

Astbill Implementators Manual



For astbill version 0.9.0.16

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You will find the latest version of this document at http://users.tpg.com.au/adslgw22/downloads/

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More Topics to be added here:

Preface:

This manual is intended for the use of astbill implementators and not for the astbill administrators.

Implementators generally use different tools and methods to setup a customers installation. This manual will provide guidance to them in the internal structure and workings of the astbill system.

A separate section titled **System Administrators Manual** is included in the end of this document, which when finished will be made as an individual download. The notes for this section are incomplete and it is a work in progress.

Legend:

	Tip or Idea
	Information
CAUTION	Caution: be careful of what your are doing
	Work in progress or under construction
STOP	STOP: Don't do it

Introduction:

AstBill is not only a web-based, user friendly billing interface for Asterisk and VOIP. It is also a Asterisk configuration and GUI management tool and a standardized implementation of Asterisk using REALTIME and static configuration as you please.

AstBill is open source software licensed under the GPL, and is maintained and developed by a community of users and developers. AstBill is free to <u>download</u> and use. If you like what AstBill can do for you, please work with us to expand and refine AstBill to suit your needs.

Astbill Features:

Here are some of the features of **AstBill**:

User-friendly End User Web interface gives access to a range of functionality:

- Personal Contact Directory with Categories
- View SIP, IAX and Virtual Accounts
- Virtual Accounts You can forward your calls to any extension you want
- Time based forwarding and Billing for Asterisk and VOIP
- Credit Control on outgoing calls
- Show Balance, Expenditure, Payments and number of Calls on each account
- Set warning balance for email when low credit on account
- View Numbers Dialed and add them to the Contact Directory
- View Numbers Dialed by Names from the Contact Directory
- Dynamic International Rate Table (Each customer can have his own price list using Brands)
- Rate Table in Currency of choice
- Call Data Records including cost of each call and time based billing
- Call Data Records in his Currency of choice
- Switchboard (Displays live status of users phones and ongoing calls)
- Allows one click calling from GUI and direct to phone
- Call Parking sends calls to parking and then redirects to phone
- Allows transfers of calls
- Edit your Account setup
- · Asterisk Billing and Management
- Edit voicemail setup including email and pin
- Create Time Based Dialing and billing. You to forward your calls based on time and day.
- Each user can have unlimited of SIP, IAX and Virtual Accounts
- Each user can have unlimited Prepaid Card Accounts linked to his userid
- Specify your hardware and change the viewable name of your accounts
- Temporary disable SIP, IAX or Virtual Account
- Manage your Incoming Public Numbers including Time based forwarding

User-friendly Administrator Web interface gives access to a range of functionality:

- Show Balance, Expenditure, Payments and number of Calls on each account
- Call Data Records including cost and Sales on each call
- Branding Module. Allows you to create Brands in any Currency
- For each Brand define Currency, Billing Increment, mark-up and connection charges
- Flexible Dynamic International Rate Table for Each Brand in any Currency
- Server Status (Displays live status of users phones and ongoing calls)
- Show Peers. List of the last clients (SIP and IAX2) that have connected to the Asterisk server.
- Audit Trail. Show IP, Port and UserAgent for each call
- Manage your Incoming Public Numbers including Time based forwarding
- Manage Trunks. You can use unlimited ZAP, IAX and SIP trunks.
- Time Based Trunk Dialing. Each trunk can have his own time based dialplan
- Temporary disable trunks
- Trunks can be rated after cost. Allow for cost based Dialing
- Define maximum concurrent outgoing calls on each trunk
- If lowest cost trunk is fully used (busy) the system will choose the next available trunk.
- Define unlimited outgoing routes and link them to your trunks

- Store cost of your outgoing route for each trunk for efficient cost control
- All outgoing routes are stored independent on the client price list
- Define customer price lists for each Brand and Currency
- Billing Routing and Management software for Asterisk and VOIP
- Advanced customer management and portal management
- Integrated E-commerce module and web shop is available under GPL
- Define list of VOIP hardware commonly used
- Full Hardware Inventory. Store mac address and serial numbers of client hardware
- View and Store Customers payments
- Asterisk Billing and Management
- Manage Pre Paid and Post Paid customers. Full Credit control by User Account
- View important Server logs from web interface
- Define maximum concurrent calls on each Customer Account

AstBill includes the functionality needed by most small- to medium-sized businesses (SMB). It is also very efficient as a platform for small VOIP providers. AstBill is used by several small businesses and is the platform for http://astartelecom.com the new European Asterisk call termination service currently in beta.

Astbill Requirements:

Hardware:

<u>The min requirements are:</u> Any PC or PC compatible with a min of PII 300Mhz processing power with 128MB Ram and 2-4GB Hdd, Floppy & CDROM.

<u>The recommended specifications are:</u> Any PC or PC Compatible with P4 2000Mhz+, 1GB Ram and 10Gb+ HDD & CDROM.

Software:

Linux O/S, Knoppix, Dsl, Debian, Centos etc...

PHP - The recommended php version is 5.0.4

<u>Asterisk</u> - Version 1.2.x (Most of AstBill is also working on Asterisk 1.0.9 but the 1.2x is needed for the new REALTIME features)

MySQL - Version 5.18 Astbill is using Views and Stored Procedures, which is only in 5 and up)

Apache - Version 2.0.54 (It should run fine with Apache Version 1.x but it's only been tested on 2.x)

<u>Drupal</u>- Version 4.6.3 (Drupal is GPL software that allows an individual or a community of users to easily publish, manage and organize a great variety of content on a website.)

LiveCD:

The LiveCD is a self contained fully installed and configured installation of astbill + php + apache + mysql. All you need to do is boot the server from the Cdrom and you have a working server.

The minimum ram required for the astbill cd is 256 mb ram.

Use it mainly for demo purposes as you will not be able to save any of your changes to the system.

You can also install this lived onto your hard drive and then work of the hard drive. It will install all programs and dependencies for you. Any changes that you do then are permanent and are saved onto your hard drive.

For more details on the operating system setup and its instructions, please refer to www.damnsmalllinux.org or the knoppix website.

Installation Instructions:

Please refer to the up-to-date install.txt for more information on how to setup your astbill solution.

First of all, make sure you have all the requirements set up properly. If you are having problems please take a look at the Further Advice section.

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Windows Specific:

Astbill will only work on a windows operating system if used as a remote astbill solution. You still need to run the asterisk server on other Linux servers.

Apache 2.x or IIS 5.1 or Higher PHP 5.0.4 Mysql 5.0.18 Drupal

Or you can download the latest version of Xampp from www.apachefriends.org . Xampp has apache, php, mysql & phpmyadmin all integrated into one simple install.

Follow the instructions in the drupal install.txt file for windows. Once you have a working website using drupal. Then create the astbill databases in mysql using the supplied mysql database files.

Then edit the settings.php file in drupal to change to astbill database and add the prefix "pbx $^{\prime\prime}$

Change the location of your astbill.conf module to the root of your webdirectory.

You need to manually edit the astbill modules to change the <u>astbill.conf</u> location variable in these modules to the correct one.

