



X-Series Desktop Virtualization Kits with vSpace™ for Linux



Ubuntu 10.04.2 Installation Guide

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Overview

NOTE: The latest version of vSpace for Linux supports ONLY the LTS Desktop versions of Ubuntu 10.04, 10.04.1, and 10.04.2

This document is a supplement to the X-series User Guide.

For basic common information such as safety and regulatory compliance, product overview and other features of the X-series access devices please see the X-series User Guide.

This supplement provides installation information for the NComputing X-series vSpace Software for Linux for the Ubuntu 10.04.2 LTS Desktop distribution and includes instructions for:

- Installing Ubuntu 10.04.2 LTS Desktop
- vSpace X-series Software installation
- Instructions for on-line and off-line registration
- USB to user station assignment
- Console functionality
- Uninstalling the Linux vSpace software

This document assumes the user will be starting from a clean install of Ubuntu 10.04.2 with Ubuntu updates applied.

Prerequisites

The following items are needed to begin the installation process:

- Ubuntu 10.04.2 LTS desktop installation iso image (You can download it from: <http://www.ubuntu.com/desktop/get-ubuntu/download>)
- Current NComputing X-series for Linux vSpace Software Packages and associated “readme” document. Below are the install package names at the time this install guide was written:
 - vSpace-x_3.1.1-r7053_ubuntu-10.04_i686_Install_1st.deb
 - Multi-user_Extensions_for_Linux_Install_2nd_r7053.deb
- Sound card (or device) on host system that is supported by Ubuntu 10.04.2 and has been enabled
- Internet connection

Fully review the Readme/Release Notes supplied with the vSpace release you are installing

Note: An Internet connection must be available during the installation to allow download and installation of dependent packages located in the Ubuntu package repository maintained by the Ubuntu community.

Installing Ubuntu 10.04.2 desktop

Another reminder – you can locate and download Ubuntu 10.04.2 desktop from:

<http://www.ubuntu.com/desktop/get-ubuntu/download>

Please use only a clean 10.04.2 LTS desktop version and then apply Ubuntu updates.

1. Download the Ubuntu 10.04.2 LTS desktop ISO file
2. Create Ubuntu 10.04.2 System CD-R
3. Insert Ubuntu 10.04.2 desktop Disk into System and Power-on/boot.
4. The Ubuntu install screen opens with options for trying Ubuntu 10.04.2 without changing the system, and installing the distribution directly on the hard drive. Select your desired language and click the “Install Ubuntu 10.04.2 LTS” button.

