NComputing vSpace Server 8.3 for Windows

Quick Installation Guide

Document version 1.0

October 1, 2015

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1. Introduction

1.1. Purpose of the document

The purpose of this document is to provide instructions on how to quickly install the vSpace Server 8.3 software on a freshly installed Windows Server.

Important note: If you are going to upgrade to version 8.3 from any previous version of vSpace Server please refer to vSpace Server 8.3 Software and Firmware Upgrade Guide for detailed information how to properly perform the upgrade.

1.2. Intended audience

NComputing vSpace Server administrators, technical support engineers, system engineers.

1.3. Document history

Document version	Editing start date	Release date
1.0 (VSS08030212QIG01)	September 30, 2015	October 1, 2015

1.3.1. Change log

Document version 1.0

Initial version of the document.

1.4. Glossary/Definitions

vSpace Server – computer system running the NComputing vSpace Server software.
vSpace Client – computer system running the NComputing vSpace Client software.
Access Device – hardware device containing an embedded version of vSpace Client.

1.5. How to use this document

Please review the 'vSpace Server 8.3 Release Notes' section to find information about supported operating systems and access devices. The Release Notes section also contains information about new features and bug fixes introduced in this release, as well as the information about known issues and limitations.

The 'vSpace Server 8.3 Installation' section contains a step-by-step guide how to quickly install the vSpace Server software.

1.6. References

For more information please refer to:

- vSpace Server 8.3 Software and Firmware Upgrade Guide

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- L300 and L350 Ethernet Virtual Desktops with vSpace Server – User Manual
- vSpace Server 8.3 Video Tutorials

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2. vSpace Server 8.3 Release Notes

2.1. General Release Information

Product: NComputing vSpace Server for Windows

Version: 8.3.2.12

Supported Operating Systems*:

- Microsoft Windows Server 2008 R2 SP1
- Microsoft Windows MultiPoint Server 2011
- Microsoft Windows Server 2012
- Microsoft Windows MultiPoint Server 2012
- Microsoft Windows Server 2012 R2 U1
- Microsoft Windows 7
- Microsoft Windows 8.1

Supported NComputing Access Devices:

- L250, L300 and L350 (L-series) with firmware version 1.11
- vSpace Client for Windows**, version 1.6.2 and 1.7.0

*For licensing details, see: http://www.ncomputing.com/mslicensing.

**vSpace Client is supported for desktop session delivery only and does not include the management options available for other access devices.

Supported Server OS variants include: Standard, Enterprise, and Datacenter.

Note that only 64-bit versions of Windows operating systems are supported.

The following notes contain important information. Please read this entire document to ensure that your installation and deployment process goes smoothly.

L-series Firmware

vSpace Server 8.3 comes with L-series firmware version 1.11. For correct operation with vSpace Server 8.3, and to ensure best performance and remote management, all L-series devices need to be upgraded to firmware version 1.11. Refer to 'vSpace Server 8.3 Software and Firmware Upgrade Guide' for information about upgrading the device firmware.

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M-series Firmware

vSpace Server 8.3 will be delivered with M300 firmware version 2.2, although M300 devices are not officially supported by vSpace Server 8.3. Multiple improvements have been incorporated in L-series firmware 1.11, which have not yet been merged into M300 firmware. NComputing cannot guarantee operation and satisfactory performance of M300 clients with 2.2 firmware when connected to vSpace Server 8.3. Later in 2015 a vSpace Server 8.3 maintenance release supporting the M300 will be made available that will incorporate an upgraded M300 firmware for vSpace Server 8.3.

vSpace Management Center Independence

vSpace Server 8.3 incorporates direct management of NComputing L-series access devices without the necessity to deploy any additional management server. vSpace Server 8.3 and L-series devices with 1.11 firmware are not supported by vSpace Management Center.