Then you will be able to get the channel and the server status.

Note: When running on windows + iis, you need to enable the gd2.dll in php.ini and set the email server details as well.

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Support

Don't forget that this is free software under development! Chances are good there's a crucial step that hasn't made it into the documentation. If you have any problems feel free to contact us on the forum http://astbill.com/forum/3

Please provide enough information to work with, and preferably be aware of what you're doing! And keep track of major changes to the software, including performance improvements and security patches.

The best way to get support is by using the forums. This allows other users to learn from your request.

http://astbill.com/forum/3

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Configuration:

System Setup:



Before you start using astbill, you should first customize it to suit your needs. By default astbill uses UK defaults. To change the defaults to suit your setup, you need to do the following:

You first need a blank database without any of the demo user accounts or any of the other data. Or you can use the existing one supplied by astbill. Then use phpmyadmin to empty the tables.

You need to use phpmyadmin or the astbilladmin program to maintain the data in your tables:

Download & install phpmyadmin from their website and configure it using the username and password of your astbill mysql username & password.

The order of customisation your astbill solution is as follows:

- 1) Edit the table astsystem and see if the defaults suit you.
- Add or Edit the astcurrency table for creating new currencies and editing old ones.
- 3) Edit/Add brands in the astbrands table.
- 4) Edit/Add prices in the astprices table for your brand
- 5) Edit astusers table and change the users table Ex: country & currency. or alter table structure to set your defaults.
- 6) Create trunks (asttrunk table)
- 7) Edit/create routes in astroutes for the above trunks

Remember all new accounts created automatically by astbill defaults to IAX only, you need to manually change them to SIP if you need a sip connection and belong to the default brand.

System Defaults:

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Database Structure:

Astbill version 0.9.0.16 has a total of 109 tables & views. Tables with the prefix pbx_belong to the drupal cms application.

All astbill Tables start with ASTxxxxx and all astbill Views start with ASVxxxx

The tables contain the actual data, where as the views show the data from the tables.

astsystem:



serverid (*)	name (*)	value (*)	comment (*)	viewstatus (*)
DEF	accountstart	7	This is the first digit of the automatically created account number. Automaticly created account number must be numberic	Е
DEF	accountlength	5	This is the length of the automatically created account number	E
DEF	firstaccount	72000	If there is no account defined in the 7 range. This will be the first account created	Е
DEF	TopUpURL	/topup/	The URL used to topup AstBill VOIP Software	E
DEF	LOGMessages	2000	This is the numbers of chars visible from the Asterisk Messages Log File	Е
DEF	AccountDropDown	1	If 1 We will use a Drop Down box to show Accountcode in Payment screen and other Screens. If 0 a text entry box will be used.	Е
DEF	GlobalDialPrefix		It is common to Add 00 as Global Dial Prefix. This allows users to dial international numbers without 00 or 011 prefix	N
DEF	MaxMinute	60	This is the maximum alloved minutes for a call. If your call last longer than this you will be disconnected by the System.	Е
DEF	AstBill-DB-Updated	2006-02- 14	This is the date of the last Database patch applied to your system	D
DEF	AstBill-Version	AstBill- 0.9.0.14	The Official Version number of your AstBill Installation	D
DEF	AstBill-GUI- Updated	2005-12- 08 08:20:44	The last date your Web GUI have been updated	D
DEF	Log-Path	/home/ast bill/logs/	This is the Path to log files created by agibin scripts	Е
DEF	def-voicemail-pin- length	4	The Voicemail PIN/Password Length to use when creating new accounts	Е
DEF	def-password- length	6	The Password Length to use when creating new accounts	E

Accountstart: This field specifies the FIRST DIGIT of all the user accounts. This impacts on the LOCAL Numbers. By Default it is "7". You may choose any starting digit. If you

change this digit here, be sure to change the value in the field "pattern" in the astroute table for the <u>local trunk</u>.

Accountlength: The default value is 5, which means that your account numbers will consists of a five digit number. By changing the length here, you need to update the field "patternlen" in the astroute table for the <u>local trunk</u>.

Firstaccount: The value in this field is used to create the very first account. This is used in a fresh install with a blank database. If you have any existing accounts starting in this range, then the system will continue on with the last created account.

TopUpUrl: This value specifies the URL Node where TopUp's to an account can be done.

LogMessages: Useful on a very busy system. Shows the number of characters from the asterisk message log file as defined here.

CountryPrefix: Set this value to the country code of your choice. The Default value here will be used when creating any new user.

AccountDropDown: This setting enables how the accountcode is filled in the payments screen. If it set to 1, then astbill shows a dropdown list of the accounts to choose from. If set to 0, then astbill will show a text box to fill the accountcode in manually.

Recommended is to use 1, as this will enable correct accountcodes to be selected.

GlobalDialPrefix: It is common to Add 00 as Global Dial Prefix. This allows users to dial international numbers without 00 or 011 prefix. So if you enter 00 or 011 in this value, your users need not dial this prefix. Astbill will use this prefix.

MaxMinute: This is the maximum allowed minutes for a call. If your call last longer than this you will be disconnected by the System. The default value is 60 minutes.

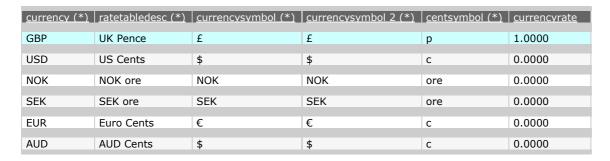
The recommended setting is 30 minutes.



Don't change your system setup once you have started using astbill. This will break the astbill solution. So plan ahead and set your defaults accordingly.

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Astcurrency:



Define your currencies in this table. This will be used in the Brands table to create your astbrands and in the astusers table

Currency: Input the short currency code CurrencySymbol: The symbol for this currency Currencysymbol 2: The second currency symbol

Centsymbol: the symbol to show cents

Currencyrate: the currency rate for this currency. This is currently not active.

Ratetabledesc: This field describes the currency

Untill the foreign currency rates are implemented, it is recommended that all your costs and sales prices be set in a single currency systemwide.

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Astcountrycode:

This table holds the country codes and the name of the country.

db prefix	pbx_ The db prefix by default is pbx_ This is usefull when running multiple sites from one database installation.
countrycode	The numeric code for the country
country	Country Name
usstate	The state name. Applies to US only
idd	The idd number for the country. Ex: the prefix code 00 before the international Tel number

This data in this table is pretty much stable and you may have no need to change them at all.

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Astplans:

Define your plans in this table.

name (*)	currency (*)	language (*)	publishednum (*)	<u>did (*)</u>	<u>markup</u>	<u>billincrement</u>	connectcharge	<u>status</u>
Star	GBP				50.00	1	1.00	1
Hiper	GBP				50.00	6	1.00	1
default	GBP				0.00	30	1.00	1

name	The name of plan
currency	The currency this plan will use
language	
publishednum	
did	
markup	Amount in decimal amount
billincrement	In seconds (time)
connectcharge	Amount In decimal amount
status	0= inactive, 1=active

You need to have at least one plan. The default plan can be customized for your needs.

