



2.2.X

2.0.X

VICIdial® Multi-Server (Cluster) Manual

Clustering for VICIdial v2.2.X and 2.0.X.
Compiled by PoundTeam Incorporated

Instructions for creating a Multiple-Server Vicidial Cluster using Vicibox or Vicibox Redux pre-installed servers. Including Specific tutorial to begin with 5 Vicibox servers and cluster them as follows: One DB, One Web, Two Dialers and One Archive server. Allows quick/basic clustering of VICIdial servers to operate as a single Multi-Server instance. Published under the AGPLv2.

VICIdial® is a registered trademark of Matt Florell

(The original creator and primary developer of VICIdial)

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Multi-Server Manual (Cluster)

for

VICIdial®

release 2.0.X and 2.2.X

Compiled by Poundteam Incorporated

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Compilation Notes and Sources

This Manual is a compilation of information from many sources. While I have tried to note the source of as much information as possible, it should be assumed that I will miss something in this regard. If anyone finds that I have missed a source, please inform me so that I can properly notate this manual.

This Manual is intended as a Liquid/Living/Evolving guide. I do not object in any way to its use by anyone, as long as the licensing is not violated. Please refer to the [AGPLv2](http://www.affero.org/agpl2.html) available at <http://www.affero.org/agpl2.html>.

The information contained in this manual is primarily extracted from the source code of VICIdial itself. None of it is extracted from the VICIdial manual. A major portion is also extracted from CodeHaxOr's "Vicidial Multi Server Ubuntu" which was published on the EFLO "Vicidial Howtos" and also as a PDF available for download free of charge. Some of this data is compiled from emails and PMs from The Vicidial Group (Matt and his entire crew), for which a "source" would just be "email from Matt".

Sources for information will be listed inline if it is possible to identify a specific source of specific information.

Purpose

The Client who solicited this manual had seen all the other manuals and wanted quite simply to have a single source to which to refer to begin with pre-installed VICIdial servers and end with a single cluster.

This manual, therefore is not meant (yet) as a "Last word" or "Ultimate Resource" for all things "Multi-Server". However, it is meant as a Good Beginning for a Basic multi-server VICIdial cluster.

Licensing

This document is published under the [AGPLv2](http://www.affero.org/agpl2.html) available at <http://www.affero.org/agpl2.html>.

Portions are extracted from other sources which are also published under the AGPLv2 or with no mention of publishing restrictions whatever.

Warranty

This document, as with most (perhaps all) open source software and documentation comes with No Warranty.

Pre-Requisites

Hardware

Minimum: At least two computers Pentium III with 512M RAM and 10G hard drives and Network Interface Cards.

Recommended: At least two Core2Duo (3.0 Ghz) or Core2Quad (2.4 Ghz) with 2G RAM and 120G hard drives and Network Interface Cards.

Network Connectivity (DSL, Broadband, T1, etc) sufficient to handle the requirements of your servers.

Software

Pre-Installed (and preferably tested and working in both Auto-Dial and Manual Dial mode) Vicibox (Ubuntu), Vicibox Redux (OpenSUSE), or VicidialNOW or another method of installing VICIdial 2.0.X or 2.2.X.

Knowledge

You should have a basic understanding of each of the following before proceeding (or be prepared to learn as you need to while using the manual). I will assume that I do not need to instruct you specifically in the following:

- SSH (PuTTY or similar) remote login to all servers
- Carrier installation in VICIdial
- General command line execution in linux on these servers
- Basic text file editing (via Nano, vi, vim, etc.) in linux.
- Specifically the ability to locate and edit “astguiclient.conf” (nano /etc/astguiclient.conf)
- Basic Navigation of VICIdial (Campaigns, Lists, Admin, Phones, Carriers, etc) as Administrator with all rights for edit/view.
- MySQL credential entry
- Time Sync ability (NTP), although one sample will be given
- Basic File Transfer Protocol (FTP) Service Installation and configuration

Network Setup

It is necessary that the servers be assigned to network addresses that allow local fast access to each other. They should all be on the same local network (even if the network is a public one, the speed of the connection between the servers must be fast, it is not recommended that there be any routers between them).