What's New

The following features have recently been added to vSpace Server:

- Support for the new L350 model with resolutions up to 1920 x 1200
- Multimedia enhancements
    - New video detection algorithms to enhance browsing experience and ensure proper video streaming area detection on Windows Server 2012, Windows Server 2012 R2 and Windows 8.1
    - DirectX based video data capture for more reliable video streaming with Windows Media Player on Windows Server 2012, Windows Server 2012 R2 and Windows 8.1
    - Optimized algorithm to better use the L-series client side video scaler for improved streamed video quality
    - Timestamping video and audio streams for better audio/video synchronization
    - Local buffering on L-series clients for smoother audio and video reproduction
    - Vorbis codec for better audio quality and lower network bandwidth consumption in future versions of vSpace Server clients
    - Diagnostic feature to simplify troubleshooting of video streaming issues
- Session performance and user experience improvements
- System stability improvements and bug fixes

Recently Fixed

The following known issues have been recently resolved:

- RDSL-4163 – 'USB Audio Redirection' option is missing in device properties in NC-Console.
- RDSL-5267 – Video streaming in Google Chrome browser works only in full-screen mode.
- RDSL-3772 – Audio and video might get slightly out of sync on Windows Server 2012 R2.
- RDSL-3593 – No audio is recording using sound recorder in Microsoft LifeChat headset.

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- RDSL-5295 – Webcams might not work when connected to L-series devices through a USB hub.
- RDSL-5270 – System sounds might not be reproduced in user's session when the 'USB Audio Redirection' option is enabled in L-series devices.
- RDSL-5225 – USB webcam connected to L-series devices might stop working when capturing video for 20-30 minutes.
- RDSL-3904 – Sound recording might not work when using USB webcam's integrated microphone.

Known Issues

- RDSL-4643, RDSL-5552 – Sound recording starts with some delay and ends before all the recorded voice data gets sent from the client to server.
- RDSL-5293, RDSL-5562 – Sound might be jerky in heavy network conditions when the 'USB Audio Redirection' option is enabled.
- RDSL-5564 – User password length for Automatic Login is limited to 15 characters.
- RDSL-5293 – Sound on USB speaker might be jerky when playing a full-screen video on L-series with the 'USB Audio Redirection' option enabled.
- RDSL-5268 – After few minutes of video reproduction the sound might get broken in Google Chrome browser.
- RDSL-5266 – Some USB CD-ROM drive models might not work when connected to L-series devices.
- RDSL-4835 – vSpace Server software must be installed from system administrator's account. Only belonging to Administrators group, is not enough.

Additional Notes and Workarounds

- **The 'USB Audio Redirection' option on L-series firmware**

  By default the "USB Audio Redirection" option in the L-series firmware is not enabled. vSpace Server sessions will default to use the 'NComputing virtual audio device' for playback and recording of locally connected USB headset (or other USB audio device) to an L-series client . This is the simplest and recommended setup. In this case when both USB and analog headset are simultaneously connected to an L-series client, the client device will default to use the connected USB headset for all audio playback and recording.

  With "USB Audio Redirection" enabled vSpace provides redirection of the USB audio device to the host Windows server and uses the host servers appropriate Windows audio device driver for playback and recording to and from USB audio devices that are connected to an L-series device. In this case the users Windows session will report the USB audio device name in the Windows device manager alongside the 'NComputing virtual audio device'.

  With the 'USB Audio Redirection' option enabled the user in his/her vSpace Server session can access two audio devices:

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1) The 'NComputing virtual audio device' (with input/output assigned to the L-series' integrated audio jacks), and

2) The locally connected USB audio device with its original name.

Using a USB headset (or other USB audio device) with the 'USB Audio Redirection' option turned on usually allows a higher audio sampling rate (which should result in improved sound quality), but also consumes increased network bandwidth as larger amounts of audio data are required to be transferred between the vSpace Server and the client device. As USB audio devices tend to be timing sensitive, the sound may occasionally get choppy or stutter if the network is not able to sustain the audio data traffic data rates in a busy network environment.

