ViciDial montagevorschriften für OpenSuSE v.11.0

Pre-Requisites and Foreword

Some basic computer skill and knowledge is assumed throughout this document. For this reason we do not cover topics such as basic networking, CD/DVD burning, partitioning scheme design, or other more fundamental topics. If you would like to know more about any of the particular steps in this document we suggest you spend some time with either google or the official OpenSuSE installation document to really explore all the possible configuration scenarios.

For all the servers we recommend the 32-bit version. If you plan to have more then 150 concurrent agents in your ViciDial set-up then we recommend you install the 64-bit version on the Database server.

DO NOT SKIP ANY STEPS! THINGS WILL NOT WORK IF YOU DO!

For the purposes of this document we have used the following Hardware:
- Dual-Core 2.0ghz CPU
- 80-GB SATA drive
- 1-GB RAM
- OpenSuSE v.11.0 32-bit Network Installation CD (Full CD or DVD suggested for slow bandwidth connections)
- Internet Connection (Required!)

OpenSuSE Pre-Installation

1. Download OpenSuSE from http://software.opensuse.org/; Network CD's may take a long time to install as the various portions of the operating system need to download
2. Burn CD/DVD and boot from disk
3. Select "Installation" from the CD/DVD Boot Menu
4. Select your Language and Keyboard settings and agree to the license terms then click the Next button
5. Select "New Installation" and click the Next button
6. Select your time zone settings, make sure the correct time (within 5 minutes) is displayed, and click the Next button
7. For the Desktop Selection first select "Other" and then "Minimal Server Installation (Text Mode" as the sub selection then click the Next button
8. Click on the "Create Partition Setup" button
9. Select "Custom Partitioning" and click the Next button
10. Delete any pre-existing partitions listed by clicking a partition then clicking the Delete button; You may optionally wipe out all drives by clicking the Expert button and then clicking on "Delete Partition Table and Disk Label" from the drop-down menu
11. Choose the partitioning scheme you want to use; For the purposes of this document we will create a root partition and a 4-gig swap partition; All remaining space except for the 4-gig swap

will be used by the root partition

12. Click on the disk to partition and then click on the Create button; For the purposes of this document we have used a 80GB SATA Drive that shows up with a max size of 74.5GB

13. Select "Primary" as the partition type and click "OK"

14. Under the "Format" area select the Format option and in the File System drop down box select ReiserFS

15. Click on the Fstab button and select the "No Access Time" option and click "OK"

16. Under the Size area set the start cylinder at 0 and the ending cylinder to "+70.5GB" which is 4GB smaller then the max allowable drive size as listed in the main partition window

17. Select "/" or root as the Mount Point

18. Select the "OK" button

19. Click on the disk again to partition the remaining space and then click on the Create button

20. Select "Primary" as the partition type and click "OK"

21. Under format select the "Swap" file system type from the drop-down box

22. Select the "OK" button

23. You should now see the drive listed in the Expert Partition window along with two partitions, one mounted as root "/" the other mounted as swap; Verify the partitioning is set-up the way you want it

24. Click the Next button

25. The "Suggested Partitioning" window will show the actions to be taken to the file system; Click the Next button

26. If you want to create a non privileged user for access to the system you may define it in the "Create New User" screen; Click the Next button when done

27. Click the Yes button on the pop-up warning window if you did not enter any user information

28. Type in the root password you would like to use; for the purposes of this document we will use "vicidial" as the root password; Click the Next button when done

29. Click the Yes button to the weak password pop-up window

30. On the "Installation Settings" screen, click on the "Software" section heading

31. Under the "Base Technologies" section click on the "Novell AppArmor" listing and then type in the exclamation "!" key; This flags this item to never install and should be indicated by a red circle with a dash in the middle

32. Scroll down to the "Server Functions" section and click on the "Web and LAMP Server" item; A green check-box should appear next to it

33. Scroll down to the "Development" section and click on "Base Development" and "Linux Kernel Development" items; A green check-box should appear next to them

34. OpenSuSE will select other package dependencies as deemed necessary and place a white check in a black box as an indication of this; You do not need to uncheck any of these

35. Click on the OK Button to return to the "Installation Settings" screen

36. Double check the settings listed and change anything before we continue; When ready to continue click on the Install button