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Preparation and Planning

Choose your server types and quantities

MySQL – Database Server

A server that is being used only for MySQL does not need to have Vicidial installed on it. Any Standard MySQL server will suffice. Obviously, though, the more powerful the better as this database server will be responsible for responding in a timely manner to data services for all of your other cluster servers. It should have at least MySQL v 5.0.51a. For your first cluster, it is simplest, however, to use a Standard Vicibox server for this one as well. It is recommended that this server be as powerful or better than the other servers in the system to maintain high availability of data to the entire cluster.

Apache – Web Server

Should be a full Vicibox installation. It is recommended that this server be the most powerful server in the system to maintain high availability of web services to all your users. Note: It is not required to have a dedicated web server in a cluster. Combo (Web/Asterisk) servers can perform as both Web and Dialer for agents web browsers and phone registration/meeting rooms.

Dialer – Asterisk Server

Should be a full Vicibox installation. These are the work boxes and can be of almost any power level from Pentium III through the latest upon which Vicibox will successfully install. These do not need to be the most powerful boxes in the cluster.

Combo – Web/Asterisk or Web/Database

Must be a full Vicibox installation. These should be the most powerful boxes in the cluster if there are also servers that are only dialers. Only one server may be “Database”. It may be a combo unit, but there will be ONLY ONE database serving the cluster upon completion of the cluster. Many configurations are supported beyond that single restriction.

Full – Asterisk/Web/Database

It is possible to have a “Full” server supply the Database server for the Cluster. It is also possible to have a server that is ONLY MySQL, and it is possible to have MySQL share with either the Web server or one of the Dialers. As I said, many configurations are possible. It is up to you to decide which you will use. As a hint: I like to suggest (at least for your first cluster) to have a single Full Server and all the other servers operate as combo Web/Asterisk servers until you decide what your final configuration will be. Then you can turn off services you do not require on the remaining servers. In this case, you ordinarily keep database and web services on the most powerful server(s).

FTP – Archive / Storage Server

Any server can also be an FTP server. It is generally accepted, however, that NONE of the above servers should also serve as the FTP server for the cluster. One reason: the data stored on the FTP server can be accessed as much as necessary with absolutely no impact on the Server Cluster. Another reason: If this server is operating as a backup server, it should not be “infected” in case of a system-wide failure.

Basic Installation

It should be noted that a complete Vicidial installation is expected on each server. For a basic installation to be considered complete, the Vicidial server in question should have been built (from .iso or from scratch) with full Vicidial functionality and the following should be tested:

- It should be able to dial with a carrier in both auto-dial and manual dial mode
- It should function in both IAX2 and SIP, both with sound in both directions
- It should be capable of all codecs you will be using in your enterprise

The exception to this expectation:

Database Server

The MySQL server can be a standard MySQL server with high availability (do not “Share” a MySQL service or attempt to use a “Virtual” or “hosted” MySQL solution). A MySQL Cluster for those with serious MySQL experience is certainly acceptable. If this is your first “Linux” experience, it is generally best to simply use a Vicibox .iso installation for this as well (but as I said, not required).

Archive Server

The FTP Server need not be anything special at all. In fact, it can be a Windows or Mac, as long as it adheres to standard FTP Protocols. It is not within the scope of this document to assist in installation or configuration of the FTP Service, but we will show (in the “Optimization—Designation of Server” section) where to configure Vicidial to USE the FTP Service.

Assumptions – Passwords and Usernames

For the purpose of simplicity, we will assume that the reader is capable of replacing passwords/usernames , etc., in this manual with their own private information. For this manual we will assume:

- Cron username: cron
- Cron password: 1234
- MySQL username: root
- MySQL root password: password
- IP Addresses: MySQL server: 192.168.10.10, all other servers on the same subnet.

Services across all servers

Verify network connectivity and MySQL accessibility for each server

Starting with the server you have designated as the MySQL server, we must log in as the “cron” user using a mysql client on each of the servers in the cluster.

From the MySQL Database Server

```
# mysql -u cron -p123
```

This should result in a “Welcome” to the MySQL system, and a “MySQL” prompt ending in >. Type in “exit” to continue.

If it does not, you must find your MySQL cron user and password information. Stop here, and get that information.