- **Truncation of the last few seconds of sound recording**

  Under certain system and network conditions, when recording sound without enabling the 'USB Audio Redirection' option, the recording start time may be delayed and the last few seconds of the recording might be truncated. This happens, because the client device buffers voice data prior to it being sent to vSpace Server. The keyboard and mouse events however will be sent immediately, without buffering. This results in the sound recording application to receive the "stop recording" event before receiving all the recorded data. To avoid the possibility of truncated recordings \ users should wait a second or two after finishing the recording before stopping a recording. To minimize this effect the UseAdvancedMicThread REG_DWORD value can also be set to 0 in the HKLM\SYSTEM\CurrentControlSet\Control\Multiuser registry key on the vSpace Server.

- **Google Chrome browser command line option**

  To avoid sound problems (sound breaks or stuttering), when using the latest version (45 or newer) of Google Chrome web browser, the --force-wave-audio option can be added to Chrome's command line.

- **HTML5 video playback with Internet Explorer 11**

  To ensure successful playback of HTML5 videos on Windows Server 2008 R2 the Desktop Experience feature and an update for the Desktop Experience Decoder must be installed. See: https://support.microsoft.com/en-us/kb/2483177 for more details.

- **Video output configuration of the VLC Media Player**

  For proper playback of video files with the VLC Media Player, this player should be configured to use 'Windows GDI' or 'Direct2D' video output. This is especially important if vSpace Server is installed on a desktop version of Windows OS.

- **Power Plan settings of vSpace Server**

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When using vSpace Server, especially on desktop versions of Windows OS, the Power Plan settings should be configured in a way, which will never allow the hard disks to be turned off or the computer to enter the sleep or hibernation state after a period of inactivity.

- **Using a physical host with AMD/ATI GPU**

  When using a physical host with AMD/ATI GPU it's advisable to install the video driver only, without the Catalyst Control Center (CCC.exe) utility. This would prevent potential memory leak in AMD's Catalyst Control Center which may affect system instability.

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3. vSpace Server 8.3 Software Installation

New vSpace Server 8.3 installations should be performed on freshly installed Windows Servers. vSpace Server relies on Remote Desktop Services thus the Remote Desktop Services must stay enabled after vSpace Server installation to ensure correct system operation.

Any application software should be installed after completing vSpace Server installation and rebooting the system.

Refer to 'vSpace Server 8.3 Software and Firmware Upgrade Guide' for information about upgrading any previous vSpace Server version to vSpace Server 8.3.

3.1. Enabling Remote Desktop Services

When installing vSpace Server on a standalone Windows Server (not belonging to Active Directory domain) the Remote Desktop Services will be automatically enabled during vSpace Server installation.

When installing vSpace Server on a Windows Server joined to an Active Directory domain the Remote Desktop Services must be enabled prior to vSpace Server installation.

3.2. Launching vSpace Server Installer

To ensure successful installation the vSpace Server Installer must be launched from system administrator's account. Only belonging to the Administrators group is not sufficient. To verify whether the logged on user is a system administrator open the Command Prompt and invoke the `whoami /user` command:

```
C:\>whoami /user

USER INFORMATION
----------------

User Name   SID
=========== ============================================
vSpace\John S-1-5-21-3686465141-1345607283-3162306831-1002
```

The SIDs of system administrator accounts have the form of: S-1-5-21-<*domain-or-computer-ID*>-500. If the SID of the current user's account does not end with -500, the installation should be started from Command Prompt of a real system administrator's.

