

One-Minute Wonder: It's Incredible PBX 2021 for VirtualBox

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If you're new to the VoIP world and want to kick the tires to see what you're missing, then today's one minute setup is for you. You'll get a \$10 credit to try out some penny-a-minute calls and to purchase a \$1 a month phone number in your choice of area codes. If you decide VoIP is not for you, you don't have to buy anything *ever*. And you can use almost any desktop computer you already own to bring up the VirtualBox® edition of Incredible PBX® 2021. If you've followed Nerd Vittles over the years, you already know that VirtualBox from Oracle® is one of our favorite platforms. Once VirtualBox is installed on your desktop computer, adding Incredible PBX is a snap. [Download the latest Incredible PBX 2021 image from SourceForge](#), double-click on the downloaded image, check the *initialize MAC address* box, and boom. In less than a minute, your PBX is ready to use with the very latest components of Asterisk® 16 and FreePBX® 15. There are no hidden fees or crippleware to hinder your use of Incredible PBX for as long as you like. Just set up an account with our Platinum provider, Skyetel, and you can start making calls in minutes. Of course, the Incredible PBX feature set is included as well which brings you nearly three dozen applications for Asterisk that will revolutionize your communications platform. Speech-to-text, voice recognition, and a Siri-like telephony interface are as close as your SIP phone.

Installing Oracle VM VirtualBox



Oracle's virtual machine platform inherited from Sun is amazing. It's not only free, but it's pure GPL2 code. VirtualBox gives you a virtual machine platform that runs on top of any desktop operating system. In terms of limitations, we haven't found any. We even tested this on an Atom-based Windows 7 machine with 2GB of RAM, and it worked without a hiccup. So step #1 today is to download one or more of the VirtualBox installers from VirtualBox.org or Oracle.com. Our recommendation is to put all of the 100MB installers on a [4GB thumb drive](#).¹ Then you'll have everything in one place whenever and wherever you happen to need it. Once you've downloaded the software, simply install it onto your favorite desktop machine. Accept all of the default settings, and you'll be good to go. For more details, here's a link to the [Oracle VM VirtualBox User Manual](#).

NOTE: The Incredible PBX 2021 VM requires a VirtualBox 6.x platform. Adjust screen size in View -> Virtual Screen.

Installing the Incredible PBX 2021 Image

To begin, [download the Incredible PBX 2021 image](#) (3.3 GB) onto your desktop.

Next, double-click on the Incredible PBX .ova image on your desktop. Be sure to check the box to initialize the MAC address of the image if you're using an older version of VirtualBox. Then click **Import**. Once the import is finished, you'll see a new Incredible PBX 2021 virtual

machine in the VM List of the VirtualBox Manager Window. Let's make a couple of one-time adjustments to the Incredible PBX configuration to account for possible differences in sound and network cards on different host machines.

(1) Click once on the Incredible PBX virtual machine in the VM List. Then (2) click the *Settings* button. In *System* tab, check *Hardware Clock in UTC Time*. In the *Audio* tab, check the *Enable Audio* option and choose your sound card. In the *Network* tab for Adapter 1, check the *Enable Network Adapter* option. From the *Attached to* pull-down menu, choose *Bridged Adapter*. Then select your network card from the *Name* list. Then click *OK*. That's all the configuration that is necessary for Incredible PBX.

Running Incredible PBX 2021 in VirtualBox

Once you've imported and configured the Incredible PBX Virtual Machine, you're ready to go. Highlight the Incredible PBX virtual machine in the VM List on the VirtualBox Manager Window and click the *Start* button. The standard Linux boot procedure will begin and, within a few seconds, you'll get the familiar Linux login prompt. During the bootstrap procedure, you'll see a couple of dialogue boxes pop up that explain the keystrokes to move back and forth between your host operating system desktop and your virtual machine. Remember, you still have full access to your desktop computer. Incredible PBX is merely running as a task in a VM window. Always gracefully halt Incredible PBX just as you would on any computer.

Here's what you need to know. To work in the Incredible PBX virtual machine, just left-click your mouse while it is positioned inside the VM window. To return to your host operating system desktop, press the right *Option* key on Windows machines or the left *Command* key on any Mac. On Linux desktops, press the right *Ctrl* key. For other operating systems, read the dialogue boxes for instructions on moving around. To access the Linux CLI, login as root with the default password: *password*. Change your root password when you are prompted to do so. Then update your admin password for web access: **./admin-pw-change**. Also update your admin password for web applications: **./apache-pw-change**. You'll need these admin passwords to access the web GUI to manage your PBX as well as to use the AsteriDex and Reminders web apps. The above password updates are automatically requested when you first activate the virtual machine. You can update all of your other passwords using the scripts provided in /root. For example, you'll want to set the email delivery address for incoming faxes by running: **./avantfax-email-change**. And set the AvantFax admin password by running: **./avantfax-pw-change**. When running the AvantFax web application, be advised that you first will be prompted for your Apache admin credentials. Then you will be prompted for your AvantFax admin credentials.