From each server OTHER than the MySQL Database Server

```
# mysql -h 192.168.10.10 -u cron -p1234
```

Replace 192.168.10.10 with the IP address of the MySQL Database Server. This should result in a “Welcome” to the MySQL system, and a “MySQL” prompt ending in >. Type in “exit” to continue.

If it does not, you must find your MySQL cron user and password information and/or change your MySQL credentials to allow “cron” to log in from the IP address of this server and/or this subnet. Stop here, and get that information and/or set that up.

Perform this task from each of the servers in the cluster to be sure they have MySQL connectivity.

Time Sync across entire system

Time synchronization is essential across a VICIdial cluster. By default, NTP (Network Time Protocol Daemon) service is installed by Vicibox’s installer. But this will cause each server to reach out to the internet and synchronize to the world, not necessarily to each other. We must change this behavior to allow only one server to sync to the outside world and all other servers to sync to that one. This will allow time to remain synchronized tightly within the VICIdial cluster which will reduce time sync errors and improve the reliability of the cluster and the quality of the calls.

Server to Server – Ubuntu Sample

No changes are necessary on the server chosen as the cluster’s NTP server. It is already set up as a time server if installed from Vicibox. But each of the other servers should be told to sync to that one server. We will assume you have chosen the MySQL server as the Cluster NTP server.

On each of the other servers in the network begin by testing the present ntp sync status:

```
ntpq -p
```

If you have several entries and at least one of them has an asterisk (*) on the left margin, ntp is syncing.

Then edit /etc/default/ntpdate:

```
# nano /etc/default/ntpdate
```

Set: NTPDATE_USE_NTP_CONF=yes

Then edit /etc/ntp.conf:

```
# nano /etc/ntp.conf
```

Comment out all the “server” entries.

Replace them with this (replace the IP with your ntp server’s IP):

```
server 192.168.10.10 iburst
```

The “iburst” entry tells the system to sync quickly at inception.

Then restart the ntp service:

```
/etc/init.d/ntp restart
```

Then test the sync again to see if we have had the desired effect

```
ntpq -p
```

Now you should have only a single entry (it may take a couple minutes to acquire the “*” meaning it is syncing, even with the iburst notation).

Workstation to Server – Windows XP Pro Sample

Yes, it is important to also synchronize each workstation to the cluster to avoid time sync errors and improve call quality. You can sync each station to any of the servers in the cluster, since they will now all be sync’d to the same master ntp server and should all be in agreement about the time.

Double click on the “time” in the bottom right corner of your XP Toolbar (or wherever you keep your clock or Date and Time properties control panel).

Choose the “Internet Time” tab.

Enter the IP address of one of the servers in the “server” box.

Press “Update Now”. Wait for success. If there is an error reading, be sure to read it. You may have to open a port (if your ntp server is on the other side of a firewall from your workstation) or you may have to set your clock to within 5 minutes of the ntp server time for the workstation to allow synchronization.

Preparations Complete

Cluster Instructions

Server Configuration Changes

On the Database Server

```
# crontab -e
```

Change the Database Server to reboot 4 or 5 minutes BEFORE all the other servers so it is “up and running” when the other servers begin to come back online. Vicidial cluster servers have been known to “hang” if they do not have access to their database server upon boot.

Change:

```
45 6 * * * /sbin/reboot
```

To:

```
41 6 * * * /sbin/reboot
```

On all servers

```
# nano +18 /etc/astguiclient.conf
```

Changes:

- VARactive_keepalives => 123468 (on all but one server)
- VARactive_keepalives => 12345678 (on one server only)
- VARDB_server => localhost to: VARDB_server => 192.168.10.10
(DO NOT MAKE THIS CHANGE ON THE DATABASE SERVER)

Replacing 192.168.10.10 with your database server's IP. *Do not change this on the database server, it should be left "localhost".*

```
# reboot
```

Reboot each server to enable the new database link and activate the new “keepalive” script settings.

Something to remember

You have just “deactivated” the local MySQL server on each server other than the Database server. This means that any settings, entries, etc (like carriers, lists, etc) in those servers are no longer in use. All the servers now look to the Database server for their data and have forgotten everything they knew before then.

Since VICIdial rebuilds its configuration files from the database, the next time the configuration files are rewritten (which we'll do shortly), all prior entries on each of the servers will be deleted. So phones that WERE registered will cease to work. Carriers will disappear. Admin logons are gone.

