

Conectiva Linux 6 under VMware

Conectiva Linux 6 is among the most complete and innovative Linux distributions currently available. Past releases of Conectiva Linux have propelled Conectiva to the forefront of Linux use in South America and Latin America. VMware, a x86 hardware emulation system (virtual machine), permits the end-user to run most modern operating systems in a window on a Linux or Windows host. The stock VMware instructions do not provide the detail needed to install Conectiva Linux 6 under VMware; this document provides a step-by-step overview of the install process.

1. Introduction

1.1. Conectiva Linux 6

Conectiva Linux 6 is the latest Linux distribution release from Conectiva, a leader in free software operating system development throughout South America and Latin America. This release is provided in Portuguese, Spanish and English; it includes a friendly installer and provides an excellent “out-of-box” experience.

Conectiva Linux 6 includes a number of innovative features, including support for the powerful APT package management system with integrated RPM package format support. Never has keeping your Conectiva Linux system updated ever been easier.

This release is based on GNU glibc 2.1.3, Linux kernel 2.2 series, XFree86 4.0.1 and includes over 1000 packages. The full Conectiva Linux 6 distribution boxed set

includes four CDs (two of binary packages and two of source packages). Both KDE2 and GNOME desktops are included in this release.

Conectiva Linux 6 may be downloaded from a number of sites on the Internet, or you may purchase a Conectiva Linux 6 boxed set. Commercial support and training for Conectiva Linux are also available. The Conectiva web site (which includes details regarding the Conectiva Linux distribution) may be found at:

<http://www.conectiva.com.br>

1.2. VMware

VMware provides a mechanism to run most modern operating systems (for the Intel x86 architecture) in a window on your Linux or Windows desktop. Using this “virtual computer” technology, one can easily test out a particular operating system distribution, try out a new version of an operating system distribution before upgrading, or test the software currently in development on various different operating system distributions.

The virtual computer provided by a VMware session is user-configurable. Within each virtual computer, VMware may support a number of networking configurations (and emulates an Ethernet card compatible with most operating systems), IDE and SCSI disks, CD-ROM drives and floppy drives, VGA graphics and SoundBlaster-compatible sound. The “disk” support stores a disk image on your hard drive as a file, permitting you to try various operating systems without repartitioning your system. This nearly-complete solution provides the hardware emulation you need to run nearly any operating system in a stable manner.

VMware is a commercial product, licensed per host machine. Information regarding VMware may be found at: <http://www.vmware.com>

1.3. This Document

1.3.1. About the Author

This document has been written by Jacob Moorman of the Marble Horse Free Software Group (<http://www.marblehorse.org>). The Marble Horse Free Software Group is a distribution-independent development group devoted to the creation of new free software, enhancement of existing free software solutions, free software-related advocacy, and production of free software-related documentation. He may be reached at roguemtl@marblehorse.org (<mailto:roguemtl@marblehorse.org>)

1.3.2. Free Software

Conectiva Linux 6 is free software/open source software. VMware is neither free software, nor open source software; this documentation has been written to provide benefit to free software users. It should be recognized that free alternatives to VMware may be available in the future; the Plex86 (<http://www.plex86.org>) project is a promising effort which may eventually provide a suitable, free alternative to VMware. Your support of the Plex86 project is encouraged.

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1.3.6. Document Version

- 10 January, 2001: Added information about the MI 2.1.0u1 updates diskette. Minor cleanup and proofing changes.
- 30 November, 2000: Initial public release.

1.3.7. Materials

The instructional portion of this document was generated using Conectiva Linux 6.0 with the MI 2.1.0u1 update diskette, on VMware 2.0.3 build-799. Red Hat Linux 6.2 (with all updates at time of writing) was used as the host platform.

This document was generated using LyX (<http://www.lyx.org>), a document authoring system.

2. Installation Procedure

2.1. Prerequisites

2.1.1. VMware

Prior to following the installation instructions included within this document, it is expected that you have, 1) obtained the VMware software; 2) obtained a valid license for VMware (either by purchasing a license or obtaining a trial license from VMware); 3) installed a supported host platform for VMware (the author of this document used Red Hat Linux 6.2 to generate these instructions, though you may use any supported VMware platform); and 4) installed the VMware software and completed the post-install configuration (`vmware-config.pl`). When configuring VMware, you should select options to enable host-only networking.

2.1.2. Host Operating System

It is recommended that you consider installing all distributor-supplied updates and errata for your host platform; keeping your system up-to-date helps to prevent known bugs from interrupting your work. Documentation on installing system updates are available on the vendor web sites for the majority of VMware-supported host platforms. Please attempt to ensure that your system is running properly before you add

the complexity of running virtual machine software.

If you are using a Linux (or GNU/Linux) distribution as your host, please read the VMware documentation related to X servers supported on host platforms. Ensure that you have sufficient free disk space (1000-3000 MB free, minimum) to install Conectiva Linux 6 under VMware. Verify that your /dev/cdrom device is a symlink pointing to the correct hardware device for your CD-ROM. (Does your CD-ROM drive work?)

