key and password into your account.</p>	

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

<p>1. Lets install a package called software properties common</p> <pre>sudo apt-get install software-properties-common</pre>	
<p>2. Then type in</p> <pre>sudo add-apt-repository ppa:smartcash/ppa</pre> <p>Confirm the install by pressing Enter</p>	 
<p>3. Type</p> <pre>sudo apt-get update</pre>	
<p>4. Finally to install smartcash:</p>	

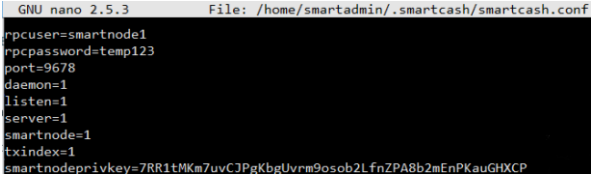
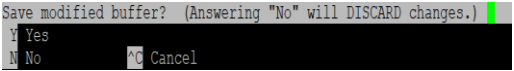
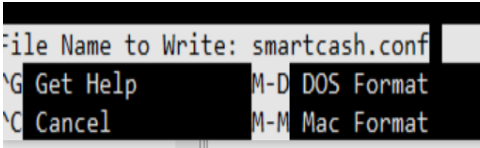
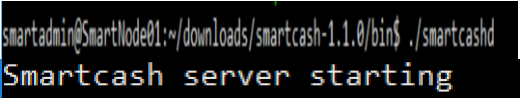
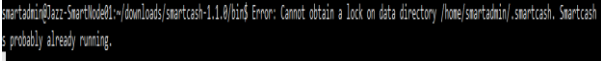
<code>sudo apt-get install smartcashd</code>	
Go to Section 8 to add a configuration file before running for the first time.	

ALTERNATE SECTION 7 Install with tar.gz file

1. In your terminal <code>mkdir ~/downloads</code>	<pre>smartadmin@SmartNode01:~\$ mkdir ~/downloads</pre>
2. <code>cd ~/downloads</code>	<pre>smartadmin@SmartNode01:~\$ cd ~/downloads</pre>
3. Type: <code>wget https://smartcash.cc/wp-content/uploads/2017/12/smartcash-1.1.0-x86_64-linux-gnu.tar.gz</code> For a latest download right click on the download file from the website and copy hyperlink.	<pre>wget https://smartcash.cc/wp-content/uploads/2017/12/smartcash-1.1.0-x86_64-linux-gnu.tar.gz</pre>
4. Type <code>tar -zxvf smartcash-1.1.0-86_64-linux-gnu.tar.gz</code>	<pre>smartadmin@SmartNode01:~/downloads\$ tar -zxvf smartcash-1.1.0-x86_64-linux-gnu.tar.gz</pre>
5. Type <code>cd smartcash1.1.0/bin/</code> The smartcashd and smartcash-cli files are inside this directory.	<pre>smartadmin@SmartNode01:~/downloads\$ cd smartcash-1.0.1/bin smartadmin@SmartNode01:~/downloads/smartcash-1.0.1/bin\$</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

1. Type <code>mkdir ~/.smartcash</code> press enter. <code>pico ~/.smartcash/smartcash.conf</code> press enter.	<pre>smartadmin@SmartNode01:~\$ pico ~/.smartcash/smartcash.conf</pre>
---	--

<p>2. We need to create a smartcash.conf file to create the node.</p> <p>Type:</p> <pre>rpcuser=smart rpcpassword=somethingunique port=9678 daemon=1 listen=1 server=1 smartnode=1 txindex=1 smartnodeprivkey=7RR1tMKm7uvC.....</pre> <p>smartnodeprivkey is the output from the command “<i>smartnode genkey</i>” command you used in Section 1: Step 12.</p>	 <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>
<p>3. Now press CTRL + x to close.</p> <p>“Save modified buffer?” will appear at the bottom.</p> <p>Press Y to save</p>	 <pre>Save modified buffer? (Answering "No" will DISCARD changes.) Y Yes N No ^C Cancel</pre>
<p>4. Press Enter to confirm Filename.</p>	 <pre>File Name to Write: smartcash.conf Get Help M-D DOS Format Cancel M-M Mac Format</pre>
<p>5. Start</p> <pre>smartcashd</pre> <p>(if installed via apt-get)</p> <p>or</p> <pre>./smartcashd</pre> <p>(if installed via tar.gz)</p> <p>If you receive a warning saying: “Error: Cannot obtain a lock on data directory /home/smartadmin/.smartcash. Smartcash is probably already running.”</p> <p>Stop the smartcash process with</p> <pre>./smartcash-cli stop</pre> <p>(if installed via tar.gz)</p> <p>or</p> <pre>smartcash-cli stop</pre> <p>(if installed via apt-get)</p>	 <pre>smartadmin@SmartNode01:~/downloads/smartcash-1.1.0/bin\$./smartcashd Smartcash server starting</pre>  <pre>smartadmin@Jazz-SmartNode01:~/downloads/smartcash-1.1.0/bin\$ Error: Cannot obtain a lock on data directory /home/smartadmin/.smartcash. Smartcash is probably already running.</pre>

Then try starting smartcash again

`./smartcashd`
(if installed via tar.gz)

or

`smartcashd`
(if installed via apt-get)

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

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

6. Now that smartcashd is running please leave it to sync the complete blockchain this can take about an hour.

`smartcash-cli getinfo`

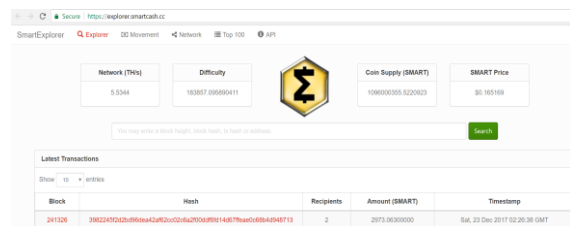
Type the above command every couple of minutes and check that the “blocks” field is increasing. When these numbers get within 1 block of the latest block explorer number you should then be fully synced.