Just a reminder that the database on the Database Server is now in charge, all other data and all items controlled by that data have just been forgotten.

Adding new servers to the Cluster in the VICIdial GUI

Log in as the administrator to the VICIdial administration site.

Add A New Server for each server

Do not add a new server for the Database Server, it is already there.

1. Vicidial -> Admin -> Servers -> Add A New Server
2. Server ID: Name This Server (Must be a unique name, keep it simple)
3. Server Description: Use this to help you identify the server easily in field selection in other areas
4. Server IP Address: Very Important, must be exact using IPv4 xxx.xxx.xxx.xxx notation.
5. Active: "Y"
6. Asterisk Version: The version of asterisk actually installed in the server you are adding
7. Submit -> Then continue modifying the new server as follows:
8. Choose your "Max VICIdial trunks" and "Max Calls per Second" settings or leave these defaults.
9. VICIDIAL Balance Dialing: "Y"
10. Telnet Host: Very Important, must be exact using IPv4 xxx.xxx.xxx.xxx notation.
11. Manager User and Secret: Place your cron user and password for this server here.
12. Active Asterisk Server: "Y" (change to "N" if this machine will be ONLY MySQL and/or Web)
13. Submit
14. IF you rebooted the slave server earlier, this will cause the configuration files on it to be re-written (within 60 seconds) and an asterisk reload will occur. This server is now clustered.

Repeat this process until all servers are listed under "Show Servers".

Add Conferences for each server

Do not add conferences for the Database Server, they are already there.

NOTE: THIS IS TO BE DONE ON THE DATABASE SERVER.

```
# mysql -p
```

Enter your mysql root password to start the mysql client

```
> use asterisk;  
> insert into `conferences` ( conf_exten, server_ip, extension ) select conf_exten,  
'192.168.10.XX', extension from conferences where server_ip='192.168.10.10' limit 49
```

Replace 192.168.10.XX with the ip address of the server you are adding. Replace 192.168.10.10 with the IP address of the Database server

Repeat this query with the IP address of each of the new servers.

```
> insert into `vicidial_conferences` ( conf_exten, server_ip, extension, leave_3way ) select  
conf_exten, '192.168.10.XX', extension, leave_3way from vicidial_conferences where  
server_ip='192.168.10.10' limit 249
```

Replace 192.168.10.XX with the ip address of the server you are adding. Replace 192.168.10.10 with the IP address of the Database server

Repeat this query with the IP address of each of the new servers.

Note: The database entries are not the only piece of this puzzle. There also must be actual conferences and vicidial_conferences in the static configuration files. IF you use the method above, the newly created database entries will match the existing static configuration file entries for each of the server that should already be there. The conferences and vicidial_conferences on all the servers will be the same, which is the normal setup. If you try to number them differently, do not forget to change them in the static configuration files as well as in the MySQL tables.

Move phones to the new servers

The standard installations ordinarily have 50 SIP phones available under “Admin->Phones”. If not, there is a script in the /usr/src/astguiclient/extras folder named “sip-iax_phones.sql”. This script can be executed from the linux command line as follows to add 50 more sip/iax phones:

```
# mysql asterisk -p < /usr/src/astguiclient/extras/sip-iax_phones.sql
```

Check the path to the extras folder on your system and correct as necessary.

Note that each phone must have the correct values for DBX/DBY servers/users/password as well as the Manager Login and Secret and the correct Server IP for an active server in the cluster.

To change a phone from the Database Server to one of the new servers, you must change the “Server IP” under Admin->Phones->(modify) and you must then alter the values in the phone itself to use this new IP (phones don’t guess very well, you have to tell them).

Do not duplicate phones across servers, ie: do not have cc100 on two servers, but only on one server.

Duplicate Carriers on new server

Be careful not to duplicate registrations, registration must be unique to each server or it will ruin the "path" of inbound DIDs .

Yes, this means that a simple method for duplicating carriers is to duplicate a prior carrier but leave the registration string empty and obviously use the IP address of the new server.

When deciding whether to use the existing dial plan, remember that each Campaign has only one “Dial Prefix” setting. If you have several agents on a campaign and some of those agents are logged in to this server, and some are logged into another server, the Dial Prefix will be the same. So the dial prefixes should succeed on both servers (even if they go through different providers, the dial plan for any campaign should exist on all servers).