2.1.3. Conectiva Linux

Obtain Conectiva Linux 6 disc 1. This may be done by purchasing a Conectiva Linux 6 boxed set; or by downloading (free of charge, excepting any Internet service fees your ISP charges) the ISO image for Conectiva Linux 6 disc 1 and burning it to CD (using a CD burner). Take a moment to review the release notes included on the CD.

Additionally, you will require the MI (Modular Installer) updates diskette image provided by Conectiva. This diskette fixes several bugs in the previous version of the installer which would prevent you from installing Conectiva Linux 6.0 under VMware.

The updates disk is available from

<ftp://atualizacoes.conectiva.com.br/6.0/images/mi-2.1.0u1-cl60.img>; a digital signature for this disk image (signed with the Conectiva distribution key) is available from <ftp://atualizacoes.conectiva.com.br/6.0/images/mi-2.1.0u1-cl60.img.asc>

2.2. Phase One: Build a VMware Configuration

- Start VMware (execute 'vmware' from the prompt).
- Select the 'Run the Configuration Wizard.' dialog option and click on the 'OK' button to continue.
- The 'VMware Configuration Wizard' dialog will appear.
- Click on the 'Next' button to continue.

- Select the 'Linux' dialog option and click on the 'Next' button to continue.
- Enter the desired path for where you wish to store your VMware configuration and virtual disk file for this session. Click on the 'Next' button to continue.
- Ensure that the 'New virtual disk' setting has been selected and click on the 'Next' button to continue.
- Set the desired size for the virtual disk (what the VMware session will see as its hard disk). For a 'full' install of Conectiva Linux 6, a minimum of 3000 megabytes is recommended. For a 'default' install of Conectiva Linux 6, a minimum of 1500 megabytes is recommended. Once you have set your desired value for the virtual disk size, click on the 'Next' button to continue.
- Ensure that 'CD-ROM enabled' and 'Start with the CD-ROM connected' are selected. Click on the 'Next' button to continue.
- Ensure that the 'Floppy enabled' and 'Start with the floppy connected' are selected. Click on the 'Next' button to continue.
- Select 'Host-only networking' and click on the 'Next' button to continue.
- Review the settings you have selected. Click on the 'Done' button to complete the generation of your new VMware session configuration.

2.3. Phase Two: Install Conectiva Linux 6

- Place the Conectiva Linux 6, disc 1 CD-ROM in your CD-ROM drive.
- Power on the VMware session.
- Conectiva Linux 6 will begin to boot from CD.
- At the installation menu, highlight "Conectiva Linux 6.0 Desktop Edition (Text Interface)". The graphical (VGA and VESA graphics) installers for Conectiva Linux 6.0 will not work under VMware; the X server will generate a Signal 11 error during start up, so you must use the text-based installer.

- Press 'e' to edit this configuration. Modifying this configuration will allow us to tell the installer that we have an updates disk; it will prompt us for this disk later. Note that you will not need to write the disk image to floppy; simply have the disk image on your hard drive in a place accessible by the user who is executing VMware.
- With the "kernel="... line highlighted, press 'e' to edit this line.
- Add " updates" to the end of this line (make sure there is a space between the word "updates" and the previous words on the line). Press enter to complete this change.
- Press 'b' to boot this modified configuration.
- You will be prompted to "Insert your updates disk and press 'OK' to continue."
- Press Control + Alt + Escape to return keyboard/mouse control to the host.
- Select 'Devices' -> 'floppy0' -> 'Disconnect and edit' from the VMware menu bar.
- Change the floppy drive type from 'Device' to 'File'. Change the path from '/dev/fd0' to point at the full path to the diskette image you downloaded. i.e. /home/username/mi-2.1.0u1-cl60.img
- Click on the 'OK' button.
- Select 'Devices' -> 'floppy0' -> 'Connect' from the VMware menu bar.
- Click on the VMware window to return control to the guest operating system.
- Press "Ok" to continue. Installer updates will be loaded from the diskette image and the install will continue.
- When prompted for "Interface Selection", select the "NEWT Frontend" and select "Ok".
- We will now discontinue use of the updates floppy image, so the correct hardware settings will be detected. Press Control + Alt + Escape to return keyboard/mouse control to the host. Select 'Devices' -> 'floppy0' -> 'Disconnect and edit' from the VMware menu bar. Change the floppy drive type back to 'Device' and set the path field to '/dev/fd0'. Click on the 'OK' button. Select 'Devices' -> 'floppy0' -> 'Connect' from the VMware menu bar. Click on the VMware window to return control to the guest operating system.