Determining which user is the system administrator (has SID ending with -500):

```
C:\>wmic useraccount get name, sid, status

Name           SID                                            Status
Admin          S-1-5-21-3686465141-1345607283-3162306831-500  OK
```

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```
Guest           S-1-5-21-3686465141-1345607283-3162306831-501  Degraded
HomeGroupUser$ S-1-5-21-3686465141-1345607283-3162306831-1003 OK
John            S-1-5-21-3686465141-1345607283-3162306831-1002 OK
Paul            S-1-5-21-3686465141-1345607283-3162306831-1005 OK
```

The Admin user in the above example has account's SID ending with -500 and is the real system administrator.

Launching elevated Command Prompt for the system administrator (for the Admin user from the above example):

```
C:\>runas /user:Admin cmd.exe
```

(password must be entered when prompted)

To make sure the Command Prompt has been started for the right user invoke the `whoami /user` command again in the newly opened Command Prompt window:

```
C:\> whoami /user

USER INFORMATION
----------------

User Name    SID
============ ============================================
vSpace/Admin S-1-5-21-3686465141-1345607283-3162306831-500
```

Make sure the SID ends with -500. Otherwise the vSpace Server installation might fail.

System administrator can launch the MSI or EXE file with vSpace Server Installer to begin the installation.

To launch vSpace Server installer delivered in the form of an executable program (.EXE file) just start the program.

To launch vSpace Server installer delivered in form of a Microsoft Installer package (.MSI file) invoke the following command from elevated Command Prompt (using proper path and name of the .MSI file):