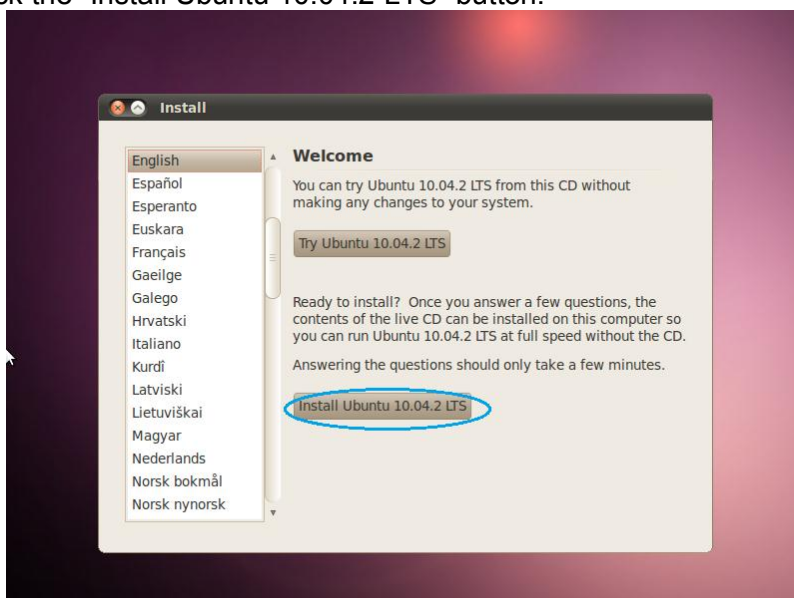


Figure 1 – Starting the install

5. Select Region and Time Zone and then click “Forward”

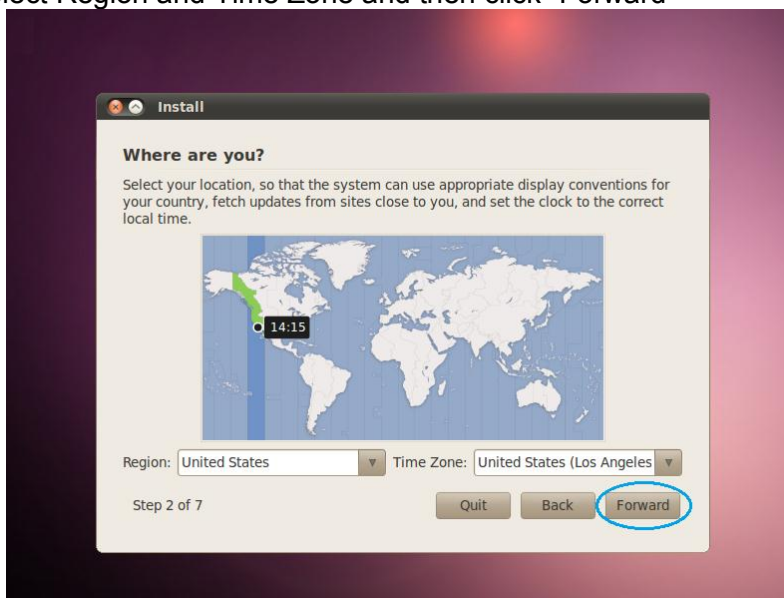


Figure 2 – Select Region and Time Zone

6. Select Keyboard Layout and click “Forward”

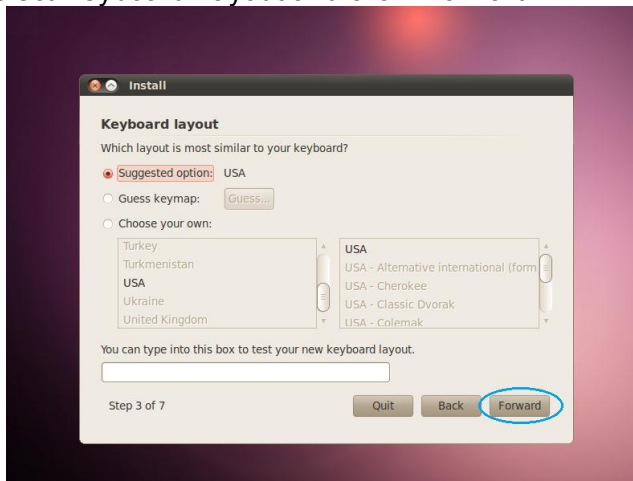


Figure 3 – Select Keyboard Layout

7. Select how you want the disk space configured – typically “Erase and use entire disk” and then click “Forward”

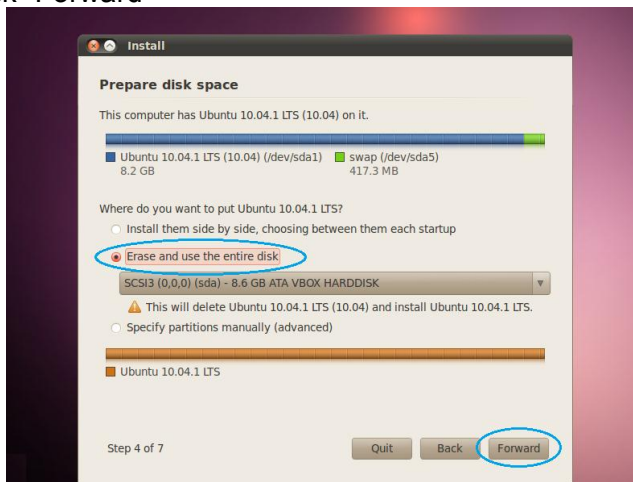


Figure 4 – Disk Space Configuration

8. Specify your desired Administrative login credentials and host system name, and click “Forward”

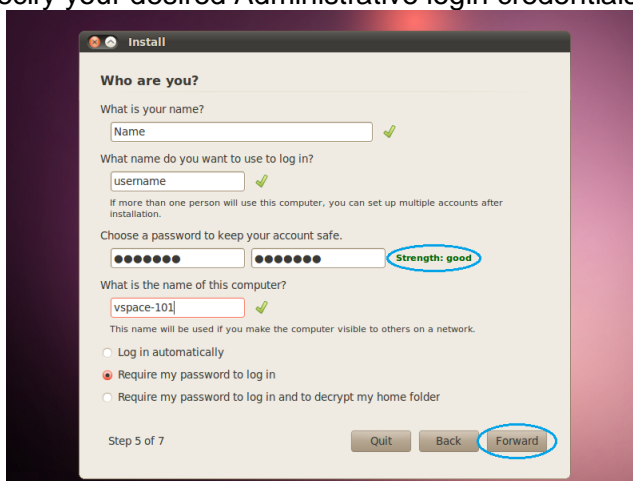


Figure 5 – Specify Administrative Login Credentials

9. Review your selections on the “Ready to Install” page, and if satisfied, click “Forward”

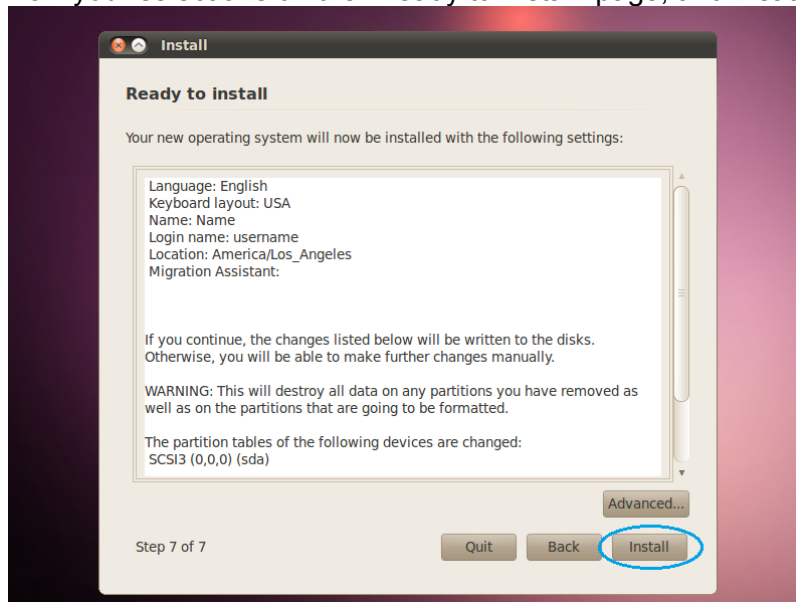


Figure 6 – Review install option selections and start OS install

10. After Ubuntu 10.04.2 installs and reboots, go to:
System > Administration > Update Manager
and apply the latest Ubuntu updates

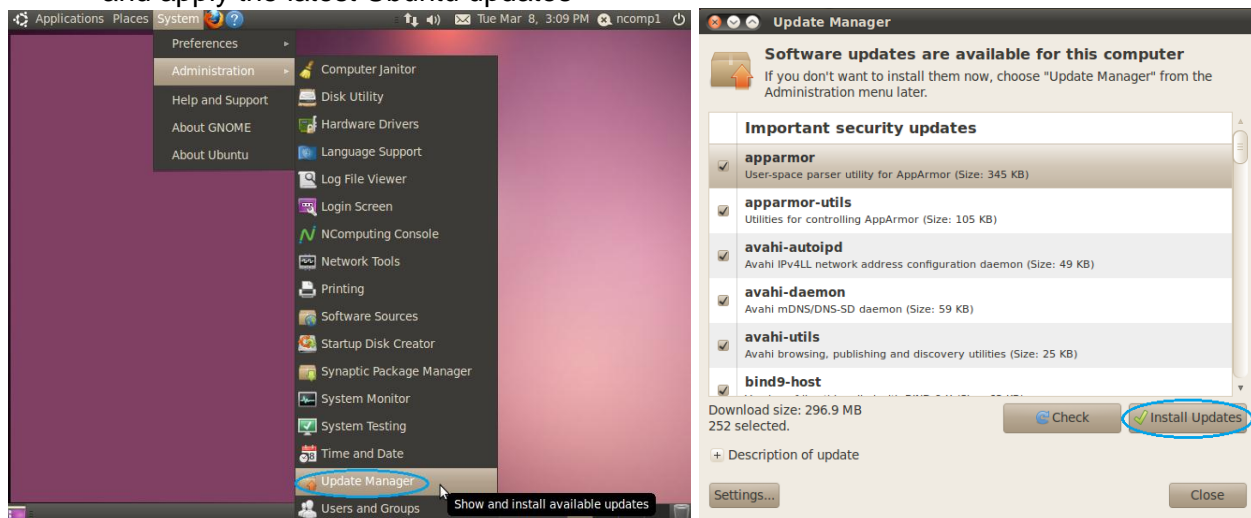


Figure 7 – Apply latest Ubuntu updates

11. Copy the two Unbuntu X-series install packages from the downloaded zip (the full vSpace install process requires both packages) onto your Ubuntu desktop

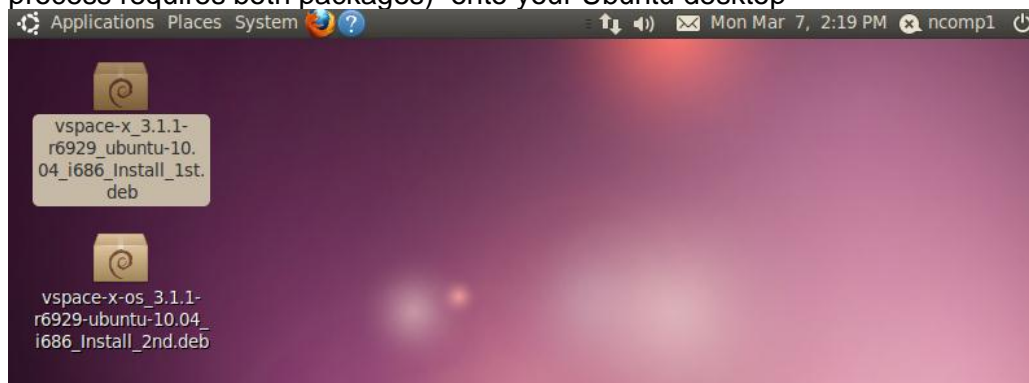


Figure 8 – Locating the vSpace installation packages on the desktop

12. Install the file with Install_1st in the name on your updated Ubuntu 10.04.2 DESKTOP system

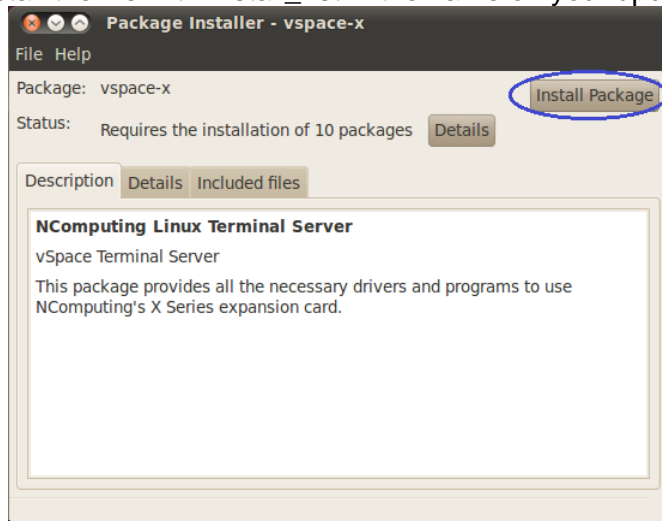


Figure 9 – Installing first vSpace package

13. You'll be asked to provide the system administrator password before the install can start.

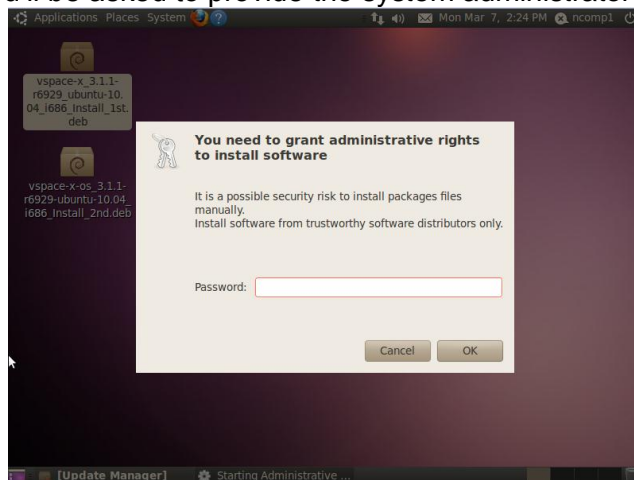


Figure 10 – Verify admin credentials

14. The vSpace installation package will download additional required packages, and you'll see progress bars while the additional packages are downloaded and then installed.