Setting the Date and Time with VirtualBox

On some platforms, VirtualBox has a nasty habit of mangling the date and time of your virtual machine. Verify that you have enabled the *Hardware Clock in UTC Time* option for your virtual machine as documented above. If *pbxstatus* still shows an incorrect time, manually set the date and time and then update the hardware clock. Here's how assuming 08130709 is the month (August), day (13), and correct time (7:09 a.m.) of your server:

```
date 08130709
clock -w
```



Configuring Skyetel for Incredible PBX 2021

If you'd like to try out the Skyetel service at no charge, here's the drill. Sign up for Skyetel service to take advantage of the [Nerd Vittles specials](#). First, [complete the Prequalification Form here](#). You then will be provided a link to the Skyetel site to complete your registration. Once you have registered on the Skyetel site and your account has been activated, open a support ticket and request the \$10 credit for your account by referencing the [Nerd Vittles special offer](#). Once you are satisfied with the service, fund your account as desired, and Skyetel will match your deposit of up to \$250 simply by opening another ticket. That gets you up to \$500 of half-price calling. Credit is limited to one per person, company, and address.

Skyetel does not use SIP registrations to make connections to your PBX. Instead, Skyetel utilizes **Endpoint Groups** to identify which servers can communicate with the Skyetel service. An Endpoint Group consists of a Name, an IP address, a UDP or TCP port for the connection, and a numerical Priority for the group. For incoming calls destined to your PBX, DIDs are associated with an Endpoint Group to route the calls to your PBX. For outgoing

calls from your PBX, a matching Endpoint Group is required to authorize outbound calls through the Skyetel network. Thus, the first step in configuring the Skyetel side for use with your PBX is to set up an Endpoint Group. Here's a typical setup for Incredible PBX 16-15:

- **Name:** MyPBX
- **Priority:** 1
- **IP Address:** PBX-Public-IP-Address
- **Port:** 5060
- **Protocol:** UDP
- **Description:** my.incrediblepbx.com

To receive incoming PSTN calls, you'll need at least one DID. On the Skyetel site, you acquire DIDs under the **Phone Numbers** tab. You have the option of **Porting in Existing Numbers** (free for the first 60 days after you sign up for service) or purchasing new ones under the **Buy Phone Numbers** menu option.

Once you have acquired one or more DIDs, navigate to the **Local Numbers** or **Toll Free Numbers** tab and specify the desired **SIP Format** and **Endpoint Group** for each DID. Add **SMS/MMS** and **E911** support, if desired. **Call Forwarding** and **Failover** are also supported. That completes the VoIP setup on the Skyetel side. System Status is always available [here](#).

If VirtualBox is sitting behind a router or firewall on a private LAN, you'll need to forward ports UDP 5060 and 10000-20000 in your router to the private LAN address of your Incredible PBX server. Also edit your extensions in the GUI and set NAT=YES in the Advanced tab of every extension. In **Settings** -> **Asterisk SIP Settings**, click the **Detect Network Settings** button and then **Submit** your changes and reload the Asterisk dialplan when prompted.

Configuring VoIP.ms for Incredible PBX 2021

To sign up for VoIP.ms service, may we suggest you [use our signup link](#) so that Nerd Vittles gets a referral credit for your signup. Once your account is set up, you'll need to set up a SIP SubAccount and, for Authentication Type, choose Static IP Authentication and enter your Incredible PBX 2021 server's public IP address. For Transport, choose UDP. For Device Type, choose Asterisk, IP PBX, Gateway or VoIP Switch. Order a DID in their web panel, and then point the DID to the SubAccount you just created. Be sure to specify **atlanta1.voip.ms** as the POP from which to receive incoming calls.

Configuring V1VoIP for Incredible PBX 2021

To sign up for V1VoIP service, [sign up on their web site](#). Then login to your account and order a DID under the DIDs tab. Once the DID has been assigned, choose View DIDs and click on the Forwarding button beside your DID. For Option #1, choose Forward to IP Address/PBX.

For the Forwarding Address, enter the public IP address of your server. For the T/O (timeout) value, set it to 20 seconds. Then click the Update button. Under the Termination tab, create a new Endpoint with the public IP address of your server so that you can place outbound calls through V1VoIP.