37. Click on the "Confirm Installation" pop-up window; This is just verifying that we want to commit changes to the hard-drives and other system properties

38. The amount of time to install the operating system varies depending on your CD/DVD installation type, network speed, computer speed, etc; During the writing of this document it took about 2-hours for the Network Install CD to download and install the system
   After the installation the system will enter into a text console and begin the post-install set-up

OpenSuSE Post-Installation

1. At the login prompt type 'root' and press enter
2. At the password prompt we will type in what we set it to earlier of 'vicidial'
3. At the shell prompt type in 'yast' and hit enter
4. Use the down arrow to highlight "Network Devices"
5. Press the right arrow and then the down arrow to highlight "Network Settings" and then press Enter
6. Press the tab key until the network card window is highlighted
7. Use the up and down arrow keys to select the network card in your system that will be connecting to your network then press ALT-I
8. Press ALT-T to select Static IP Configuration
9. Press the Tab key to enter the "IP Address" field and type in the IP you want; For the purposes of this document we will use 192.168.1.75
10. Press the Tab key again to enter the "Subnet Mask" field and type in the subnet mask; For the purposes of this document we will use 255.255.255.0
11. Type Alt-N to return to the "Network Settings" screen
12. Type Alt-S to enter the "Hostname/DNS" screen
13. Type Alt-T to move the cursor to the Hostname field; For the purposes of this document we will use "vici" as the hostname
14. Type Alt-D to move the cursor to the "Domain Name" field; For the purposes of this document we will use "vicidial.com" as the domain
15. Type Alt-A to enable manual DNS Entry; Verify that the DNS entries here are correct
16. Type Alt-U to enter the default routing information screen
17. Enter the default gateway to be used; For the purposes of this document we will use "192.168.1.1" as the domain
18. Type Alt-F to finish configuration and enable the configuration changes; After the changes you will be taken back to the main YaST configuration menu
19. By default, the Firewall is enabled preventing any network connections to the server; For the purposes of this document we are going to disable this; If you want to enable this later please make sure you open the proper ports as needed
20. Press the left arrow key and then the down arrow key to highlight "Security and Users"
21. Press the right arrow key to highlight "Firewall" and press Enter
22. Press Alt-D to disable the firewall
23. Press Alt-T to stop the currently running firewall
24. Press Alt-N to save configuration changes
25. Press Enter to select "Yes" to the pop-up window to stop the firewall after saving changes
26. Press Alt-F to finish configuration changes and disable the firewall
27. Press Alt-Q to exit the yast configuration
28. At the prompt type "reboot" to cleanly enable all the network environment changes made
29. You have now successfully installed OpenSuSE v.11.0; You may now connect remotely using an SSH Client such as PuTTY

OpenSuse Patching and adding Community Repositories

1. We will now connect to the OS remotely using SSH; Our client of choice is PuTTY and it can be freely downloaded from http://www.chiark.greenend.org.uk/~sgtatham/putty/ ;You can skip step 2 if you want to perform the following from the console itself
2. Load Putty type in "192.168.1.75" in the Hostname field and press enter
3. At the login prompt type 'root' and press enter
4. At the password prompt we will type in what we set it to earlier of 'vicidial'
5. At the shell prompt type "you" and press enter
6. At the main screen type Alt-A to load the yast updates first
7. At the pop-up window press Enter to reload the yast updates and re-enter you
8. At the main screen type Alt-A to load the available system updates
9. Depending on the level of updates available at your time of install, you may need to run "you" a couple of times to get all applicable updates; For the purposes of this document we are going to install all available updates
10. When finished updating, type 'yast' at the command prompt and press Enter
11. By default "Software" should be highlighted, if so then press the Left arrow key
12. Use the Down arrow key to highlight "Community Repositories" and press Enter
13. In the "Configured Software Repositories" screen press the Tab key until the highlight moves to the upper window
14. Use the Up and Down arrow to highlight "openSUSE-DVD 11.0" and press Alt-E; This should uncheck the box labeled "Enabled", if not press Alt-E again to uncheck it; If yo are going to keep an OpenSuSE CD/DVD in the drive then you can leave this enabled
15. Press Alt-A to add a repository
16. In the "Media Type" screen press Alt-I to select a community repository then press Alt-X
17. In the "List of Online Repositories" screen press Alt-L to select the community repository window
18. Use the Up and Down arrow to move the highlight to "Packman Repository"
19. Press the Space bar to place an x next to the "Packman Repository"
20. Press Alt-O to load the repository
21. On the "Import Public GnuPG Key" screen press Alt-I to accept and import the key; The repository will now be loaded; Depending on your Internet connectivity this may take a while.
22. At the "Configured Software Repositories" screen press Alt-F to finish configuration
23. At the "YaST2 Control Center" screen press Alt-Q to quit yast
24. At the command prompt type "reboot" and press enter to cleanly load changes made to the operating system