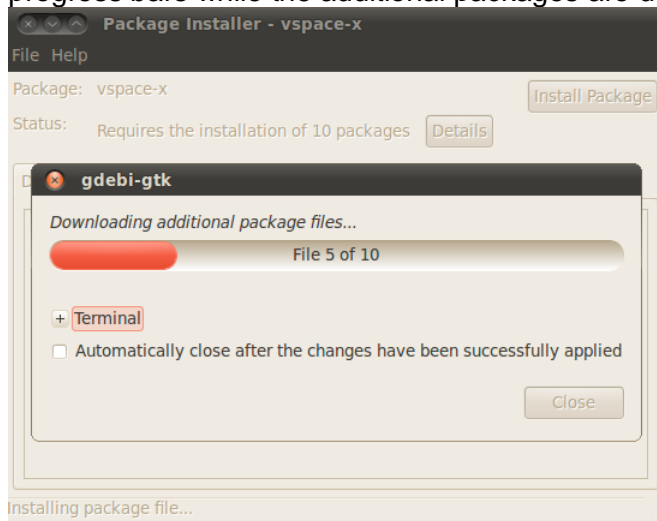


Figure 11 – Progress bar as vSpace downloads and installs additional required packages

15. If you happen to get an error message saying:
“An error occurred while loading or saving configuration information ...”
simply click “OK” to dismiss the error message.

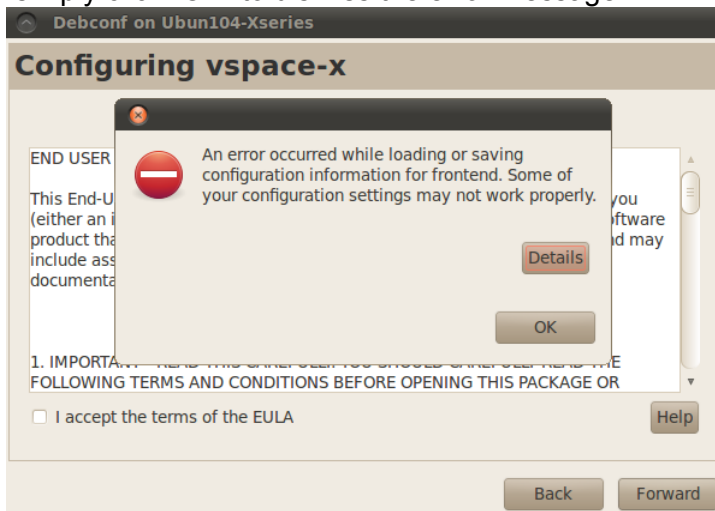


Figure 12 – Ignore possible spurious error message

16. You must accept the vSpace EULA and click “Forward”

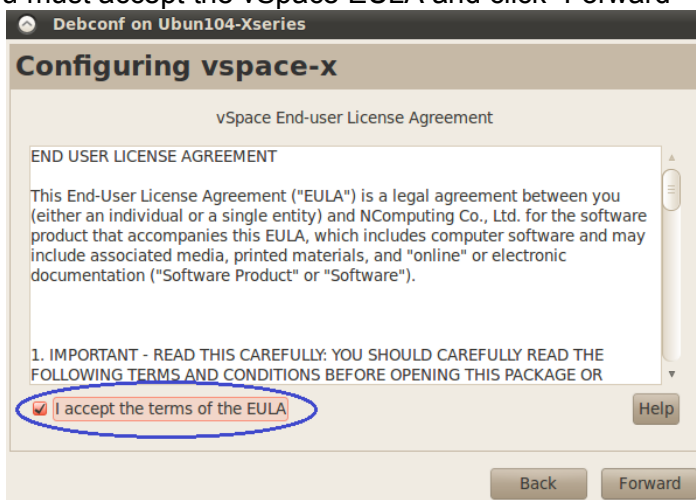


Figure 13 – Accept vSpace End User License Agreement

17. When installation is complete, you’ll be reminded that the vSpace software and the access devices need to be registered and activated.

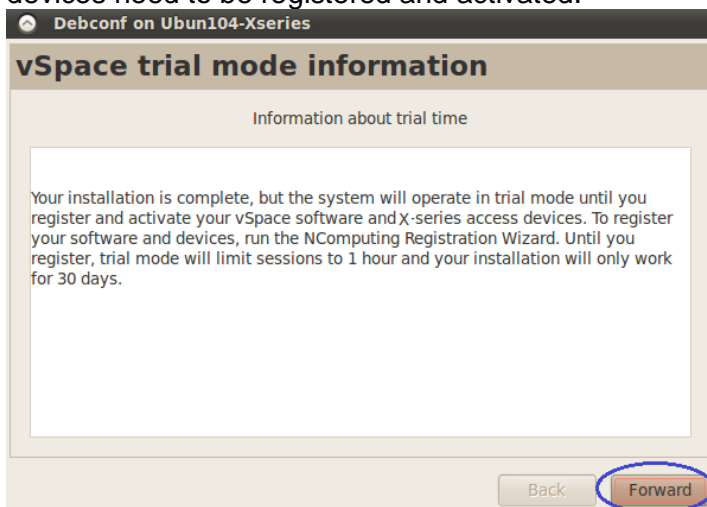


Figure 14 – Trial Mode advisory message If system is not registered

18. After you click “Forward“, you’ll get a final verification that the installation finished. Click “Close“ to dismiss the message box.

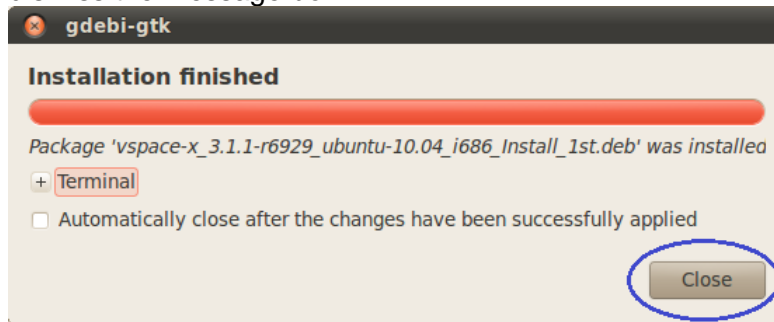


Figure 15 – Final verification that first vSpace package installation finished

19. Clear the “Package Installer“ box by clicking the cancel button in the upper left-hand corner.

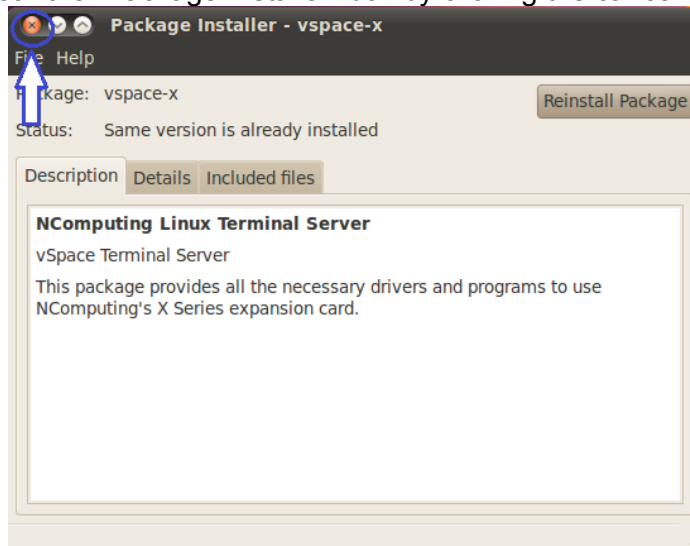


Figure 16 – Clear “Package Installer“ message box

20. Now double click on the desktop file with Install_2nd in the name. Then click “Install Package“ once the Package Installer box opens.