Configuring Anveo Direct for Incredible PBX 2021

To sign up for Anveo Direct service, [sign up on their web site](#) and then login. After adding funds to your account, purchase a DID under Inbound Service -> Order DID. Next, choose Configure Destination SIP Trunk. Give the Trunk a name. For the Primary SIP URI, enter `[$[E164]]$@server-IP-address`. For Call Options, select your new DID from the list. You also must whitelist your public IP address under Outbound Service -> Configure. Create a new Call Termination Trunk and name it to match your server. For Dialing Prefix, choose six alphanumeric characters beginning with a zero. In Authorized IP Addresses, enter the public IP address of your server. Set an appropriate rate cap. We like \$0.01 per minute to be safe. Set a concurrent calls limit. We like 2. For the Call Routing Method, choose Least Cost unless you're feeling extravagant. For Routes/Carriers, choose Standard Routes. Write down your Dialing Prefix and then click the Save button.

Before you can make outbound calls through Anveo Direct from your PBX, you first must configure the Dialing Prefix that you wrote down in the previous step. Log into the GUI as admin using a web browser and edit the *Anveo-Out* trunk in *Connectivity -> Trunks*. Click on the *custom-Settings* tab and replace **anveo-pin** with your actual Dialing Prefix. Click *Submit* and *Apply Config* to complete the setup.

By default, incoming Anveo Direct calls will be processed by the Default inbound route on your PBX. If you wish to redirect incoming Anveo Direct calls using DID-specific inbound routes, then you've got a bit more work to do. In addition to creating the inbound route using the 11-digit Anveo Direct DID, enter the following commands after logging into your server as root using SSH/Putty:

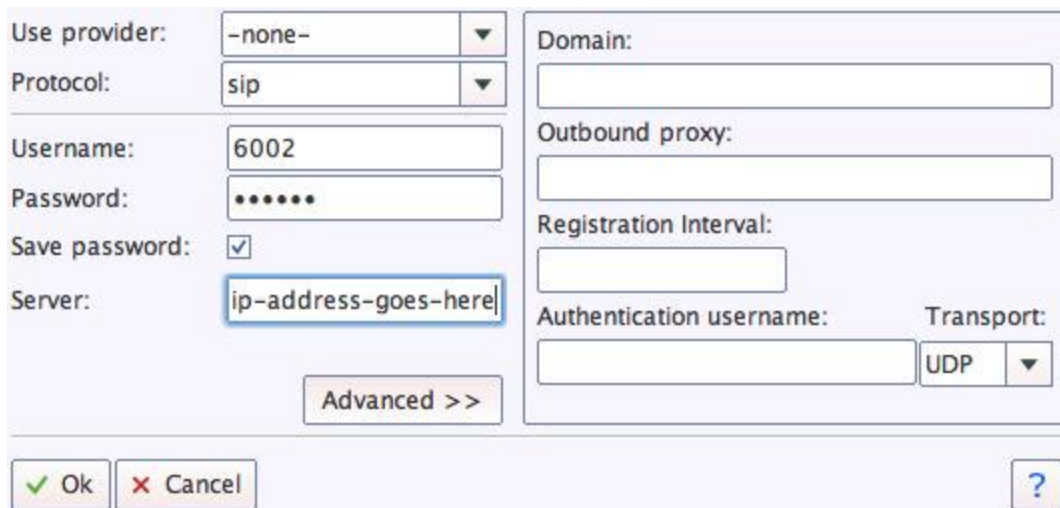
```
cd /etc/asterisk
echo "[from-anveo]" >> extensions_custom.conf
echo "exten => _,1,Ringing" >> extensions_custom.conf
echo "exten => _,n,Goto(from-trunk,\\${SIP_HEADER(X-anveo-e164)},1)" >>
extensions_custom.conf
asterisk -rx "dialplan reload"
```

Configuring a Softphone for Incredible PBX 2021

We're in the home stretch now. You can connect virtually any kind of telephone to your new PBX. Plain Old Phones require an analog telephone adapter (ATA) which can be a separate board in your computer from a company such as Digium. Or it can be a standalone SIP device such as ObiHai's OBi100 or OBi110 (if you have a phone line from Ma Bell to hook up as well). SIP phones can be connected directly so long as they have an IP address. These could be hardware devices or software devices such as the YateClient softphone. We'll start with a

free one today so you can begin making calls. You can find dozens of recommendations for hardware-based SIP phones both on Nerd Vittles and the PIAF Forum when you're ready to get serious about VoIP telephony.

We recommend YateClient which is free. [Download it from here](#). Run YateClient once you've installed it and enter the credentials for the 701 extension on Incredible PBX. You can find them by running `/root/show-passwords`. You'll need the IP address of your server plus your extension 701 password. In the YateClient, fill in the blanks using the IP address of your **Server**, 701 for your **Username**, and whatever **Password** was assigned to the extension when you installed Incredible PBX. Click OK to save your entries.