Sound Setup

Admin->System Settings Changes

(Source: Email from Matt Florell)

Admin → System Settings

- “Central Sound Control” = 1
- “Sounds web server” = 192.168.10.XX
- “Active Voicemail Server” = 192.168.10.YY
- “Allow Custom Dialplan Entries” = 1

Admin → Audio Store (NOTICE: new web directory created) (you don't need to do anything else)

Note: Replace 192.168.10.XX with your Web server IP. Replace 192.168.10.YY with the Dialer you want to use as your Voicemail Server

Run script on mail voicemail server

```
/usr/share/astguiclient/ADMIN_audio_store_sync.pl --upload --debug
```

Cleanup

1. Admin->Servers->[Each Server, one at a time]->Rebuild conf files = ‘Y’
2. Reboot all servers (MySQL server *first* and early enough to be “up” before the others.)
3. It is important to note at this point that this entire system should be able to survive a reboot and should be rebooted every night.

Validation of Functionality

Screens

```
# screen -list
root@pt42:~# screen -list
There are screens on:
    5009.ASTlisten   (Detached)
    5006.ASTsend     (Detached)
    5003.ASTupdate   (Detached)
    4959.asterisk    (Detached)
    4952.astshell    (Detached)
    4911.ASTfastlog  (Detached)
    4909.ASTVDadapt  (Detached)
    4907.ASTVDremote (Detached)
    4905.ASTVDauto   (Detached)
9 Sockets in /var/run/screen/S-root.
```

If there are too few screens running in detached mode, you may have a problem. Check to see that Asterisk is running. Check `astguiclient.conf` settings. Check startup logs and find out why non-running scripts are missing.

The specific scripts that are running were determined in `astguiclient.conf`, script 5 and 7 should only be running on one machine. Others may be turned off based on your specific configuration and what software is active on each machine. (See [Optimizing](#).)

Asterisk

```
# asterisk -R
root@pt42:~# asterisk -R
Asterisk 1.2.30.4, Copyright (C) 1999 - 2007 Digium, Inc. and others.
Created by Mark Spencer <markster@digium.com>
Asterisk comes with ABSOLUTELY NO WARRANTY; type 'show warranty' for details.
This is free software, with components licensed under the GNU General Public
License version 2 and other licenses; you are welcome to redistribute it under
certain conditions. Type 'show license' for details.
=====
Connected to Asterisk 1.2.30.4 currently running on pt42 (pid = 4967)
Verbosity is at least 21
```

Asterisk should be running on all machines being used as Dialers. If not you should attempt to start asterisk with “`asterisk -vvvc`” to attempt to determine the cause.

Optimization — Designation of Servers

Version Specific (Scripts and other information)

/usr/src/astguiclient/docs/LOAD_BALANCING.txt will contain specific information regarding which scripts should/must be run on which servers. Note that most of the IAX2 interactivity discussed will be automatically generated by the VICIdial configuration file generation system.

Which services can be turned off on which servers?

If you have chosen to have “dedicated” servers for these tasks, these are the services which can be turned off on each of them:

Database Server

- asterisk service
- apache service

Web Server

- mysql service
- asterisk service

Dialer

- mysql service
- apache service

What changes to the “Admin->Server” entry should be made for each server?

(Source: Email from Matt)

change db/web servers entry to inactive asterisk and 0 max ViciDial trunks,(do not delete the entry)

Which Scripts on Which Servers can be turned off?

Source: <http://www.vicidial.org/VICIDIALforum/viewtopic.php?t=11925> (Matt Florell)

You can put all of these only on your web/db server:

```
### VICIDIAL agent time log weekly summary report generation
2 0 * * 0 /usr/share/astguiclient/AST_agent_week.pl
### fix the vicidial_agent_log once every hour and the full day run at night
33 * * * * /usr/share/astguiclient/AST_cleanup_agent_log.pl
```

```
50 0 * * * /usr/share/astguiclient/AST_cleanup_agent_log.pl --last-24hours
### updater for VICIDIAL hopper
* * * * * /usr/share/astguiclient/AST_VDhopper.pl -q
### adjust the GMT offset for the leads in the vicidial_list table
1 1,7 * * * /usr/share/astguiclient/ADMIN_adjust_GMTnow_on_leads.pl --debug --postal-code-gmt
```

Which keepalives are the minimum needed for the servers?