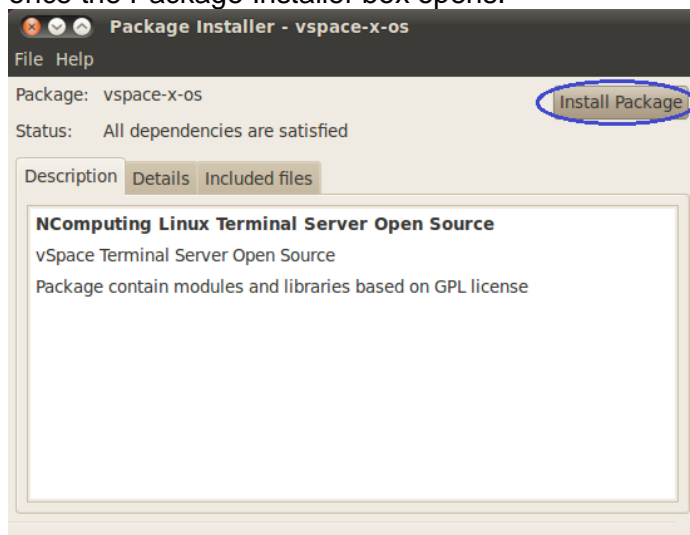


Figure 17 – Start the second vSpace package install

21. Once again, you're asked to provide the system admin password before the install can begin.

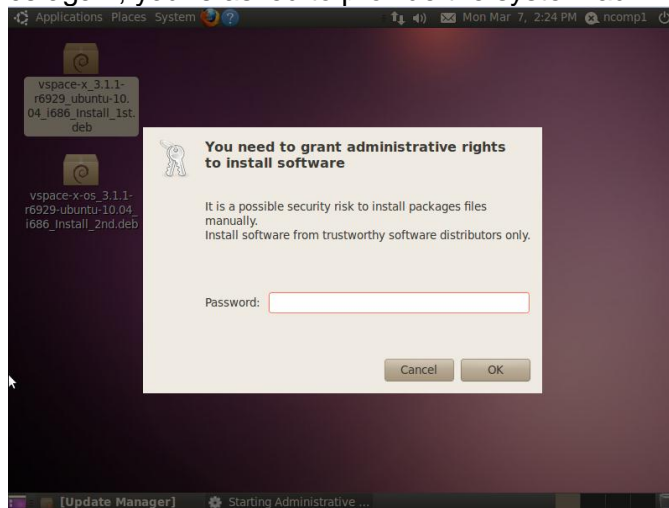


Figure 18 – Second verification of admin credentials

22. The 2nd install will take just a few seconds, and when it is complete, click “Close” to dismiss the window.

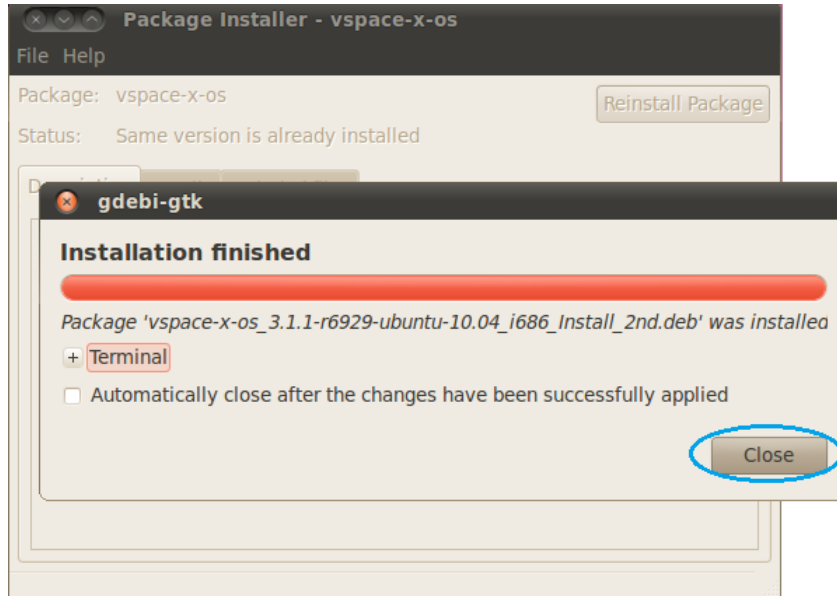


Figure 19 – Second vSpace package install progress and completion

23. Now access the upper left-hand corner power icon (which turned **RED** when installing the first vSpace package) and Reboot your Ubuntu system.



Figure 20 – System Reboot required after second package installed

Using the vSpace Administration Console Window

After reboot, type-in or click-on a username with administrative rights and enter the password into the login screen, to bring up the Ubuntu Desktop.

Then on the menu taskbar, click on:

System > Administration > NComputing Console

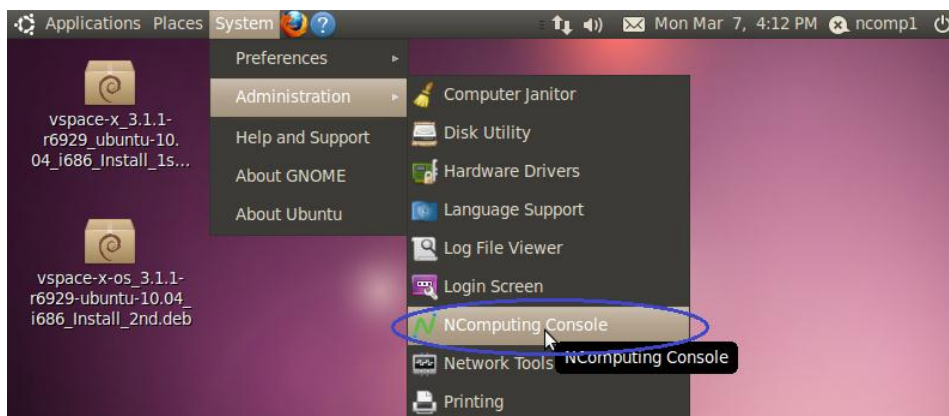


Figure 21 – Launching the vSpace Administration Console

This starts the vSpace Administration Console launch. You will be required to enter the “administration rights” password – to verify you have appropriate permissions to run the console.

When vSpace is initially installed on a host, it starts an automatic a “30-day Trial Period.” During this trial period, the user has complete access to all features of the software to allow evaluation of the product. To use the product beyond this “30 day trial period”, the software must be registered.

Also until the software is registered, any X-series connected user sessions are limited to 1-hour at a time. At the end of the hour, the user’s session will be terminated.

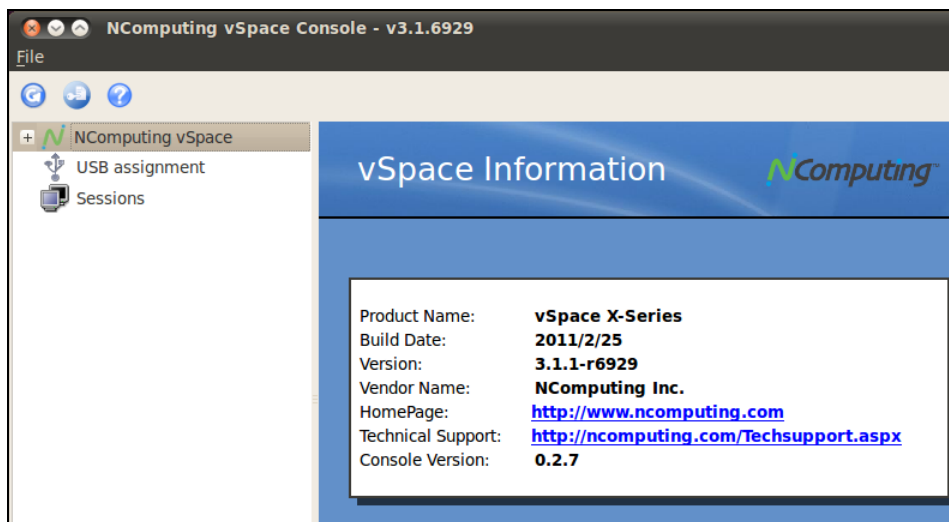


Figure 22 – Administration Console window

Registering Your Product

An Internet connection is required for on-line registration.

To start the registration process, click on the “Registration” icon in the upper left-hand side of the admin console window. The vSpace Registration Wizard will then walk you through the product registration process.

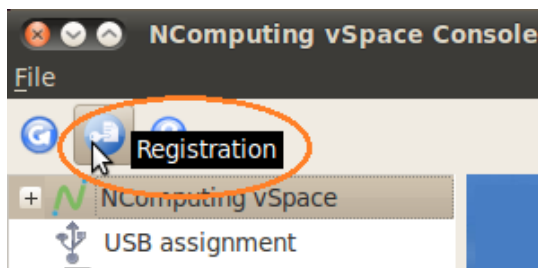


Figure 23 – Launching the Registration Wizard



Figure 24 – X-series Registration Wizard initial screen

After launching Registration Wizard, click “Next” to proceed

The wizard then takes you to the “Type of Registration” screen.

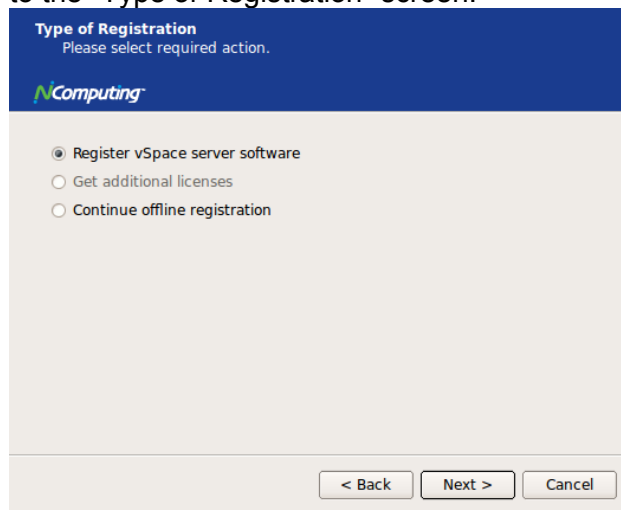


Figure 25 – Type of Registration Screen

Regardless of whether you want to register your vSpace software and X-series PCI cards online or off-line, make sure the “Register vSpace server software” radio button is selected, and click “Next.”