Recompiling the Kernel for Asterisk

Compiling a kernel can potentially render a system unstable or unusable. While these instructions are provided in an attempt to reach the broadest possible configuration universe we can not guarantee they will work for you. We have slightly modified the stock distribution kernel for ViciDial. If your system installed and reboots to this point you should be fine. If you have any custom kernel needs or feel you have the need to strip out unnecessary items in the kernel then you should seek out qualified assistance.

**FAILURE TO FOLLOW THESE INSTRUCTIONS MAY
RESULT IN AN UNSTABLE OR UNBOOTABLE SYSTEM!!!**

The current openSuSE kernel version as of the writing of this document is 2.6.25.11-0.1. The instructions and files provided are for this kernel version. As new versions of the kernel are released we will attempt to create new configuration files for the kernel. If the openSuSE kernel version does not have a configuration file yet please post on the ViciDial forums at www.eflo.net and we will add it to our list of things to do.

For the purposes of this document we have changed the following kernel settings from the standard openSuSE distribution kernel:
- Sub architecture changed to "PC Compatible"
- Preemption Model changed to "Server"
- Enable kernel IRQ balancing
- Timer frequency changed to 1000hz
- CPU Frequency Scaling removed
- WAN Router removed
- SIP protocol support removed from NetFilter

EXPERTS ONLY: Removal of all non-essential modules and drivers for the intended hardware platform is preferred. In addition to that there is a quantifiable performance increase with a statically compiled kernel as opposed to a modularly linked one. We recommend statically compiling in all items needed to boot the system such as raid cards, file systems, chip set, etc. We also recommend you modularly compile drivers for a selection of back-up spare parts in case of a component failure. At a minimum the above list must be satisfied to have an acceptable kernel for Asterisk and ViciDial.

1. We will now connect to the OS remotely using SSH; Our client of choice is PuTTY and it can be freely downloaded from http://www.chiark.greenend.org.uk/~sgtatham/putty/ ;You can skip step 2 if you want to perform the following from the console itself
2. Load Putty type in "192.168.1.75" in the Hostname field and press enter
3. At the login prompt type 'root' and press enter
4. At the password prompt we will type in what we set it to earlier of 'vicidial'
5. Type "cd ~" at the command prompt and press Enter
6. Type "ls /usr/src" at the command prompt and press Enter
7. In the directory listing look for a directory (shown in dark blue) that looks like "linux-2.6.25.11-0.1"; Write down or remember the string of numbers after "linux-" so that we

can download the correct kernel configuration files; In the example above "2.6.25.11-0.1" is what we would want to write down; Please use the version that is the numerically highest version; Replace any references to <kernver> with the above string

8. Type "wget http://azrael.crashsys.com/conf/vicikern-<kernver>.sh" at the command prompt and press Enter; For the purposes of this document we would type "wget http://azrael.crashsys.com/conf/vicikern-2.6.25.11-0.1.sh" at the command prompt and press Enter

9. Type "chmod 755 vicikern-<kernver>.sh && ./vicikern-<kernver>.sh" at the command prompt and press Enter; For the purposes of this document we would type "chmod 755 vicikern-2.6.25.11-0.1.sh && ./vicikern-2.6.25.11-0.1.sh" at the command prompt and press Enter; This will begin the kernel recompilation process which, depending upon your hardware, can take anywhere from 10 minutes to hours; If you experience any issues recompiling the kernel please consult the forums at www.eflo.net

10. Type "reboot" at the command prompt and press Enter; If all goes well you will be running on your newly compiled kernel; You can verify this by logging back in and typing "uname -r" at the command prompt and press Enter; You should see "vicidial" at the end of the line