From the above example you can see that the default plan is the most expensive on terms of the billincrement flag and it becomes smaller as the markup increases.

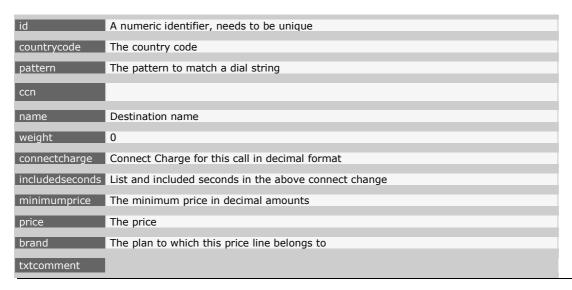


Remember to keep your default plan the most expensive one. The other plans can be setup based on cost, quality & importance.

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Astpricelist:

You need to define your pricelists. You need at least one pricelist for each route.



You need to setup a pricelist for every destination, for every plan you setup.

So if you have a plan called "default" then you need to enter the prices for your destinations here for this default plan.



Pricelist are the prices that you charge your customer.



If you do not have a price setup for any dialed destination they astbill will log an error in the astlog table.



Remember: to have at least one price for every country in the world. Do not leave any country out. For example:

Country Code =61 Pattern =61 Price=0.30 Country Code =62 Pattern =62 Price=0.35 & etc ...

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Asttrunk:

Define your trunks, which will be used by your Routes.

tid	The trunk id, auto generated by the system.
name	Name of the trunk, should be a unique name
tech	The technology used for this trunk. Local, Zap, Iax2 etc.
path	Only used if you want to use trunks created in your static files, sip.conf etc. if so then add "@" to the beginning of the trunk name used in your static configuration.
static	R=realtime
isdefault	1=yes default, 0=NO not default
serverid	Not Used currently
comment	Comments about this trunk
vat	If you want to add VAT to the Vendors prices before we calculate our cost. This field will make astcdr.ourcost include VAT. This is useful if you are not able to get your VAT back from your Vendors:
vat 2	If you don't want astcdr.ourcost to include the VAT but want to store the rate for use in reports. Update the vendors VAT rate. This rate is not used during calculations of astcdr.ourcost:
usagecount	This field is updated by astbill when calls occur, do not change this. Leave at 0
maxusage	Enter the maximum number of calls via this trunk. Default is 9999
trunkcost	The cost of the trunk in relation to the other trunks in your astbill. The lower trunks are used first.
accountcode	The accountcode to which this trunk belongs, leave blank
username	Username
currency	USD
tenantid	The tenanted number, default is 0
addprefix	The prefix you want to send to your service provider. Some providers require this.
removeprefix	The prefix that needs to be removed from your dialed number, useful if your service provider expects you to send a proper E164 formatted number. So you drop off the prefix like 00 & etc
registerstring	This is the register string you enter to register with your service provider
usstyleprefix	0

Trunks are your service providers. You enter the details of your service providers here. The minimum information that you need from your provider is the registration details and the connection type.

You need to setup at least one Trunk so that your customers can diallout using this trunk.

When setting up a single trunk, be sure to tick the default trunk tick box.

If you have multiple trunks setup here, then choose one of the trunk as the default trunk.

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In addition to the trunks that you create above, astbill has some system trunks that are not exposed in the above interface. This trunk relates to your extensions. It is called the Local trunk. This trunk makes it possible for your customers to call each other using their account numbers.

So if you are editing astbill tables using phpmyadmin then please be aware of this requirement.

Bug Note for astbill version 0.9.0.16:

There is a bug in the trunk editing code, where by when you edit a trunk; you will loose the trunk path details. This is a bug.

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Astroute:

id	A unique route id generated by astbill				
pattern	The pattern you want to use this route for.				
patternlen	The length of the pattern. Only useful for fixed length routes. Ex: your local users etc. otherwise leave at 0				
costplan	0				
connectcharge	The connect charge				
includedseconds	The included seconds in the connect charge				
billincrement	Billing time in seconds				
minimumcost	The minimum cost				
cost	The cost for this trunk				
trunk	The trunk to use				
timestamp	25/10/2005				
countrycode	The country code				
routename	The route name				



Remember: Astroute are your cost prices that are charged to you by your provider.



STOP: Have you remembered to create a route for every possible destination. If you do not have a route setup for a particular dialed number pattern, then astbill will charge your customer incorrectly for this call, using default cost values.

This is an astbill design flaw and should be addressed by the developers.

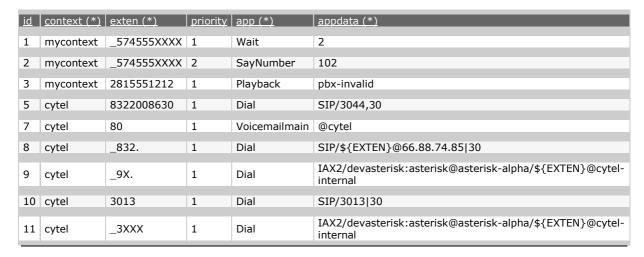
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Astdialplan:



This dialplan is used for setting your preferences in accepting calls and or diverting calls to voicemail based on your time preferences.

Astextensions:



This table is not in use currently and can be ignored

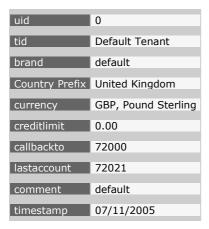
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Asttennants:



Currently being developed so do not use it now.

Astuser:



Do not edit this table directly. The only field you should edit is the brand value (renamed as plan)

This table is a mirror copy of the drupal pbxusers table.

Any users created using the drupal administration section will also add an identical user in this table.

Note: when you edit or delete users in drupal, then the changes are not update in this table.

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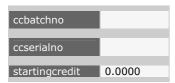
Astaccounts:

This table where all the action happens in astbill. Contains all user settings for asterisk to allow the customer to register , receive and make calls.

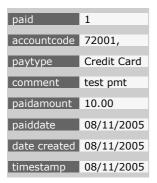
Be careful when changing any of the account codes and account numbers.



mailboxemail	
pager	
stamp	
attach	yes
saycid	yes
hidefromdir	no
nat	yes
qualify	yes
emailvoicemail	1
mask	
musiconhold	
notransfer	
permit	
pickupgroup	
regexten	
restrictcid	
restrictid	
rtpholdtimeout	
rtptimeout	
type	friend
comment	
serverid	
active	1
hardwareid	1
usagecount	0
creditlimit	0.00
lowbalance	5.00
lowbalanceemail	0
date created	07/11/2005
timestamp	07/11/2005
ipaddr	
regseconds	0
port	
reg changed	00/00/0000
cccardvalue	0.0000
ccfirstused	00/00/0000
cclastused	00/00/0000
ccexpiredate	00/00/0000
ccexpiredays	0