The wizard then takes you to the “Customer Data” window, and you must fill in all the available fields to continue to the next step.

If the "Customer Data" screen data fields are not already populated, enter the registered user's relevant information. Each field in this window must be filled in. (Fields that still need data entry are highlighted in light red.)

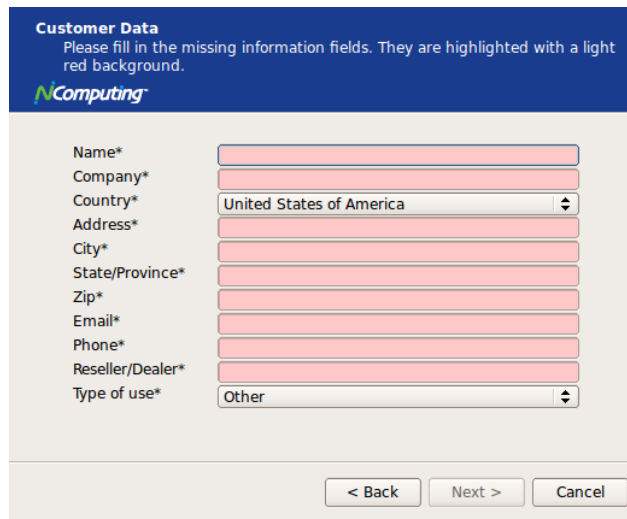


Figure 26 – Registration Customer Data Window – w/ no data entered

Once all customer data has been entered, click the "Next" button.

The registration wizard then shows a list of all registered and unregistered X-series PCI cards installed in this vSpace host. You cannot select which cards will be registered – all unregistered cards shown in this list will be registered

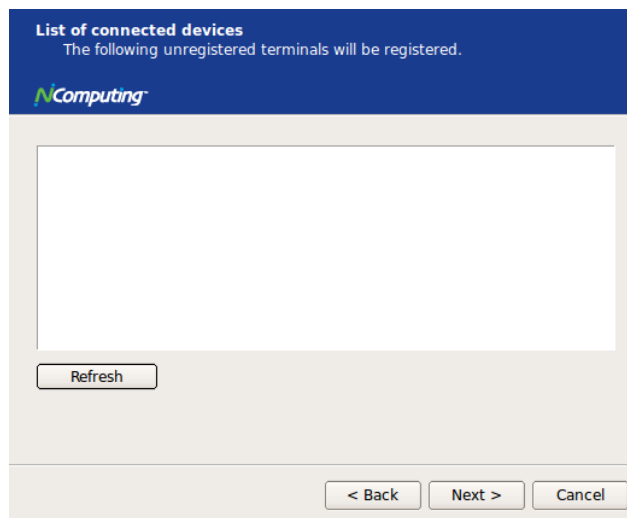


Figure 27 – List of installed PCI cards Screen

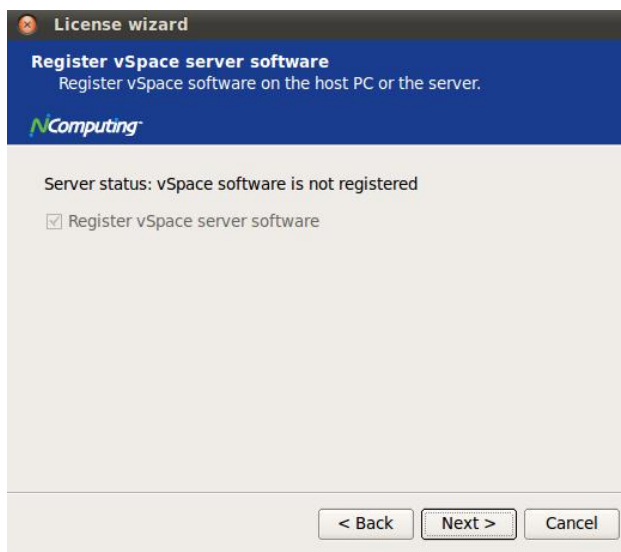


Figure 28 – vSpace software registration status

Online Registration

In the case of Online Registration, follow the instructions below. Otherwise, skip to the section titled “Offline Registration”.

If you want to register your vSpace software and X-series PCI cards online, make sure the “Register online, using your internet connection” radio button is selected, and click “Next.”

Click on the “Use tunnel connection through local HTTPS proxy server” box if you normally access the Internet at your location through a proxy server. Clicking the box enables you to fill in the proxy server IP address and the port number to be used.

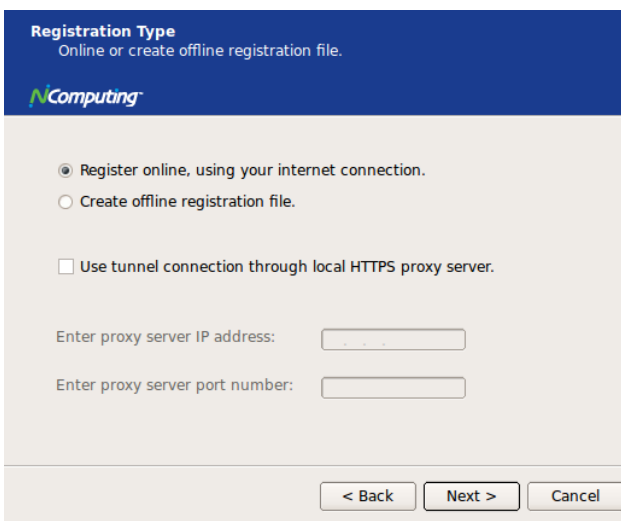


Figure 29 – Select Registration Type Screen

Before the registration wizard communicates with the registration server, you will get the following “Summary” screen showing all user information that will be registered with the vSpace software. Also, any installed but unregistered X-series PCI cards will be listed for registration. .



Figure 30 – Registration data Window

If the data is correct, click on the “Next” button or click “Back” if you wish to change any of the information

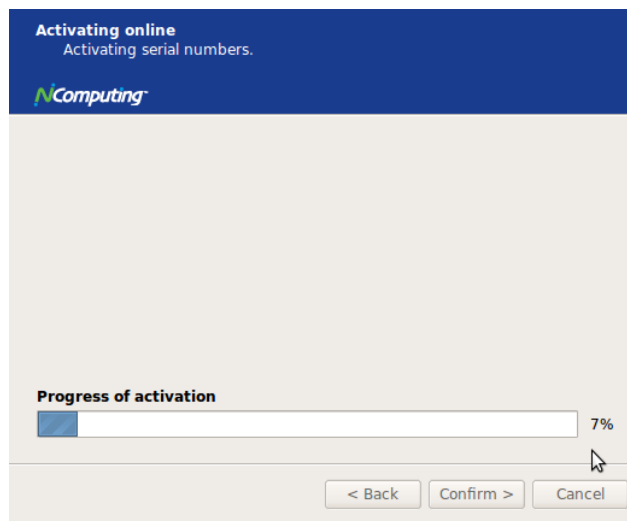


Figure 31 – Registration Progress Window

Clicking “Next” tells the registration wizard to go ahead and contact the online registration server, and the “Progress of activation” status screen is displayed.

Once the installation wizard completes its communications with the online registration server, the “registration results” window is displayed. If the registration was successful, you’ll get “Registered customer data and Software and device license information” – this removes “Trial Period” status from the vSpace software, and the status information is replaced with a standard software license. (License number is shown on this screen.)

Be sure to click the check box for the “Register future devices in the background” option, if you want vSpace to automatically register any unregistered X-series PCI cards that might get installed into this system in the future. Using the “background registration” feature requires standard Internet connectivity.

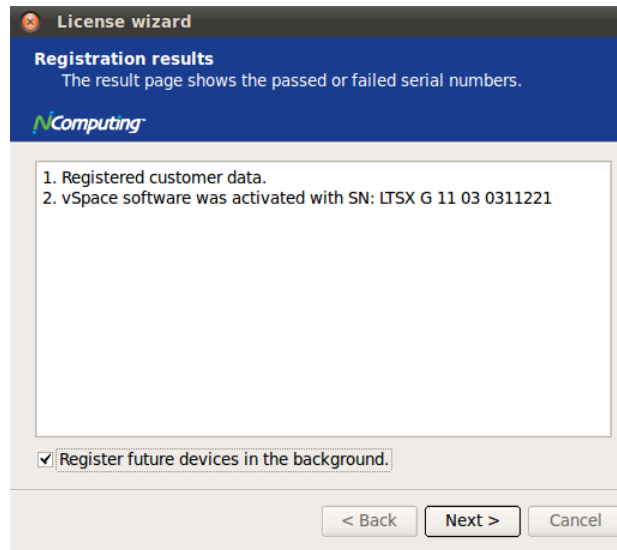


Figure 32 – Registration Results Screen

If you get the “Customer data was not registered” message in the Registration Results screen, then the registration process failed, and the vSpace software stays in “Trial Mode.”