```
C:\>msiexec /i vSpace_LSeries_x64.msi
```

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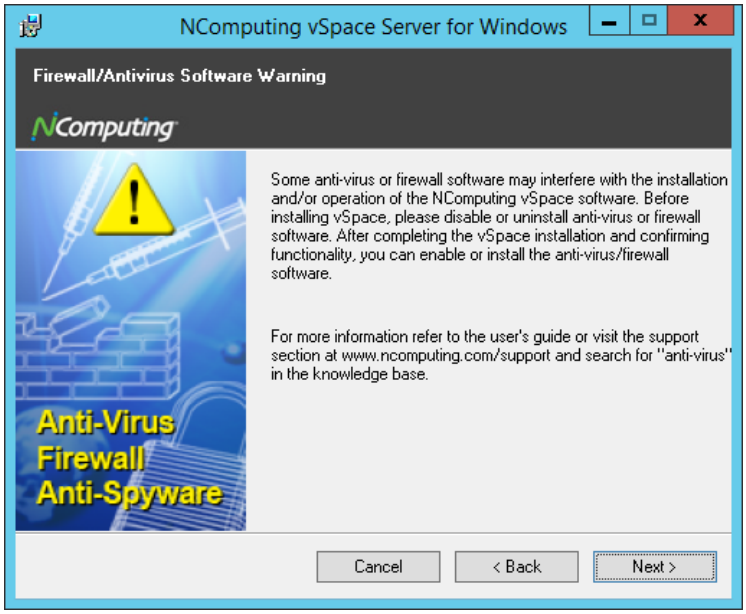
3.3. vSpace Server Setup Wizard

After launching vSpace Server Installer the **vSpace Server Setup Wizard** appears.

1. Click the **Next** button on the **Welcome to the NComputing vSpace Setup Wizard** screen.

2. It's advisable to install and third-party antivirus of firewall software after finishing the vSpace Server installation. Click the **Next** button on the **Firewall/Antivirus Software Warning** screen.



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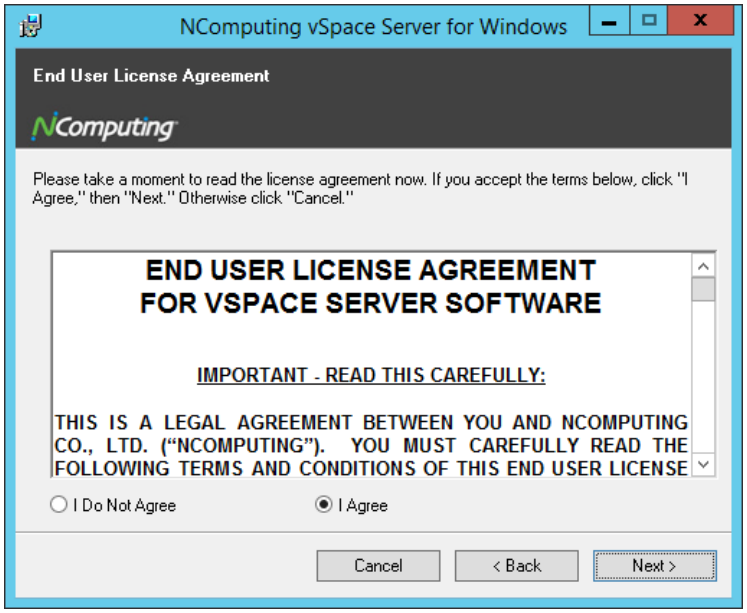
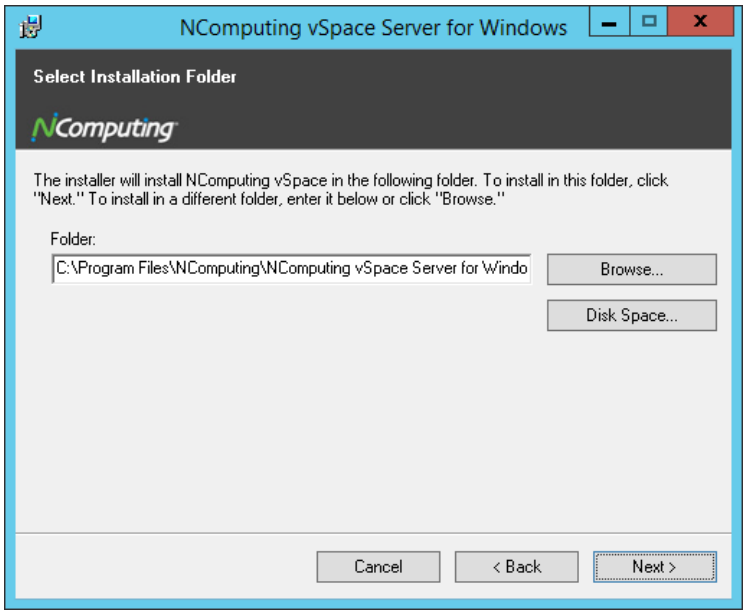
3. Review the license agreement and select the **I Agree** radio button to accept the terms of the vSpace Server software End User License Agreement and click the **Next** button on the **End User License Agreement** screen.



4. Accept the default one or enter the installation folder path and click the **Next** button on the **Select Installation Folder** screen.



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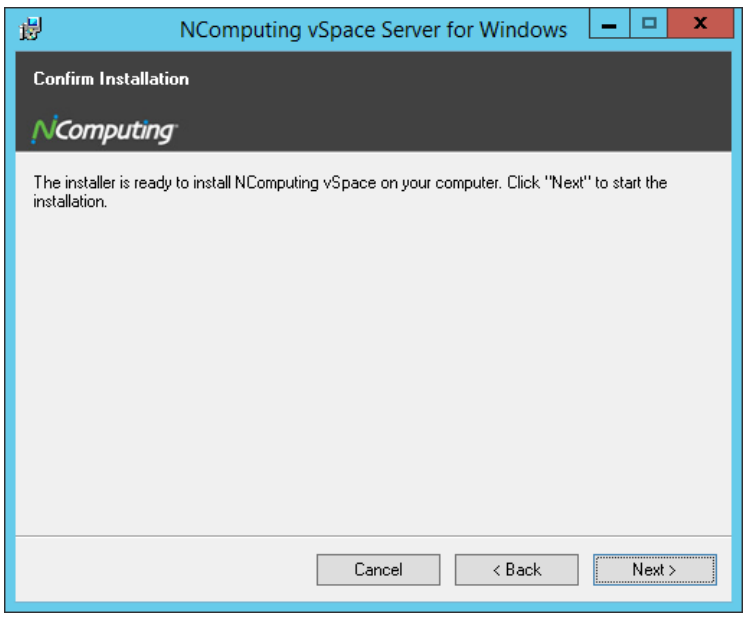
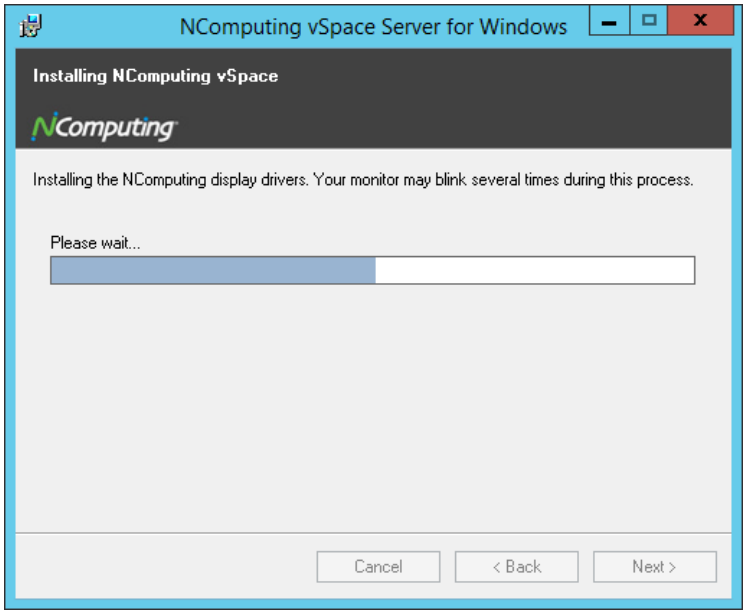
5. Click the **Next** button on the **Confirm Installation** screen to begin the installation.



6. Please wait while the NComputing vSpace Server software will be installed.