(Answer: mflorell)

These are required to be run on the Asterisk server (No Web/DB):

```
# 1 - AST_update
# 2 - AST_send_listen
# 3 - AST_VDauto_dial
* 4 - AST_VDremote_agents
# 6 - FastAGI_log
# 8 - ip_relay (used for blind agent monitoring)
#9 - Timeclock auto logout
*Number 4 is not required if you are not using Remote Agents.
*Number 9 is not required if you do not use the time clock
```

ONE Asterisk server must also have these (but only one)

```
#5 - AST_VDadapt (If multi-server system, this must only be on one server)
#7 - AST_VDauto_dial_FILL (only for multi-server, this must only be on one server)
```

Recommended setting for a dedicated DB server (No dialer):

(Source: email from Matt Florell)

Change VARactive_keepalives value to "X"

How do I set up my Archive (FTP) Server(s)?

Please note: There are TWO archive server types. One uses the "VARFTP" configuration settings, and one uses the "VARREPORT" settings. The reason for this difference (FTP server vs Report server) is to allow for the easy separation of Recordings from Backups and other non-audio data. They CAN be the same server, if you put in the same settings, but VICIdial has made it easy to keep them separate.

Audio FTP Server (For Recordings)

```
nano /etc/astguiclient.conf
```

You will need to have (and enter) the following information:

```
# FTP recording archive connection information
VARFTP_host => 10.0.0.4
```

```
VARFTP_user => cron
VARFTP_pass => test
VARFTP_port => 21
VARFTP_dir => RECORDINGS
VARHTTP_path => http://10.0.0.4
```

This information is used in the following scripts (each script has a “help” option for how to use it):

- ADMIN_update_server_ip.pl
- AST_CRON_audio_1_move_mix.pl
- AST_CRON_audio_2_compress.pl
- AST_CRON_audio_3_ftp.pl

Report FTP Server (NOT for Recordings)

You will need to have (and enter) the following information:

```
# REPORT server connection information
VARREPORT_host => 10.0.0.4
VARREPORT_user => cron
VARREPORT_pass => test
VARREPORT_port => 21
VARREPORT_dir => REPORTS
```

This information is used in the following scripts (each script has a “help” option for how to use it):

- ADMIN_backup.pl
- AST_email_web_report.pl
- AST_sourceID_summary_export.pl
- AST_VDlist_summary_export.pl
- AST_VDsales_export.pl
- VICIDIAL_IN_new_leads_file.pl
- Vtiger_IN_new_accounts_file.pl
- Vtiger_OUT_sync2VICIDIAL_file.pl

Appendix

Troubleshooting Tools

OK, I admit it, not all of these are “specific” to Multi-Server, but I have found that these can be very handy. This is NOT organized yet, they are just “here” for those who want to use them.

Backup Script! Easy and Free! Use it!!!!

Run the backup script every night, preferably before midnight. If you have any “stability” issues with your server, quickly run another backup of JUST your data immediately. Since the backups are numbered by Day Of The Week, you will NOT be overwriting your latest backup, and if your backup “crashes” you will not have just wiped out your most recent backup by trying to do an “on-the-fly” backup. (Assuming you backed up before midnight).

On the command line:

```
perl /usr/share/astguiclient/ADMIN_backup.pl
```

If you want to know what options are available, add a space and “--help” to that and it will show you.

This can also easily be added to the daily cron jobs:

```
crontab -e
```

Add to the Bottom:

```
### Daily Backup
47 23 * * * /usr/share/astguiclient/ADMIN_backup.pl
```

Will back up at 11:47PM nightly (remember to add your options if you want them, none are required)

This backup script will create a “set” of 7 backups in /var/log/astguiclient/archive and overwrite each of the 7 every week, so you will always have one full week of backups on hand. It will “optionally” push the backups to your reporting server if your credentials are in place (in astguiclient.conf) and if you set the option on the command line.