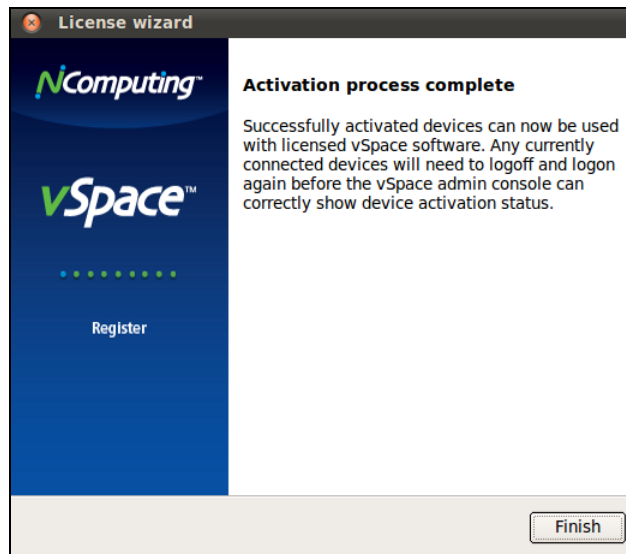
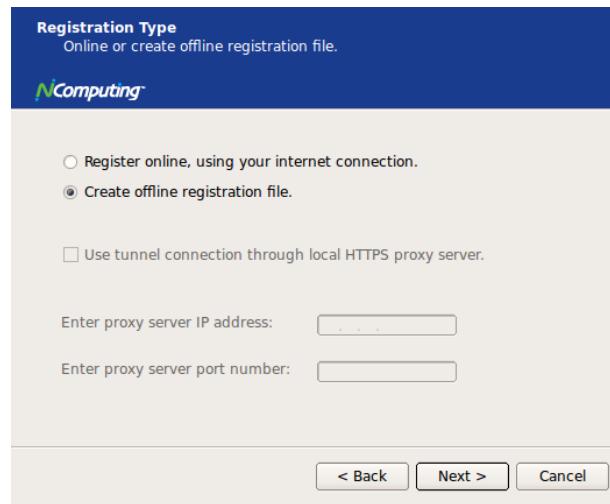


Figure 33 – Online Activation Complete Screen

Offline Registration

To do Offline Registration, follow the instructions below. If you have completed, the online registration section, skip to “Adding new users”.

To use offline registration, select the “Create off line registration file” option, and click “Next.”



Registration Type
Online or create offline registration file.

NComputing

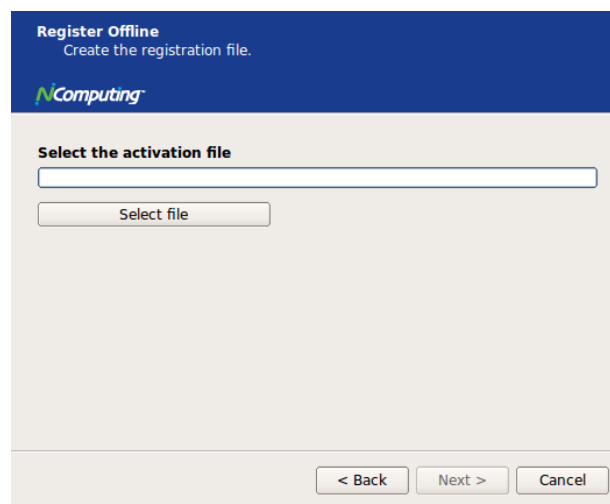
☐ Register online, using your internet connection.
☒ Create offline registration file.
☐ Use tunnel connection through local HTTPS proxy server.

Enter proxy server IP address:

Enter proxy server port number:

< Back Next > Cancel

Figure 34 – Select registration Type Screen



Register Offline
Create the registration file.

NComputing

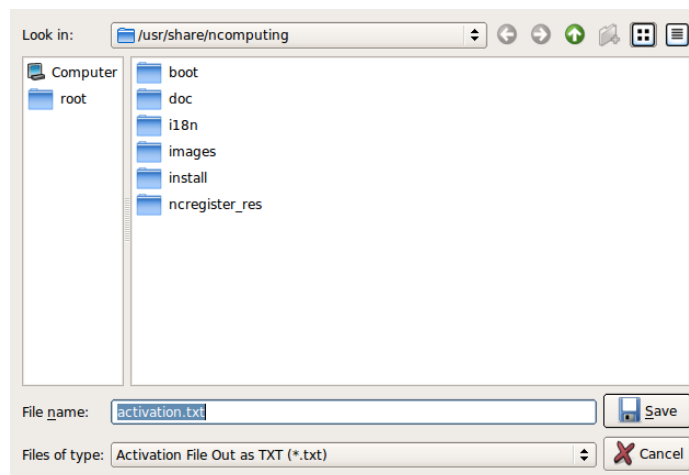
Select the activation file

Select file

< Back Next > Cancel

Figure 35 – Select where to store offline activation file

Click on the “Select file” button to define where you wish to store the activation file that you will then email to registration@ncomputing.com. This brings up the “Save File” dialog box and you can select the location for storing the file, and you can change the file name as well – **but you MUST NOT change the filetype from “txt”**



Look in: /usr/share/ncomputing

Computer
root

- boot
- doc
- i18n
- images
- install
- nregister_res

File name: activation.txt

Files of type: Activation File Out as TXT (*.txt)

Save Cancel

Figure 36 – Save File screen

Once you've selected where to save the file and the filename, click the "Save" button, and the "Register Offline – Create the registration file" screen is again displayed showing the fully qualified filename you selected.

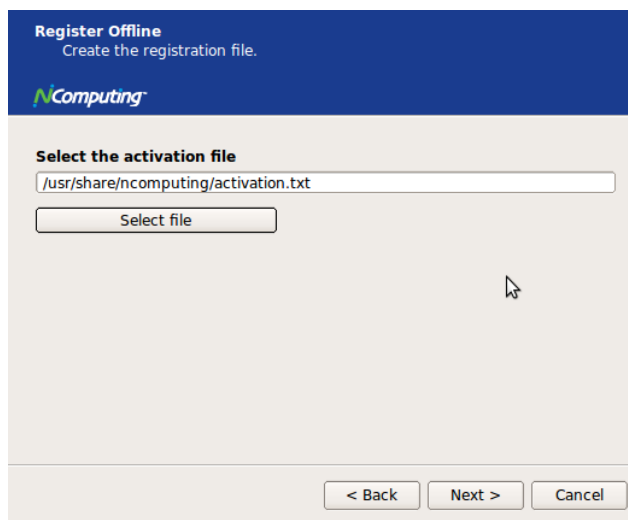


Figure 37 – Register Offline file save screen

Now click the "Next" button to create and save the registration file.

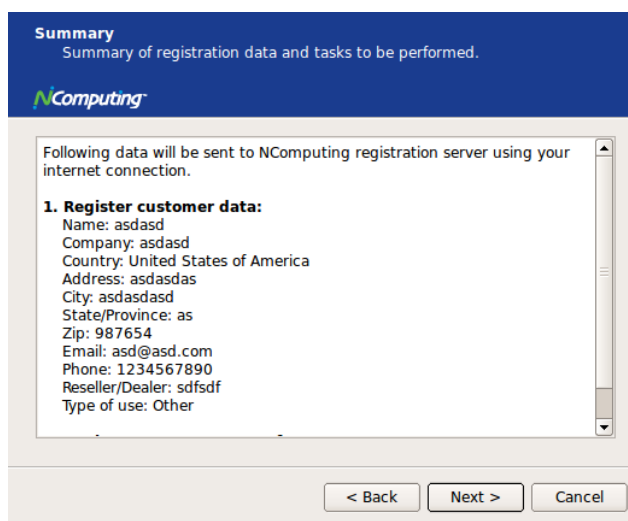


Figure 38 – Registration Summary screen

The registration summary information is then displayed. Click "Next" to continue.

Now that you have the "Offline Registration file", email it to: registration@ncomputing.com

Once you have recieved a returned license file (filetype = .lic) from Ncomputing's automated offline email registration system, save the file onto the Linux host, launch the NComputing Admin Console, and once again launch the Registration Wizard.

Click "Next" in the Registration Wizard until you again reach to the "Type of Registration" screen.