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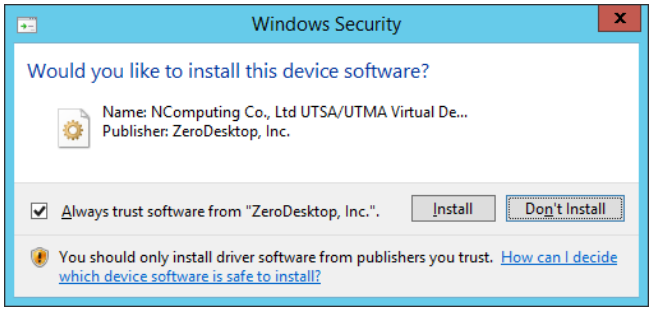
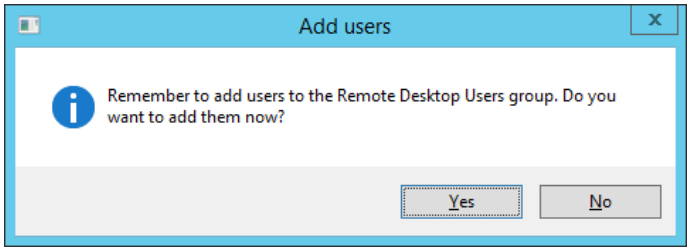
When prompted by the **Windows Security** click the **Install** button to allow installation of NComputing device drivers. Enable the **Always trust software from "ZeroDesktop, Inc."** option to avoid further prompts.



7. At the end the installation the Setup Wizard reminds that necessary user accounts or groups need to be added to the **Remote Desktop Users** group. Only members of this group have the rights to logon on the server remotely. To allow all users to logon remotely the **Authenticated Users** group or the **Everyone** group can be added. Click the **Yes** button to open the **Computer Management** tool and manage local users and groups. Click the **No** button to skips this step. Administrator can open the **Computer Management** tool at any later time to create new local user accounts or manipulate group's belongings.



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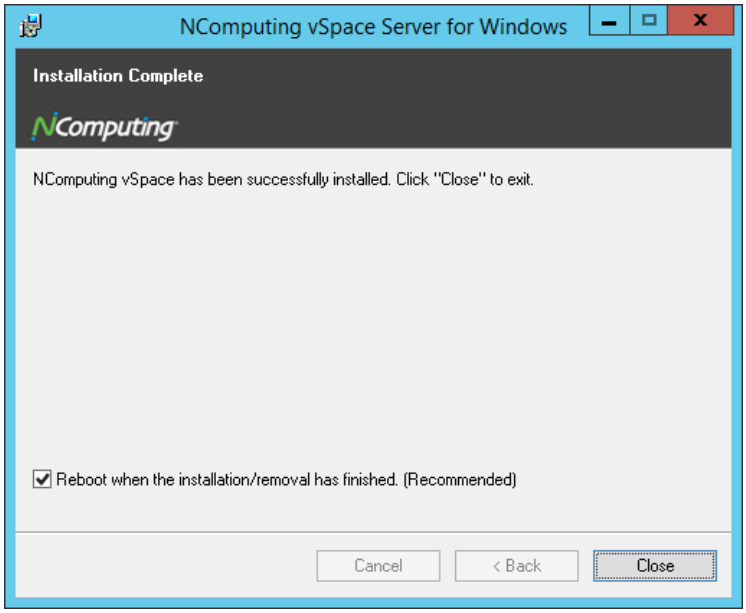
8. Click the **Close** button on the **Installation Complete** screen to close the **Setup Wizard**. The server must be rebooted to finish the vSpace Server installation. Activating the **Reboot when installation/removal has finished** checkbox causes the server to reboot immediately.