Debugging Scripts

Each of the “Keepalive” scripts and / or “crontab” scripts has a debugging mode. Each generally has a section to tell you what that mode is and how to activate it. Generally adding “--debugX” to the command line that starts the script will enable debugging. At that point, you have to stop and restart the script to activate the debugging. Rebooting will work, but in many cases you can kill the process and it will restart automatically (for the Keepalives). Do NOT forget and leave a script in debug mode!

Source: <http://www.vicidial.org/VICIDIALforum/viewtopic.php?p=48533#48533>

NTP

```
ntpq -p  
ntpdate -d xxx.xxx.xxx.xxx
```

Credentials Sample Script

- NOTE: change {CRONPASS} to an actual password

```
GRANT SELECT,INSERT,UPDATE,DELETE,LOCK TABLES on asterisk.* TO cron@'%'  
    IDENTIFIED BY '{CRONPASS}';  
GRANT SELECT,INSERT,UPDATE,DELETE,LOCK TABLES on asterisk.* TO cron@localhost  
    IDENTIFIED BY '{CRONPASS}';  
GRANT RELOAD ON *.* TO cron@'%';  
GRANT RELOAD ON *.* TO cron@localhost;  
flush privileges;  
SET GLOBAL connect_timeout=60;  
exit
```

Places To Look for mistakes

Each asgtuiclient.conf

1. Make sure each has the correct VARserver_ip (itself!)
2. Make sure each has the correct VARDB_server (Master) and supporting database/user/pass/port
3. Make sure each has 123468 (no 5 or 7) for VARactive_keepalives (except ONE which has 5 & 7)

Have you rebooted?

If you have made ANY changes in any conf files, reboot.

If you don't remember ... reboot anyway to be safe.

Have you created everything necessary in MySQL for ALL the dialers?

Non-MySQL servers WILL need at least one SIP phone, all conferences, all vicidial_conferences, Server IP, telnet IP.

Reverify the astguiclient.conf files and the server defs

1. Also remember that these servers register IAX to one another, so a bad IP will cause IAX to refuse to register
2. Also remember that the master server writes configuration files and rebuilds conf files on the slaves, so issue a rewrite command (rebuild conf files) on the master when finished to rewrite the files and WATCH the CLIs of all to be sure they all write.

A quick/easy way to do this is to create a Carrier and at least one SIP phone (required anyway) should be moved to each slave server.

Copy database from prior server -- Sample

```
mysqldump asterisk -p > outboundvicidial.sql
scp -P 22 outboundvicidial.sql user@xxx.xxx.xxx.xxx:inboundvicidial.sql
```

Multi-Server Add-ons

Manager Dial into a Meetme Room on another Server

Matt, thank you for this one (this is for multi-server):

Since there are already IAX trunks between all servers just add two digits to the number you dial to denote the server for monitoring extents in the dialplan:

```
; monitoring host server (for consistency)
exten => _0168600XXX,1,Goto(default,${EXTEN:2},1)
; remote load balanced servers
exten => _0268600XXX,1,Dial(${TRUNKIAX2}/${EXTEN:2},55,o)
exten => _0368600XXX,1,Dial(${TRUNKIAX3}/${EXTEN:2},55,o)
```

That's how we do it anyway.

Changing IP Addresses -- Run IP Change Script

Run script on all the other servers BEFORE the MySQL

1. On each NonMySQL, run the IP change script (Record the IPs of each as you go)
2. On the MySQL, run the IP change script for each of the other servers
 1. Will require manual entry of the IPs (You did record them in step 1?)!
3. THEN run the IP Change Script for the MySQL on the MySQL (Last)

Load Balancing

/usr/src/astguiclient/docs/LOAD_BALANCING.txt

Available from The Vicidial Group within each installation's source code, specific to the version you have installed. This is a VERY HIGHLY RECOMMENDED file to read.

Verify Rebuild Configuration Files

When the "Admin->Servers->[ServerName]->Rebuild conf files"='Y' is set:

- Verify that all configuration files are being rebuilt (check sip-vicidial.conf for a phone that you move from server to server in Admin->Phones)
- Verify that Asterisk is being reloaded (view the asterisk CLI with verbose at "4" or above and watch for the reload)

Note: Rebuild/reload occurs “on the minute” in Vicidial after a suitable change is made in the configuration (such as moving a phone onto or off of a server).