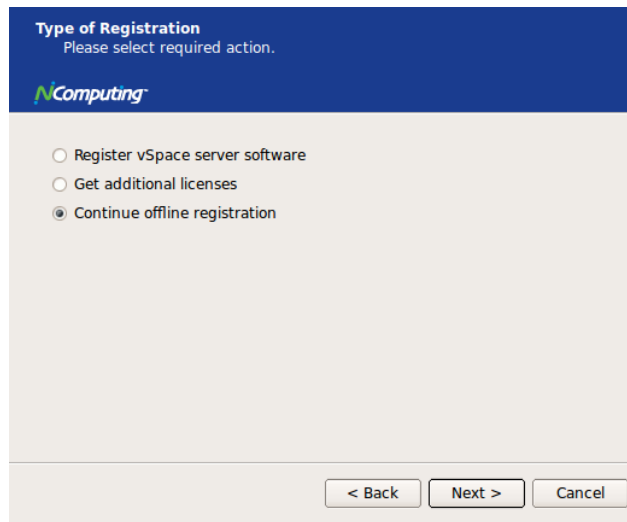
The screenshot shows a software registration window titled "Type of Registration" with the instruction "Please select required action." and the NComputing logo. It contains three radio button options: "Register vSpace server software", "Get additional licenses", and "Continue offline registration", which is selected. At the bottom are buttons for "< Back", "Next >", and "Cancel".

Figure 39 – Type of Registration screen

This time - to complete the offline registration process, select the “Continue offline registration” radio button and click “Next.”

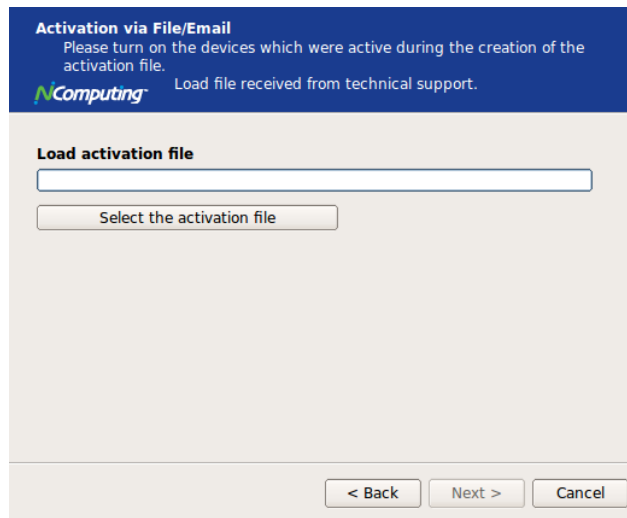
The screenshot shows a software activation window titled "Activation via File/Email" with instructions "Please turn on the devices which were active during the creation of the activation file." and "Load file received from technical support." along with the NComputing logo. It features a section "Load activation file" with a text input field and a "Select the activation file" button. At the bottom are buttons for "< Back", "Next >", and "Cancel".

Figure 40 – Load Activation File screen

Now, you’re presented with a screen for entering the location where you stored license file that was returned to you by email.

Click the “Select the activation file” button to bring up a dialog box for locating the license file, and use it to find license file, and click “Open.”

Then the “Load Activation File” screen will be redisplayed showing the fully qualified licence filename.

Finally, click “Next” to finish the activation process.

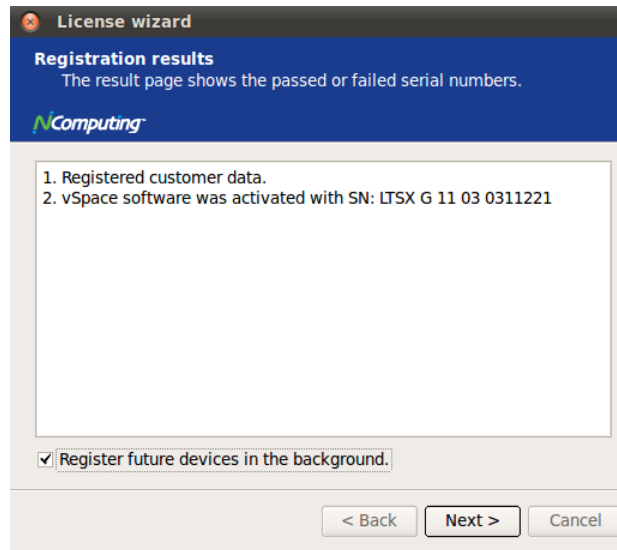


Figure 41 – Offline registration results screen – showing a successful registration example

You can click the check box for the “Register future devices in the background,” but it will have no effect because you have used offline registration. The “background registration” feature requires an active standard Internet connection.

Click on “Next,” to dismiss the License Wizard.

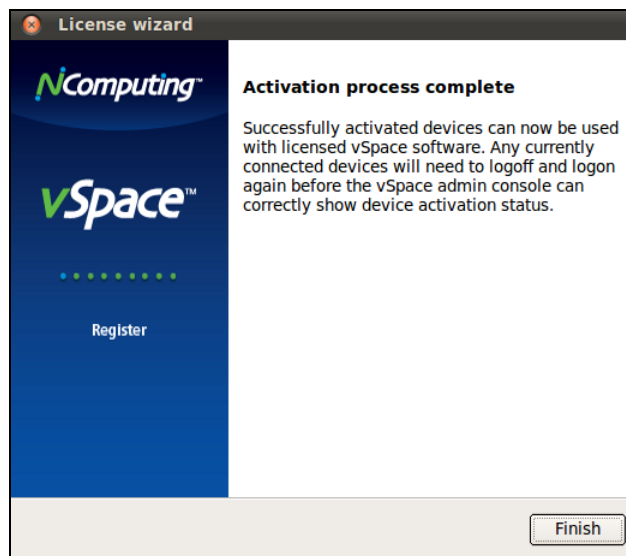


Figure 42 – Offline Activation Complete Screen

Adding new users

If you have not yet created users for this Linux installation, now is a good time to do so using the Linux GUI.

Or

You can launch a Terminal console with sufficient rights to create new users

Enter the command “sudo adduser <username>” (The variable **username** refers to the userid or name of the user which should be created, and for the first “sudo” command, you will be prompted for the administrative password before the “adduser” command is executed.)

You can think of sudo is the “superuser do” command, and in this context it executes a single “adduser” command as the “superuser”. However, sudo is actually an abbreviation for “substitute user do” (as in, do a command with another user's privileges) and in this case that is the “superuser.”

For example: `sudo adduser user2`

For each new user, the system asks a series of questions needed to create the account. After all questions have been answered, the new user will be active on the system and he/she can login at any NComputing X-series access device attached to this system.

The X-series Administration Console for Linux

The NComputing System console provides current data on the X-series sessions and USB assignment on this host. The product information screen shown below provides vSpace version information and contact information.



Figure 43 – Product Information screen

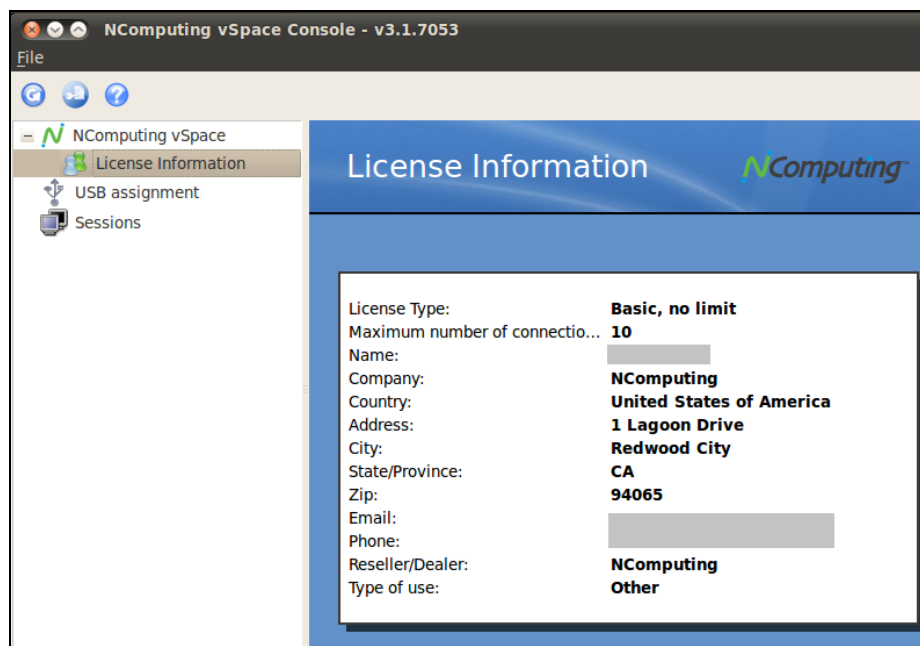


Figure 44 – vSpace License Information Screen

USB Port Assignment

“Assigning” USB devices (i.e., associating them with a particular station or access device), is started by clicking on the “**USB assignment**” icon in the left-hand-pane of the NComputing vSpace Administration Console. This function permits assigning a host USB port (or USB devices attached to a host port) to be accessible to specific virtual desktop sessions, all sessions associated with X-series access devices, or to the host console session.

In the current implementation, users can manage USB devices that mount automatically through the Gnome Volume Manager (USB memory stick, HDD, etc.).