3.4. Remote Desktop licensing

To ensure proper operation of vSpace Server the underlying Remote Desktop Session Host must have properly configured licensing.

3.4.1. Configuring Remote Desktop licensing on Windows Server 2008 R2

1. Logon to the vSpace Server as an administrator.
2. Go to the **Administrative Tools** > **Remote Desktop Services** folder in **Start Menu** or **Control Panel** and open the **Remote Desktop Session Host Configuration** tool.
3. On the **Configuration for Remote Desktop Session Host server** page double click the **Remote Desktop licensing mode** item to open the **Properties** window.
4. Select **Per User** as **Remote Desktop licensing mode**.
5. Click the **Add…** button to add a **Remote Desktop license server**.

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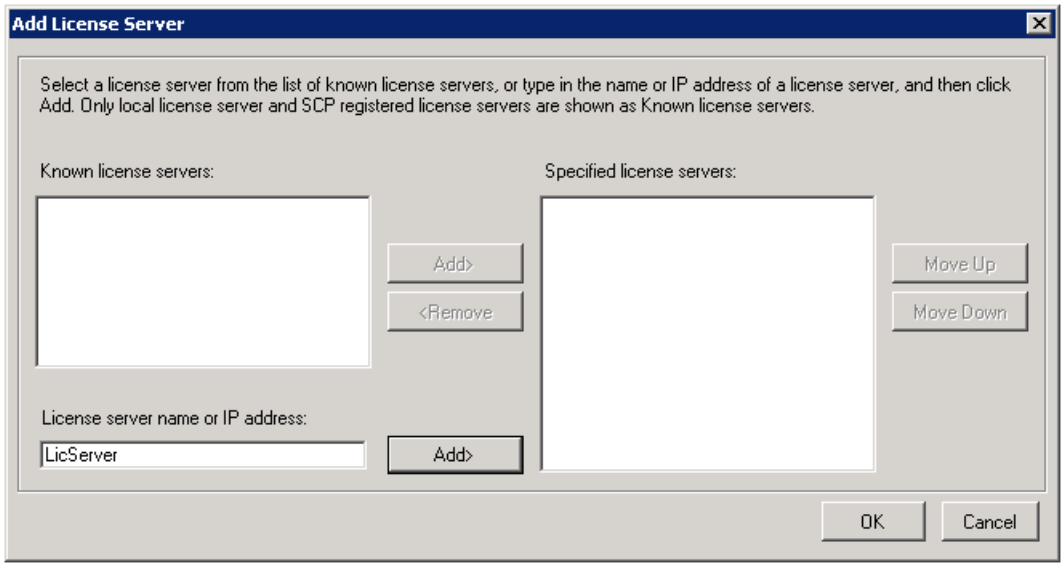
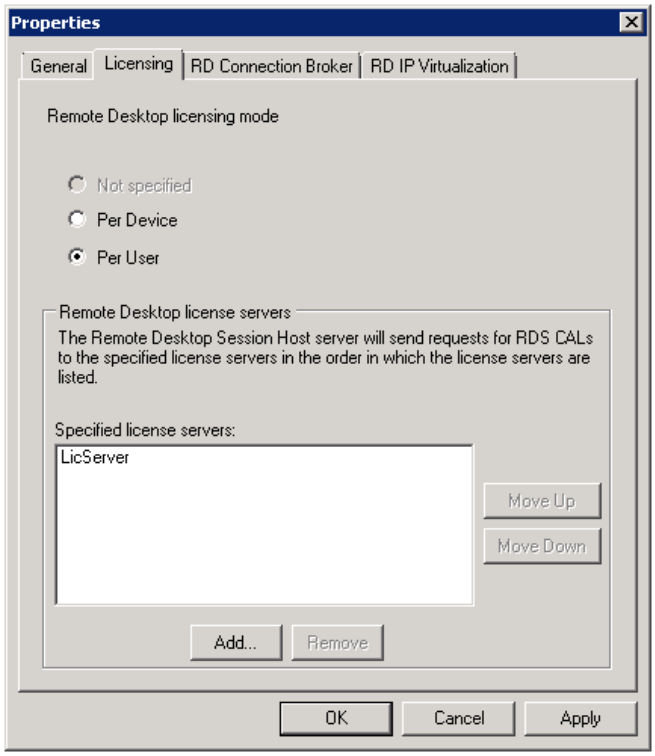
6. Enter the hostname, FQDN or IP address of your Remote Desktop license server into the **License server name or IP address** field or select a server on the list of **Known license servers**.



7. Click the appropriate **Add>** button.
8. Click the **OK** button to close the **Add License Server** window.



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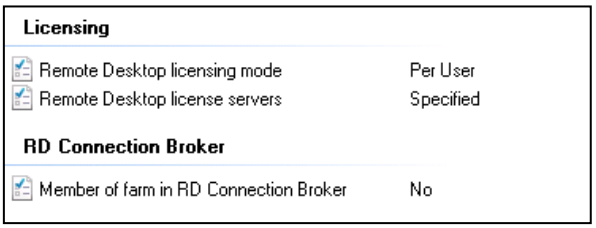