Use provider:	-none-	Domain:	
Protocol:	sip	Outbound proxy:	
Username:	6002	Registration Interval:	
Password:	*****	Authentication username:	
Save password:	<input checked="" type="checkbox"/>	Transport:	UDP
Server:	ip-address-goes-here		

Advanced >>

Ok Cancel ?

Configuring Incredible PBX 2021 for VirtualBox

In order to take advantage of all the Incredible PBX applications, you'll need to obtain IBM text-to-speech (TTS) and speech-to-text (STT) credentials as well as a (free) Application ID for Wolfram Alpha.

This [Nerd Vittles tutorial](#) will walk you through getting your IBM account set up and obtaining both your TTS and STT credentials. Be sure to write down BOTH sets of credentials which you'll need in a minute. For home and SOHO use, IBM access and services are mostly FREE even though you must provide a credit card when signing up. The IBM signup process explains their pricing plans.

To use Wolfram Alpha, sign up for a free [Wolfram Alpha API account](#). Just provide your email address and set up a password. It takes less than a minute. Log into [your account](#) and click on **Get An App ID**. Make up a name for your application and write down (and keep secret) your APP-ID code. That's all there is to getting set up with Wolfram Alpha. If you want to explore costs for commercial use, there are links to let you get more information.

In addition to your Wolfram Alpha APPID, there are two sets of IBM credentials to plug into the Asterisk AGI scripts. Keep in mind that there are different usernames and passwords for the IBM Watson TTS and STT services. The TTS credentials will look like the following:

`$IBM_username` and `$IBM_password`. The STT credentials look like this:
`$API_USERNAME` and `$API_PASSWORD`. Don't mix them up.

All of the scripts requiring credentials are located in `/var/lib/asterisk/agi-bin` so switch to that directory after logging into your server as root. Edit each of the following files and insert your TTS credentials in the variables already provided: **`nv-today2.php`**, **`ibmtts.php`**, and **`ibmtts2.php`**. Edit each of the following files and insert your STT credentials in the variables already provided: **`getquery.sh`**, **`getnumber.sh`**, and **`getnumber2.sh`**. Finally, edit **`4747`** and insert your Wolfram Alpha *APPID*.

Using AsteriDex with Incredible PBX

AsteriDex is a web-based dialer and address book application for Asterisk and Incredible PBX. It lets you store and manage phone numbers of all your friends and business associates in an easy-to-use SQLite3 database. You simply call up the application with your favorite web browser: `http://pbx-ip-address/asteridex4/`. When you click on a contact that you wish to call, AsteriDex first calls you at extension 701, and then AsteriDex connects you to your contact through another outbound call made using your default outbound trunk that supports numbers in the **`1NXXNXXXXXX`** format.

Keeping FreePBX 15 Modules Current

We strongly recommend that you periodically update all of your FreePBX modules to eliminate bugs and to reduce security vulnerabilities. From the Linux CLI, log into your server as root and issue the following commands:

```
fwconsole ma upgradeall
rm -f /tmp/*
fwconsole reload
/root/sig-fix
```

Taking Incredible PBX for a Test Drive

You can take Incredible PBX on a test drive by dialing D-E-M-O (3366) from any phone connected to your PBX.

With [Allison's Demo IVR](#), you can choose from the following options:

- **0. Chat with Operator** – connects to extension 701
- **1. AsteriDex Voice Dialer** – say "Delta Airlines" or "American Airlines" to connect
- **2. Conferencing** – log in using 1234 as the conference PIN
- **3. Wolfram Alpha Almanac** – say "What planes are flying overhead"
- **4. Lenny** – The Telemarketer's Worst Nightmare
- **5. Today's News Headlines** – courtesy of Yahoo! News
- **6. Weather by ZIP Code** – enter any 5-digit ZIP code for today's weather
- **7. Today in History** – courtesy of OnThisDay.com

- **8. Chat with Nerd Uno** — courtesy of SIP URI connection to 3CX iPhone Client
- **9. DISA Voice Dialer** — say any 10-digit number to be connected
- ***. Current Date and Time** — courtesy of Incredible PBX

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Special Thanks to Vitelocity. Vitelocity is now Voyant Communications and has halted new registrations for the time being. Our special thanks to Vitelocity for their unwavering financial support over many years and to the many Nerd Vittles readers who continue to enjoy the benefits of their service offerings. We will keep everyone posted on further developments.



<p>Smart solutions for Nerd Vittles Customers</p> <p>Learn More</p>  <p>VITELITY</p>	<p><i>Nerd Vittles Special</i> Unlimited DID</p>
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