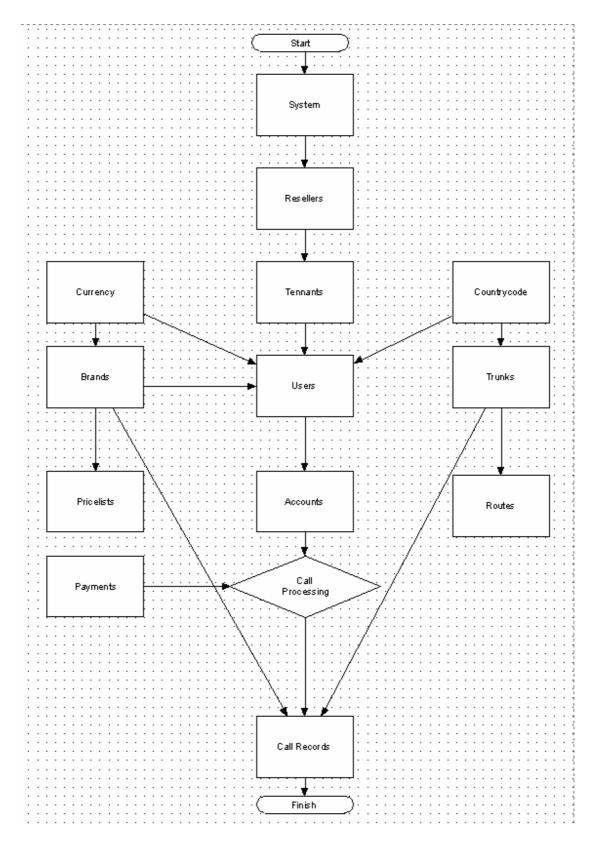
Astpayment:



Contains details of payments received for the accountcode.

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Astbill Flow Chart:



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Astbill Mysql Procedures:

astCreateAcc

This is called by astCreateAccount and allocates the first available unused accountcode to the new user created. This also creates the users in the atbill database if it does not exist as compared against the drupal users table.

astCreateAccount

This procedure is run when a new account is created and checks to see if there a any unused accounts for user 0. if less than 5 then it creates additional accounts for each technology.

RateAddcdr
RateCost
RateGetTrunk
RateStarDead
TrunkDialPlan
astTestBilling
RateSale

RateReserveCredit

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FAQ:



What is the default system currency?

None. There is no default system currency used at the moment.

How is the currencyrates used?

This is not used Yet. Will be used to automatically calculate price lists in different currencies.

In what currency is the user payments received in?

Same currency as the currency assigned to the account using the brand code of the user. We have to put that on the payment screen.

In what currency does the system calculate the costs and the user balances?

Same currency as the currency assigned to the account using the brand code of the user

what is the purpose for the virtual account?

What is it used for?

Virtual Account = Forward calls to any Extension

Virtual Account = You can forward your calls to any extension you want.

You can also forward the call to many extensions by entering the numbers you want to forward to separated by &

(Example: 9000&8000)

You don't put SIP or IAX in front of the number as AstBill is keeping track of the protocol used.

Personally I work in different locations during the week and I have my number a Virtual Account. This allows me to put in my Real SIP or IAX number for forwarding at any time.

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It is like a number that is not bound to a location. If you put a SIP phone on your desk it is still on your desk when you are gone. When you are not there your phone is still there.

Very soon the virtual accounts will also be able to transfer calls to Mobile phones and other external numbers.

I normally put my Virtual Number in my Caller ID for each SIP phone I am using like this.

Are

If my Virtual Number is 70999. This will make anybody to call me back on 70999 and I can have the same number in any location without having to reprogram any SIP or IAX phone.

how to round dialed seconds

if someone made a call for 42 seconds how to round it to 50?

seems that astbill rounds call to 30 sec. how to change this?

AstBill can round anything:-)

It is in the Mysql Table astbrand.billincrement You can edit it in the web interface using AstBill Admin / Settings Brand Edit

There you have the Billing Increment: field. If you put 10 there AstBill will round up to 50 seconds. This is a Brand Dependent parameter.

Drupal User Control

I have a problem creating drupal users:

When I create a user which is only an "authenticated user" the menus that he sees are:

Contact directory my account log out

When I create a user (similar to astbilladmin): "authenticated user, Admin, Adoroar"

the menus that he sees are:

Contact directory create content my account AstBill Admin Incoming Friends Call Data Record Create Account Hardware Server Status Tenants administer log out

I am not sure which menus the authenticated user should see, but clearly he should see more menus.

What am I missing?

Access Control

Click on administer / Access Control

I can see now that many of the modules don't have access for the Admin Role. You just need to enable the Modules you want admin users to have access to. I think All the modules are a good start. The AstBill Modules are the ones starting with ast.

By Drupal Design user number 1 (astbilladmin) have access to all installed modules and functions. He is like a Super Admin.

What is the difference between the payments menu and the submenu credit?

When we put an entry in the payments menu shouldn't it in an automatic way update the credits of a specific account?

Payments are for prepaid Credit is for example: post paid limit.

I like to think of it as the credit limit set for the postpaid user's accountcode.

Changing the name of the AstBill database

I was doing and install today where I had to use a different name on the AstBill Database in MySQL.

It was not a problem but a few things to remember so I created a Wiki Entry.

http://wiki.astbill.com/wiki/Change database

There are 4 files to edit if you want to change the name of the AstBill Database.

```
/home/astbill/astbill.conf
/etc/asterisk/res_mysql.conf
/etc/asterisk/extconfig.conf
sites/default/settings.php
```

We are changing the name from astbill to voipbilling

```
astbill.conf
dbhost = localhost
dbname = voipbilling
dbuser = astbilluser
dbpass = astbill419
res_mysql.conf
[general]
dbhost = localhost
dbname = voipbilling
dbuser = astbilluser
dbpass = astbill419
dbport = 3306
; For Debian
dbsock = /var/run/mysqld/mysqld.sock
; For Asterisk @ Home
; dbsock = /var/lib/mysql/mysql.sock
extconfig.conf
;example => odbc,asterisk,alttable
iaxusers => mysql,voipbilling,asv iax
iaxpeers => mysql,voipbilling,asv_iax
sipusers => mysql,voipbilling,asv_sip
sippeers => mysql,voipbilling,asv sip
voicemail => mysql,voipbilling,asv_voicemail
;extensions => odbc,asterisk
;queues => odbc,asterisk
;queue_members => odbc,asterisk
settings.php
Make sure the $db url line matches the database defined in the previous steps:
$db url = "mysql://username:password@localhost/database";
where 'username', 'password', 'localhost' and 'database' are the
username, password, host and database name for your set up.
The correct example for this guide is:
$db_url = 'mysql://astbilluser:astbill419@localhost/voipbilling';
```

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Dial Features:

700 Call Parking (then Dial 701 to 720 to set position)

- **1 Blind Transfer
- *1 One Touch Record
- **2 Attended Transfer
- 198 VoicemailMain
- 199 Voicemail for your Extension
- 500 Date & Time
- 501 Monkeys
- 502 Echo Test
- 503 It is free playback

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Asterisk Commands:

! Execute a shell command abort halt Cancel a running halt add extension Add new extension into context add ignorepat Add new ignore pattern add gueue member Add a channel to a specified gueue ael debug contexts Enable AEL contexts debug ael debug macros Enable AEL macros debug ael debug read Enable AEL read debug ael debug tokens Enable AEL tokens debug ael no debug Disable AEL debug messages ael reload Reload AEL configuration agent logoff Sets an agent offline agi debug Enable AGI debugging agi no debug Disable AGI debugging cdr mysgl status Show connection status of cdr mysgl cdr status Display the CDR status database del Removes database key/value database deltree Removes database keytree/values database get Gets database value database put Adds/updates database value database show Shows database contents database showkey Shows database contents debug channel Enable debugging on a channel debug level Set global debug level dnsmgr reload Reloads the DNS manager configuration dnsmgr status Display the DNS manager status dont include Remove a specified include from context dump agihtml Dumps a list of agi command in html format dundi debug Enable DUNDi debugging dundi flush Flush DUNDi cache dundi lookup Lookup a number in DUNDi dundi no debug Disable DUNDi debugging dundi no store history Disable DUNDi historic records dundi precache Precache a number in DUNDi dundi query Query a DUNDi EID dundi show entityid Display Global Entity ID dundi show mappings Show DUNDi mappings dundi show peers Show defined DUNDi peers dundi show peer Show info on a specific DUNDi peer dundi show precache Show DUNDi precache dundi show requests Show DUNDi requests dundi show trans Show active DUNDi transactions dundi store history Enable DUNDi historic records extensions reload Reload extensions and *only* extensions

feature show channels Show status of feature channels group show channels Show active channels with group(s) help Display help list, or specific help on a command iax2 debug Enable IAX debugging iax2 jb debug Enable IAX jitterbuffer debugging iax2 no debug Disable IAX debugging iax2 no jb debug Disable IAX jitterbuffer debugging iax2 no trunk debug Disable IAX trunk debugging iax2 provision Provision an IAX device iax2 prune realtime Prune a cached realtime lookup iax2 reload Reload IAX configuration iax2 set jitter Sets IAX jitter buffer iax2 show cache Display IAX cached dialplan iax2 show channels Show active IAX channels iax2 show firmware Show available IAX firmwares iax2 show netstats Show active IAX channel netstats iax2 show peer Show details on specific IAX peer iax2 show peers Show defined IAX peers iax2 show provisioning Show iax provisioning iax2 show registry Show IAX registration status iax2 show stats Display IAX statistics iax2 show users Show defined IAX users iax2 test losspct Set IAX2 incoming frame loss percentage iax2 trunk debug Enable IAX trunk debugging include context Include context in other context indication add Add the given indication to the country indication remove Remove the given indication from the country init keys Initialize RSA key passcodes load Load a dynamic module by name local show channels Show status of local channels logger reload Reopens the log files logger rotate Rotates and reopens the log files logger show channels List configured log channels meetme Execute a command on a conference or conferee mgcp audit endpoint Audit specified MGCP endpoint mgcp debug Enable MGCP debugging mgcp no debug Disable MGCP debugging macp reload Reload MGCP configuration mgcp show endpoints Show defined MGCP endpoints mixmonitor Execute a MixMonitor command moh classes show List MOH classes moh files show List MOH file-based classes moh reload Music On Hold no debug channel Disable debugging on a channel pri debug span Enables PRI debugging on a span pri intense debug span Enables REALLY INTENSE PRI debugging pri no debug span Disables PRI debugging on a span

pri set debug file Sends PRI debug output to the specified file pri show debug Displays current PRI debug settings pri show span Displays PRI Information pri unset debug file Ends PRI debug output to file realtime load Used to print out RealTime variables. realtime mysql status Shows connection information for the MySQL RealTime driver

realtime update Used to update RealTime variables.

reload Reload configuration

remove extension Remove a specified extension

remove ignorepat Remove ignore pattern from context

remove queue member Removes a channel from a specified queue restart gracefully Restart Asterisk gracefully

restart now Restart Asterisk immediately

restart when convenient Restart Asterisk at empty call volume

rtp debug Enable RTP debugging

rtp debug ip Enable RTP debugging on IP

rtp no debug Disable RTP debugging

set debug Set level of debug chattiness

set verbose. Set level of verboseness

show agents Show status of agents

show agi Show AGI commands or specific help

show applications Shows registered dialplan applications

show application Describe a specific dialplan application

show audio codecs Shows audio codecs

show channel Display information on a specific channel

show channels Display information on channels

show channeltypes Show available channel types

show codecs Shows codecs

show codec Shows a specific codec

show conferences Show status of conferences

show config mappings Show Config mappings (file names to config engines)

show dialplan Show dialplan

show features Lists configured features

show file formats Displays file formats

show functions Shows registered dialplan functions

show function Describe a specific dialplan function

show hints Show dialplan hints

show image codecs Shows image codecs

show image formats Displays image formats

show indications Show a list of all country/indications

show keys Displays RSA key information

show manager command Show a manager interface command show manager commands List manager interface commands show manager connected Show connected manager interface users show modules List modules and info

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show modules like List modules and info show parkedcalls Lists parked calls show queue Show status of a specified queue show queues Show status of queues show switches Show alternative switches show translation Display translation matrix show uptime Show uptime information show version Display version info show version files Show versions of files used to build Asterisk show video codecs. Shows video codecs. show voicemail users List defined voicemail boxes show voicemail zones List zone message formats sip debug Enable SIP debugging sip debug ip Enable SIP debugging on IP sip debug peer Enable SIP debugging on Peername sip history Enable SIP history sip no debug Disable SIP debugging sip no history Disable SIP history sip notify Send a notify packet to a SIP peer sip prune realtime Prune cached Realtime object(s) sip prune realtime peer Prune cached Realtime peer(s) sip prune realtime user Prune cached Realtime user(s) sip reload Reload SIP configuration sip show channels Show active SIP channels sip show channel Show detailed SIP channel info sip show domains List our local SIP domains. sip show history Show SIP dialog history sip show inuse List all inuse/limits sip show objects Show all SIP object allocations sip show peer Show details on specific SIP peer sip show peers Show defined SIP peers sip show registry Show SIP registration status sip show settings Show SIP global settings sip show subscriptions Show active SIP subscriptions sip show users Show defined SIP users sip show user Show details on specific SIP user skinny debug Enable Skinny debugging skinny no debug Disable Skinny debugging skinny show devices Show defined Skinny devices skinny show lines Show defined Skinny lines per device soft hangup Request a hangup on a given channel stop gracefully Gracefully shut down Asterisk stop now Shut down Asterisk immediately stop when convenient Shut down Asterisk at empty call volume unload Unload a dynamic module by name zap destroy channel Destroy a channel zap show cadences List cadences

zap show channels Show active zapata channels zap show channel Show information on a channel zap show status Show all Zaptel cards status

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Recommended:

- 1) Have two trunks at least. A "DEF" trunk with the most expensive rates and another one with your normal sales prices.
- 2) DO not tick your normal trunk as the "default" one. Unless you have only one trunk.