- Select your desired language to use during the install. (I chose English.)
- The modular installer will detect a “Microsoft IntelliMouse (PS/2)” mouse. Press the “Ok” button, then the “Next” button.
- Select an appropriate keyboard layout. (I selected “Generic US keyboard”.) Press the “Next” button to continue.
- Kernel modules will load.
- The message, “Unable to open /dev/hda - unrecognized disk label.” will appear. Press the “Cancel” button.
- The message, “Cannot probe the partition table in your disk /dev/hda. Do you want to create a NEW partition table on this disk?” will appear. Press the “Yes” button.
- Select your desired install type; continue and manually partition the disk if needed (this is generally not necessary, since the Conectiva Linux 6.0 default partition handling does work correctly). If you are asked to manually partition the disk, I recommend you set aside approximately 100 MB in a linux-swap partition.
- Packages will be installed based on your selected install type. (A ‘Default install’ contains roughly 450MB of files and package installation takes about 15 minutes on a dual Pentium II 350 under VMware; performance will vary based on hardware and software load.)
- Select ‘Configure network through DHCP’.
- When prompted regarding your video card, “Use manual settings” and select “Generic VGA” (“vga” server) and continue. We will override this setting during the final phase of our installation.
- When prompted regarding your monitor, select “Generic Extended SVGA” and continue. We will override this setting during the final phase of our installation.
- Enter the desired password for the root account.
- Select LILO or GRUB as your boot loader; install to MBR (Master Boot Record).
- Create a boot floppy, if desired.

- Complete the installation process. Continue to phase three of these instructions when the installation is complete, before rebooting.

2.4. Phase Three: Complete Installation

- The system will start to reboot after the installation completes. Presuming you have not modified the VMware configuration or BIOS setup, there is no need to eject the Conectiva Linux CD (the BIOS is set to boot from hard disk before CD-ROM).
- If you selected LILO as your boot loader, follow this line; if you selected GRUB, skip this line. When the LILO “boot:“ prompt appears, press tab. At the “boot:“ prompt, enter:

```
linux single
```

- If you selected GRUB as your boot loader, follow this line; if you selected LILO, skip this line. When the GRUB menu appears, highlight “Conectiva Linux 6.0” and press ‘e’ to edit this option. Press ‘e’ again to edit the “kernel=”... line of this configuration. Add the word “single” to the end of this line and press enter; make sure there is a space between “single” and the previous word on this line. Press ‘b’ to boot this new configuration.
- The system will boot up in to single user (maintenance) mode.
- Once the system has finished booting and you are presented with a prompt (“#”), press Control + Alt + Escape to return keyboard/mouse control to the host.
- Select ‘Settings’ -> ‘VMware Tools Install’ from the VMware menu bar. The VMware tools suite includes a management application that allows you to tweak the settings on a running VMware session, and an enhanced X server customized for use with VMware.

- When prompted as to whether you want to read the VMware tools documentation, select 'No' (unless you have a live net connection and wish to read the official instructions).
- Click on the VMware console session to return control to the virtual machine.
- At the “#” prompt, enter the following commands:

```
mount /dev/fd0 /mnt/floppy
cd /tmp
tar -xzf /mnt/floppy/vmware-linux-tools.tar.gz
cd vmware-linux-tools
rm /dev/mouse
```

- The /dev/mouse symlink will be regenerated during the install process.
- At the “#” prompt, enter the following command to start the tools install:

```
./install.pl caldera
```

- The Conectiva Linux X-Windows file layout most matches that of Caldera, from the list of those supported by VMware. Press enter when prompted as to whether or not you wish to continue the installation.
- After successful completion of the install, your normal floppy resource will automatically be restored. (If the install fails, you may disable the VMware Tools “diskette” by first unmounting the floppy (“umount /mnt/floppy”), then by using the 'Settings' -> 'Cancel VMware Tools Install' option on the VMware menu bar.)
- If you wish to have X start automatically during system startup, edit /etc/inittab and modify the following line:

```
id:3:initdefault:
```

to read:

```
id:5:initdefault:
```

- At the “#” prompt, enter the following commands:

```
cd /tmp
rm -Rf vmware-linux-tools/
sync
reboot
```

- Your installation of Conectiva Linux 6 is now complete; X should start correctly during the following system start-up (if you made the change to your /etc/inittab file). You may wish to add 'vmware-toolbox' to the menus or desktop of your selected desktop environment or window manager.

3. Obtaining Support

3.1. Conectiva Linux

Information regarding support of the Conectiva Linux distribution, as provided by Conectiva, may be found on the Conectiva web site. At time of this writing, Conectiva provides support with the purchase of a Conectiva Linux boxed set; please see the Conectiva web site for additional, up-to-date details. The Conectiva web site is provided in several languages; the English language support page may be found at: <http://en.conectiva.com/support>

Bugs found in the Conectiva Linux distribution may be reported using Conectiva's Bugzilla (<http://distro.conectiva.com.br/bugzilla/>).

3.2. VMware

Information regarding support of VMware is available from the VMware support page, found at: <http://www.vmware.com/support/>

Bugs found in VMware may be reported using the "File an Incident" link on the VMware support page (mentioned previously).

3.3. Reporting Bugs in This Document

Bugs (such as spelling errors, or errors of a technical nature) found in this document should be reported to the current maintainer of this document, Jacob Moorman. He may be reached at roguemtl@marblehorse.org (<mailto:roguemtl@marblehorse.org>)

The most recent official release of this document should always be available from the Documentation page on the Marble Horse Free Software Group website (<http://www.marblehorse.org>). This is the 10 January, 2001 release of this document. Please note that the author is unable to accept Portuguese language nor Spanish language e-mails; English language e-mail is preferred.