Please note that assignment cannot be changed for devices previously present and mounted with a different user's rights. Therefore, to ensure your USB port assignment configuration works as intended, please disconnect all non-essential USB devices and re-boot the machine BEFORE attempting to assign USB ports to X-series device connected stations.

After the reboot, please Login as user “root” (or an admin authorized user) to define the USB port assignments.

To prevent un-authorized access by other non-root system users, some multi-user Ubuntu deployments may require USB removable storage to be mounted with specific security attributes. The following options are available:

- Assign the device just to the Host console:
 - Only the console session can see or have any access to the USB device when it gets attached to the system.
- Assign the device as Shared read-write:
 - All sessions/stations will see the device when it is plugged in; all sessions are allowed to read/write associated contents.
- Assign it as Shared read-only:
 - All sessions/stations can read from the storage device, but they cannot write or delete files. Example: when a teacher wants to share pictures or media with students logged on other stations but do not want them to alter the storage device files in any way.
- Assign it to one particular Station associated with a specific X-series access device for the duration of the current session:
 - With this attribute, the removable USB storage device will only be seen at that particular station, and that station is the only one with permissions to read/write/delete files on the USB device.

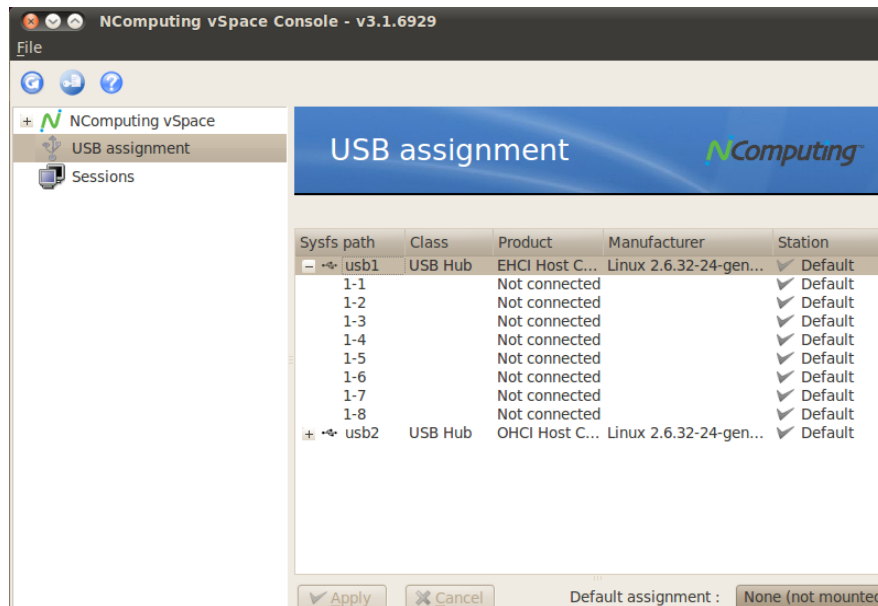


Figure 45 – USB assignment screen

To identify the Linux port that you wish to assign to a particular Access Device or Station, insert a USB memory device into the physical USB port you wish to use for that station and click the Refresh button on the USB assignment toolbar. (The refresh button is denoted with curved arrow, and the button is located to the left of the toolbar's Question Mark button.) Clicking "Refresh" updates the USB connectivity information list and causes the new device to appear in the list.

Double click on the "Default" item corresponding to the USB port you've just identified and select the "Session" to which you wish to assign the port.

Note: The definition for the "Default" setting for this Ubuntu installation is stored in the "vspace.com" file located at:

```
/etc/ncomputing/vspace.com
```

Port defaults are specified by the following numeric convention:

- 0 None (device will not be mounted)
- 2 Mount device to Host station/session
- 3 Mount device Shared read-write
- 4 Mount device Shared read-only

After all specific USB assignments have been made using the NComputing Administration Console, those device-specific assignments are then stored in the "usb.com" file located at:

```
/etc/ncomputing/usb.com
```

USB 1.1 devices and USB 2.0 devices show up in the assignment screen under two different device types.

- USB 1.1 devices will be shown under a "UHCI Controller" designation in the Product column
- USB 2.0 devices show with the "EHCI Controller" designation in that same Product column.

To ensure a device plugged-in to a physical USB port gets assigned to the correct session/station – regardless of whether the device is USB 1.1 or USB 2.0 – the physical port must be double logically identified using both the USB 1.1 device and then using a USB 2.0 device. Then the physical port must be logically "double assigned" under both the "UHCI" and the "EHCI" controller designations.

Uninstalling vSpace

Uninstalling NComputing's vSpace software can be done using the standard Ubuntu tools. For example, the Synaptic Package Manager will remove the software. You can locate the vSpace software by searching on the word vspace.

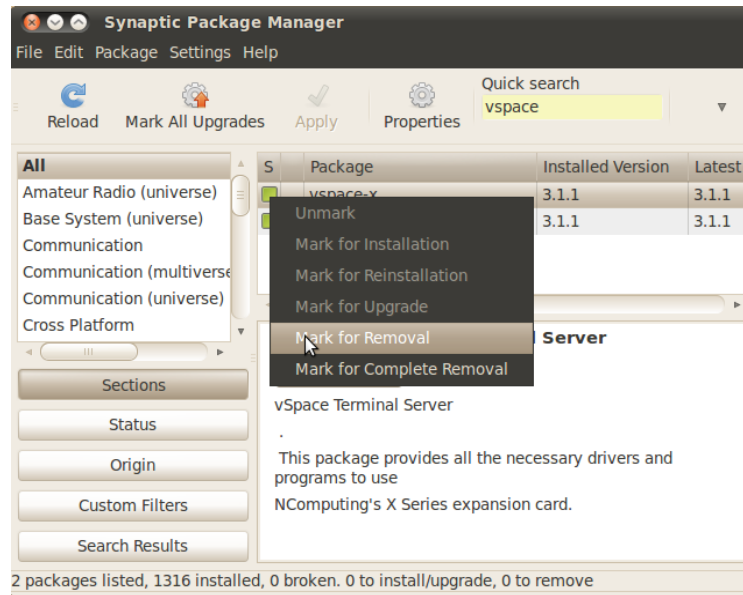


Figure 46 – Mark vSpace package for Removal

If you mark "vspace-x" for removal, the package manager will automatically mark "vspace-x-os" to be removed as well.

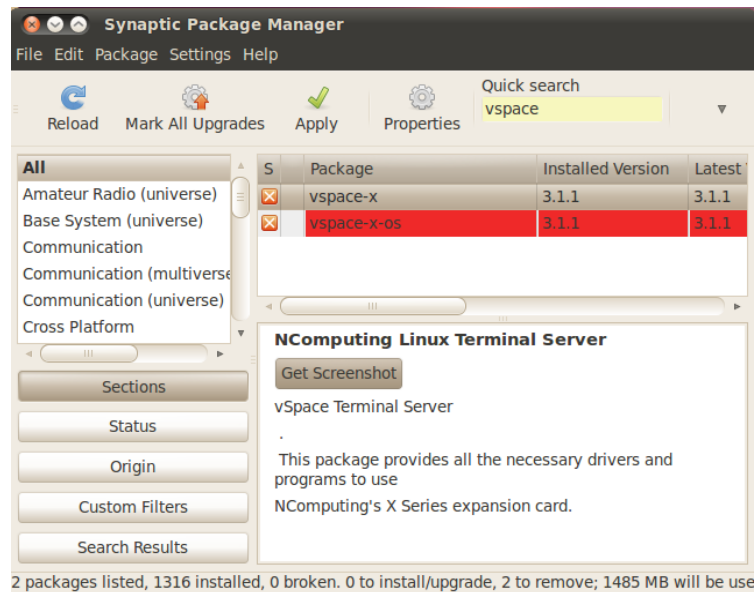


Figure 47 – Uninstalling X-series vSpace for Linux

GPL Declarations

NComputing vSpace software for Linux is distributed with some free software that includes EEVDEV (an extension to EVDEV) and NCXHCI (an extension to USBIP), both present in the additional software package called “Multi-user Extensions for Linux.” The aforementioned software components are free (see <http://www.gnu.org/philosophy/free-sw.html> for more details) software programs developed by the Free Software Foundation, a separate not-for-profit organization without any affiliation to NComputing, Inc. As part of the distribution of the vSpace software for Linux you were granted a license to the free software under the terms of either the GNU General Public License or GNU Lesser General Public License (“Licenses”; copies of which are available from <http://www.gnu.org/licenses/licenses.html>).

Further, for at least three (3) years from the date of distribution of the applicable product or software, we will give to anyone who contacts us at gplcoderequest@ncomputing.com, for a charge of no more than our cost of physically performing source code distribution, a machine-readable copy of the complete corresponding source code for the version of the software that we distributed to you. For additional information refer to this page on the NComputing website: www.ncomputing.com/gplcodedownload

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