Error Messages:

- 1) ERROR', 'No Route-RateAddcdr.proc-10164' happens because you do not have a route setup for this particular dialed number pattern.
- 2) ('ERROR', 'No Route-RateCost.proc-10153' happens

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System Administrators Manual



Version 3.0

For astbill version 0.9.0.16

Compiled by Anil Madikonda

anil@madikonda.com

You will find the latest version of this document at http://users.tpg.com.au/adslgw22/downloads/

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Legend:

	Tip or Idea
	Information
CAUTION	Caution: be careful of what your are doing
	Work in progress or under construction
STOP	STOP: Don't do it

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Astbill Administrators Guide:





•	<u>ac</u>	<u>lminister</u>
		access control
	0	blocks
		categories
	•	content
	□	input formats
	□	logs
	□	menus
	□	modules
	۰	settings
	□	themes
	•	url aliases
	0	users
	0	help
0	lo	g out

Home » administer				
access control				
permissions role	es	account	rules	
In this area you will define the part the user roles page). Each permbeing able to access the adminicould say a permission represer	nission de stration	escribes a pages, or	fine-grained logical adding/modifying a	operation, such as user account. You
Permission	Admin	Adoroar	anonymous user	authenticated user
astadmin module				
astadmin accesslog				
astadmin asterisk				
astadmin payment				
astadmin use Assign DID				
can use AstBill Admin				
astcallcard module				
can use callcard				
astcontact module				
can use astcontact	✓	✓		✓

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Home » administer

menus

list add menu add menu item reset menus

Select an operation from the list to move, change, or delete a menu item.

Navigation

Menu item	Expanded	Operations
(disabled)		enable
Contact directory	No	edit disable
- Add contact		edit disable
- Categories	No	edit disable
VOIP Account	Yes	edit disable reset
- Calls	No	edit disable
- Incoming Numbers		edit disable
- Rate Table		edit disable
- Settings		edit disable
- Switchboard		edit disable
compose tips (disabled)		enable
content (disabled)	No	enable
- create content (disabled)	No No	enable
		Pro Pro Lit

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Нι	nme	- >>	ad	mı	nis	ter

modules

Modules are plugins for Drupal that extend its core functionality. Here you can select which modules are enabled. Click on the name of the module in the navigation menu for their individual configuration pages. Once a module is enabled, new permissions might be made available. Modules can automatically be temporarily disabled to reduce server load when your site becomes extremely busy by enabling the throttle.module and checking throttle. The auto-throttle functionality must be enabled on the throttle configuration page after having enabled the throttle module.

Name	Description	Enabled
aggregator	Aggregates syndicated content (RSS and RDF feeds).	
archive	Displays a calendar for navigating older content.	
astadmin	AstBill Admin	✓
astcallcard	AstBill Callcard	✓
astcontact	: AstBill Contact Directory	✓
astentry	AstBill Billing and Configuration	✓
astpbx	AstBill User Module	✓
astpricelist	AstBill Pricelist	✓
astroute	AstBill Routing	✓
astsettings	AstBill Settings	✓
asttenant	AstBill Tenants	✓
block	Controls the boxes that are displayed around the main content.	required
hloa	Fnahles keening an easily and regularly undated web nage or a blog.	

Home » administer

settings

General configuration options for your site. Set up the name of the site, e-mail address used in mail-outs, clean URL options, caching, etc.

General settings
Name:
AstBill
The name of this web site.
E-mail address:
noreply@astbill.com
A valid e-mail address for this website, used by the auto-mailer during registration, new password requests, notifications, etc.
Slogan:
The clogan of this website. Some themes display a clogan when available

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Home » administer USERS _ list add user configure Drupal allows users to register, login, logout, maintain user profiles, etc. No participant can use his own name to post content until he signs up for a user account. [more help...]

1 astbill active authenticated user 2006-04-20 13:26 edit 2 demo active authenticated user 2005-11-06 15:52 edit 3 demoadmin active authenticated user, Admin authenticated user, Admin authenticated user, Admin, Adoroar 2005-09-23 17:31 edit	IC	Username	Status	Roles	Last access	_	Operations
3 demoadmin active authenticated user, 2005-09-24 09:17 edit Admin authenticated user, 4 astbilltest active Admin, 2005-09-23 17:31 edit	1	astbill	active	authenticated user	2006-04-20 13:	26	edit
authenticated user, 4 astbilltest active Admin, 2005-09-23 17:31edit	2	demo					
4 astbilltest active Admin, 2005-09-23 17:31 edit	3	demoadmin	active	authenticated user, Admin	2005-09-24 09:	17	edit
	4	astbilltest	active	Admin,		31	edit

Home » user account astbill view edit Account information Username:* astbill Your full name or your preferred username: only letters, numbers and spaces are allowed. E-mail address:* noreply@astbill.com Insert a valid e-mail address. All e-mails from the system will be sent to this address. The e-mail address is not made public and will only be used if you wish to receive a new password or wish to receive certain news or notifications by e-mail. Password:* Enter your new password twice if you want to change your current password, or leave it blank if you are happy with your current password.

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- AstBill Admin
 - Asterisk
 - Call Data Record
 - Calling Cards
 - Create Account
 - Hardware
 - Payments
 - Price List
 - Provider Routes
 - Provider Trunks
 - Server Status
 - Settings
 - Tenants
 - View Logs
- AstBill Admin
 - <u> Asterisk</u>
 - Iax Users
 - Incoming Friends
 - Manager
 - Show Peers
 - Sip Users

Home » AstBill Admin » Asterisk

lax Users

View				
Hover over Ac	count to vie	w Accounts Pass	word	
<u>Accountcode</u>	Callerid	Context	Mailbox	<u>Type</u>
0207000000		:		
0207999998	A 70000-	incomming-numbers	70100	user
<u>70104</u>	Are <70200>		70100	friend
<u>70107</u>	Are < 70200>	default	70108	friend
<u>71303</u>	Are	default	71303	friend
<u>71415</u>		default	71415	friend
<u>71417</u>	demo	default	71417	friend
<u>71421</u>	Are IPKall	incomming-numbers	71421	friend
<u>71449</u>	demoadmin	default	71449	friend

Home » AstBill Admin » Asterisk

Incoming Friends



Manager

Manager

Click here to write configuration for accounts marked with STATIC:

This will overwrite the following files:

/etc/asterisk/sip_additional.conf /etc/asterisk/iax_additional.conf /etc/asterisk/voicemail_additional.conf

Write

Click here to Reload Asterisk:

Reload

Home » AstBill Admin » Asterisk

Show Peers

View

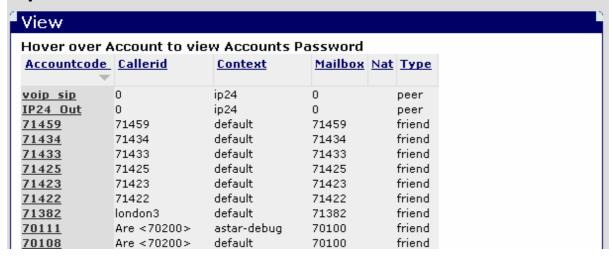
This is a list of the last clients(SIP and IAX2) that have connected to the Asterisk server.