ViciDial Prerequisites

1. We will now connect to the OS remotely using SSH; Our client of choice is PuTTY and it can be freely downloaded from http://www.chiark.greenend.org.uk/~sgtatham/putty/ ;You can skip step 2 if you want to perform the following from the console itself
2. Load Putty type in "192.168.1.75" in the Hostname field and press enter
3. At the login prompt type 'root' and press enter
4. At the password prompt we will type in what we set it to earlier of 'vicidial'
5. Type "wget http://azrael.crashsys.com/conf/viciprereq.sh" at the command prompt and press Enter
6. Type "chmod 755 viciprereq.sh" at the command prompt and press Enter
7. Type "./viciprereq.sh" at the command prompt and press Enter; Watch for errors in case anything goes wrong
8. The program may prompt you for information during the install; It is OK to just hit Enter at each prompt to continue

Asterisk Patching and Installation

1. We will now connect to the OS remotely using SSH; Our client of choice is PuTTY and it can be freely downloaded from http://www.chiark.greenend.org.uk/~sgtatham/putty/ ;You can skip step 2 if you want to perform the following from the console itself
2. Load Putty type in "192.168.1.75" in the Hostname field and press enter
3. At the login prompt type 'root' and press enter
4. At the password prompt we will type in what we set it to earlier of 'vicidial'
5. Type "wget http://azrael.crashsys.com/conf/viciasterisk-1.2.sh" and press Enter; Alternatively, you may download the 1.4 script by replacing "viciasterisk-1.2.sh" in the previous and following instructions with "viciasterisk-1.4.sh"; For the purposes of this document we will use the 1.2

asterisk version

6. Type "chmod 755 viciasterisk-1.2.sh" and press Enter
7. Type "./viciasterisk-1.2.sh" and press enter; Watch for errors in case something goes wrong

ViciDial Installation

1. We will now connect to the OS remotely using SSH; Our client of choice is PuTTY and it can be freely downloaded from http://www.chiark.greenend.org.uk/~sgtatham/putty/ ;You can skip step 2 if you want to perform the following from the console itself
2. Load Putty type in "192.168.1.75" in the Hostname field and press enter
3. At the login prompt type 'root' and press enter
4. At the password prompt we will type in what we set it to earlier of 'vicidial'
5. Type "wget http://azrael.crashsys.com/conf/viciinstall.sh" and press Enter; Alternatively, you can install the SVN version by replacing "vici-2.0.4.sh" in the previous and following instructions with "vici-svn.sh"; For the purposes of this document we will use the 2.0.4 ViciDial version
6. Type "chmod 755 vici-2.0.4.sh" and press Enter
7. Type "./viciinstall.sh" and press Enter; Watch for errors in case something goes wrong
8. The program will prompt you to do manual configuration or now, Press "Y" and hit Enter; Follow the on-screen prompts and change anything per your needs
9. Due to a discrepency between the MySQL version from the installation source and the version from Online Update we need to reload it; Yast will automatically load up for this purpose; Press Alt-F to highlight the Filter patter
10. Use the arrow keys to move the highlight to "Search" and press Enter
11. Press the Tab key to move the Highlight to the Search Box
12. Type in "mysql" and press Alt-S to begin the search
13. Press the Tab key until the highlight moves into the window to the right of the search string
14. Use the arrows keys to find the package labeled "mysql"; Press the Space bas one time to change the "i" to a ">"
15. Press Alt-A to accept these changes; Yast will now reinstall the package
16. At the "Install or remove more packages?" prompt select "No" and press Enter; Yast will now exit and set-up will continue
17. The program will prompt you for interactive set-up of your new server's IP Address; This information is essential for proper ViciDial functioning and we will need to set it accordingly; Press "Y" for interactive set-up
18. The pre-configured IP Address is 10.10.10.15; Do not modify this; Press Enter when prompted for the old server IP Address
19. The program will attempt to auto-detect your new IP Address; Please verify this is correct or type in your new IP Address entered earlier; Press enter when done
20. The program will now show the old and new server IP Address; Please verify these are correct then press enter to continue

Congrats! You have now successfully installed ViciDial!
Admin page is at http://<server>/vicidial/admin.php
Agent page is at http://<server>/agc/vicidial.php