Go to your Chrome Browser and get the latest block number from

<https://explorer.smartcash.cc>

```
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,



Block	Hash	Recipients	Amount (SMART)	Timestamp
241326	3982245f2d2bd96dea	2	2075.000000	Sat, 23 Dec 2017 12:20:38 GMT

Latest Transactions

Show 10 entries

Block

241326

3982245f2d2bd96dea

7. Once your VPS has completely synced run the command.

`./smartcash-cli smartnode status`

Or


`smartcash-cli smartnode status`
if you installed SmartCash via PPA

This will return a smartnode status.

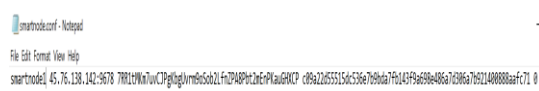
```
./smartcash-cli smartnode status
```

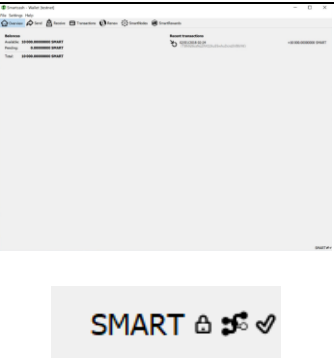
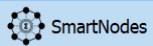
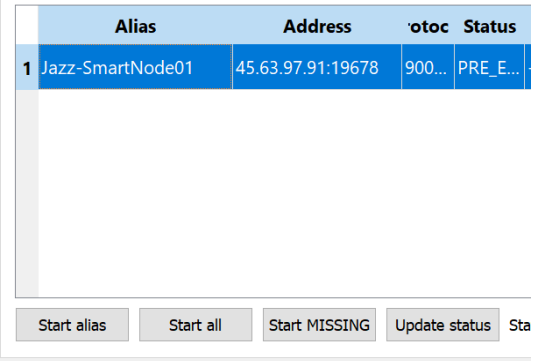
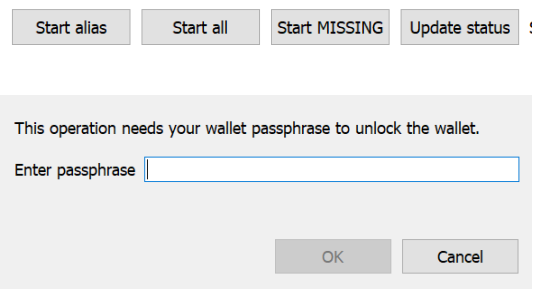
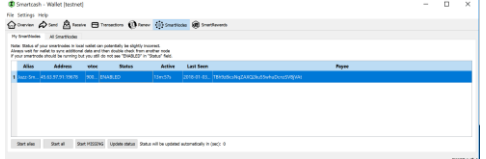
Current Smartnode Status

```
smartadmin@45.63.97.91:~$ ./smartcash-cli smartnode status
{
  "vin": "CtXIn(CoutPoint(b56ab31bc506ce770cb479197161cdc788ff846de1f0cde22c84a94acebd8ab, 2), scriptSig=)",
  "service": "45.63.97.91:19678",
  "payee": "TBH9B8icmgZANQ2kUSshuBcnzSVBjVt",
  "status": "Smartnode is capable but not activated."
}
```

<p>“Smartnode is capable but not activated”</p> <p>Once you run the start command from your local wallet and wait a few minutes, it will say</p> <p>“Smartnode successfully started”.</p>	 <p>After Section 9 is Complete</p>
<p>Congratulations your SmartNode is now configured.</p>	

Section 9: Start the SmartCash SmartNode

<p>1. Go back to your local Windows Machine Open the file in %appdata%/Smartcash (or the Data directory you selected when you installed the SmartCash Installer) called smartnode.conf.</p> <p>This file has an example showing how a smartnode can be added for the windows wallet to manage it.</p> <p>Each line denotes a single SmartNode.</p> <p>The line consists of the following information separated by a single space.</p> <p>LABEL: A one-word name you make up to call your node (ex. SmartNode01)</p> <p>IP : PORT: Your remote node VPS's IP-Address, and the port which is always 9678.</p> <p>SMARTNODEPRIVKEY: This is the result of your "smartnode genkey" from Section 1 Step 12.</p> <p>TRANSACTION HASH: The collateral tx. hash from "smartnode outputs" command from Section 1 Step 19.</p> <p>INDEX: The Index value(0,1,2..) at the end of the smartnode outputs from Section 1 Step 19.</p> <p>Add your smartnode details using the structure highlighted above. Do not add a # to the beginning lines of your smartnodes.</p> <p>Save the file.</p>	
<p>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).</p> <p>Wait for the wallet to fully sync: indicated by the tick in the bottom right corner.</p>	

	
3. Click on the "SmartNodes" Tab.	
4. Click on the "My SmartNodes" Tab.	
<p>5. Now to finally start your SmartNode.</p> <p>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.)</p> <p>You will be asked to type in your passphrase.</p>	
6. Your SmartNode will change from a "Missing" status to a "Pre-Enabled" to finally "Enabled" this takes about 10 minutes.	
Congratulations you are now running your first SmartCash Smartnode!	