It allows you to keep track of when each client last authenticated with Asterisk. You also get the IP and configuration information.

Accountcode	<u>Tech</u>	Changed	<u>Expires</u>	Name	Callerid	<u>IP</u>
70103	SIP	2005-09-23 17:39:03	2005-09-10 21:50:02	astbill	Smith <70200>	72.229.231.211:5060
70104	IAX	2005-09-23 17:39:25	2005-09-10 21:39:21	demo	Are <70200>	202.214.169.142:4569
70105	SIP	2005-09-23 17:38:25	2005-09-06 19:56:40	demoadmin	Dulce <70105>	89.174.234.20:62719
70107	IAX	2005-09-23	2005-09-01	astbill	Are <70200≽	89.174.234.20:61320

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Sip Users



Home » AstBill Admin

Call Data Record



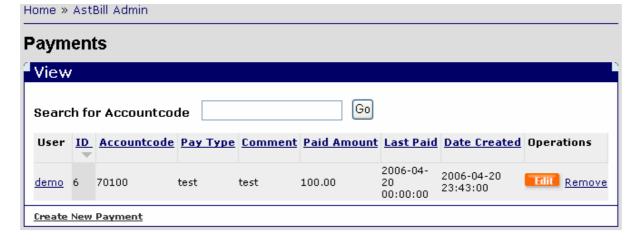
Home » AstBill Admin

Calling Cards



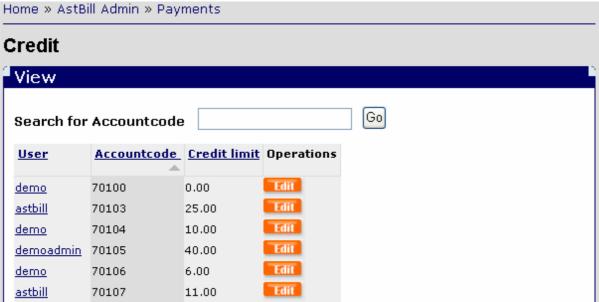


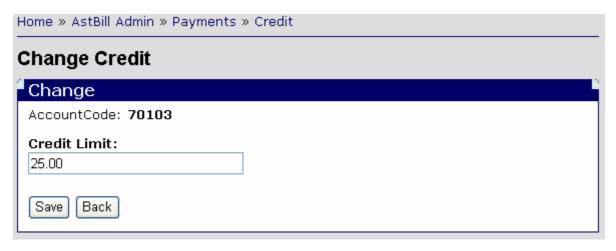
Change the number(s) you want to forward to senarated by &



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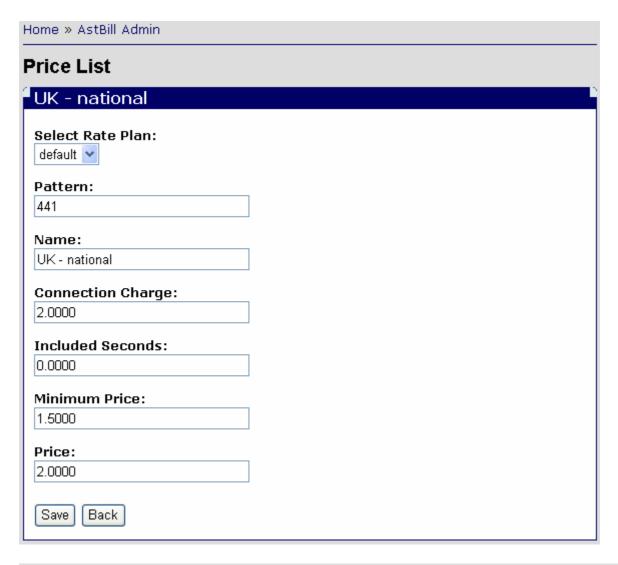


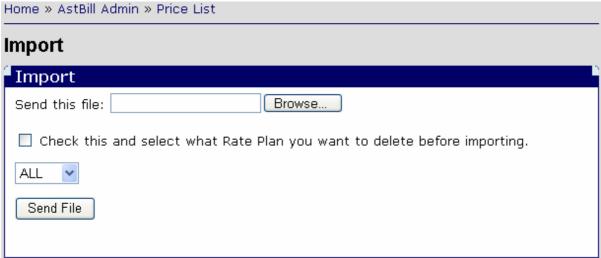
Home » AstBill Admin **Price List** United Kingdom Select Rate Plan: default 💌 Select Country: United Kingdom Go Add Change Prices Pattern Name Operations Price 441 UK - national UK Pence 2.00 Ettil Remove UK - national UK Pence 2.00 Remove 442 UK Pence 0.00 EXIII Remove 44500 UK - freephone

44551100 UK - 0551 VOIP

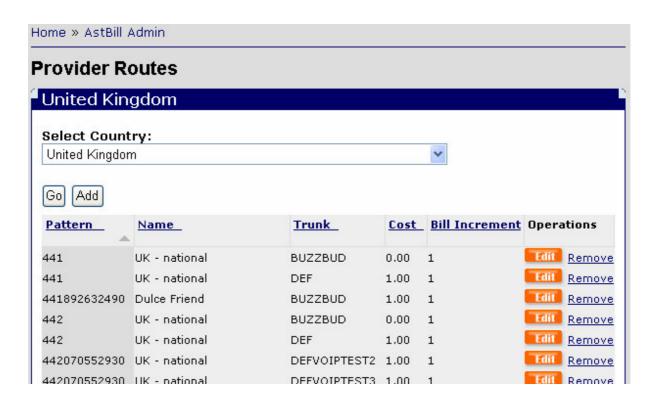
UK Pence 7.50 Till Remove

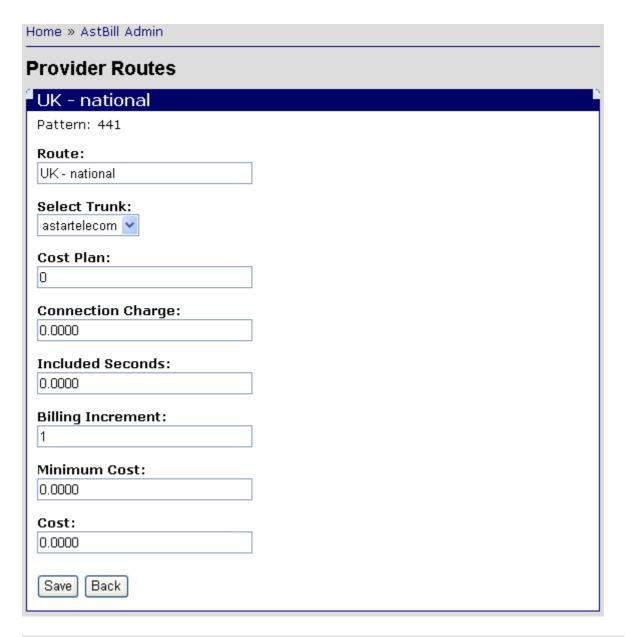
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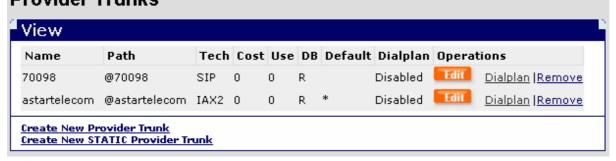
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Provider Trunks



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Provider Trunk Details

You are Editing a Provider Trunk
Trunk Type: SIP
Trunk Name: Enter the Trunk Name. Every Trunk has to be given a unique name. Example: astartelecom: 70098
Provider Username:
70098
Provider Password:
70098
Provider Host:
sip.astartelecom.com
Description:
Test SIP account for Astar Telecom
Vat/Sales Tax: If you want to add VAT/Sales Tax to the Vendors prices before you calculate our cost. This field will make astcdr.ourcost include VAT/Sales Tax. This is usefull if you are not able to get your VAT/Sales Tax back: 0.00
Vat2/Sales Tax2: If you don't want astcdr.ourcost to include the VAT/Sales Tax2 but want to store the rate for use on reports. Update the vendors VAT/Sales Tax2 rate. This rate is not used during calculations of astcdr.ourcost: 0.00
Current Usage Count is: 0
Maximum channels: Controls the maximum number of channels (simultaneous calls) that can be used on this trunk, including both incoming and outgoing calls. Enter 9999 to specify no maximum:
Relative Cost/Metric: Specifies the metric, ie. cost for the destination. This gives higher priority to lower cost routes:
Remove Prefix: The outbound dialing removeprefix is used to remove digits from the dialing string to all outbound calls placed on this trunk. Most users should leave this option 0.:
US Style Prefix 011: The outbound US Style dialing prefix is used to prefix a dialing string to None US outbound calls placed on this trunk. If this option is choosen 011 will prefix all numbers not starting with 1. This is used with many US providers. The AddPrefix above will be appended before this.

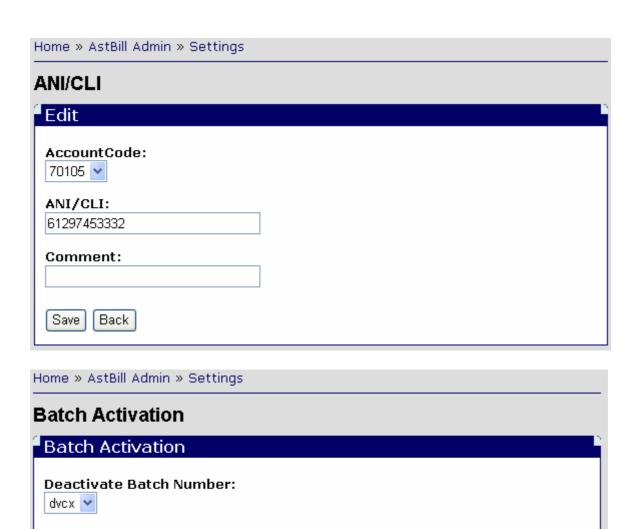
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AddPrefix The outbound dialing prefix is used to prefix a dialing string to all outbound calls placed on this trunk. For example, if this trunk is behind another PBX or is a Centrex line, then you would put 9 here to access an
outbound line. Most users should leave this option blank.:
Register String:
Register String Many VoIP providers require your system to REGISTER with theirs. Enter the registration line
here. example: username:password@sip.astartelecom.com:
Click to make default:
Only one Provider Trunk can be used as default
Change Back
Advanced Provider Trunk Settings

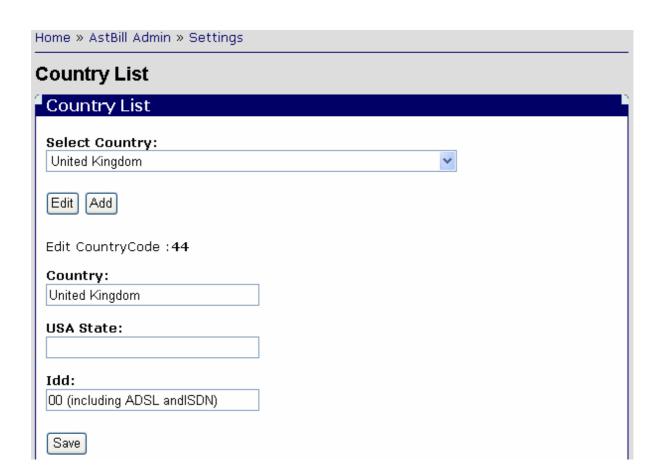
- ⁷ Settings
 - ANI/CLI
 - Batch Activation
 - Country List
 - Generate Account PIN's
 - Rate Plans
 - System Config
- Tenants
- View Logs



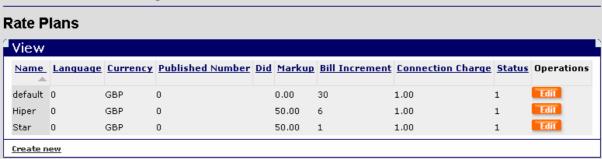
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Deactivate



Home » AstBill Admin » Settings **Generate Account PIN's** Generate Account Pin's **Batch Number:** From Account Number: Number of accounts: Random Accounts Digits 4 Prefix Credit Amount: 10 **Expiration Days:** 90 **Expiration Date:** 21 🕶 May 2007 🕶 From serial number: Password.: Same as ID Random Fixed Value Generate Home » AstBill Admin » Settings **Rate Plans**



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Home » AstBill Admin » Settings » Rate Plans **Rate Plans** Edit Name: default Select Currency: GBP 💌 Language: **Published Number:** Did: Markup: 0.00 Billing Increment: Connection Charge: 1.00 Status: Save Back

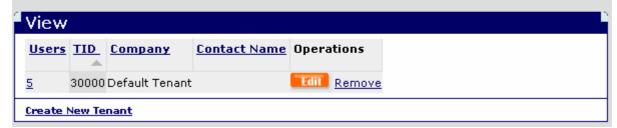
System Config

Value	Comment
1	If 1 We will use a Drop Down box to show Accountcode in Payment screen and other Screens. If 0 a text entry box will be used.
5	This is the length of the automatically created account number
7	This is the first digit of the automatically created account number. Automaticly created account number must be numberic
6	The Password Length to use when creating new accounts
4	The Voicemail PIN/Password Length to use when creating new accounts
72000	If there is no account defined in the 7 range. This will be the first account created
/home/astbill/logs/	This is the Path to log files created by agi-bin scripts
2000	This is the numbers of chars visible from the Asterisk Messages Log File
60	This is the maximum alloved minutes for a call. If your call last longer than this you will be disconnected by the System.
/topup/	The URL used to topup AstBill VOIP Software
The default CountryPrefix to use when creating new accounts:	
44	
The default Rate Plan to use when creating new accounts:	
default	
The default Channel type to use when creating new accounts (SIP or IAX):	

Home » AstBill Admin

Save Settings

Tenants



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