9. Click the **OK** button to close the **Properties** window.
10. Make sure the **Per User** option is listed for **Remote Desktop licensing mode** and **Specified** for **Remote Desktop license server** on the **Configuration for Remote Desktop Session Host server** page.



3.4.2. Configuring Remote Desktop licensing on Windows Server 2012 and 2012 R2

1. Logon to the vSpace Server as an administrator.
2. Click the **Windows PowerShell** icon or run `PowerShell.exe` to open the Windows PowerShell command prompt.
3. Invoke the following series of commands on the PowerShell prompt. Replace the `LicServer` with the name, FQDN or IP address of your Remote Desktop license server.

```
$obj = gwmi -namespace "Root/CIMV2/TerminalServices" Win32_TerminalServiceSetting
$obj.ChangeMode(4)
$obj.SetSpecifiedLicenseServerList("LicServer")
```

4. Reboot the server.
5. Logon to the vSpace Server as an administrator again and run the following PowerShell commands to verify the configuration and display the list of specified license servers:

```
$obj = gwmi -namespace "Root/CIMV2/TerminalServices" Win32_TerminalServiceSetting
$obj. LicensingType
$obj.GetSpecifiedLicenseServerList()
```

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4. Contacting Technical Support and Accessing Additional Resources

Visit the NComputing Knowledge Base at: http://kb.ncomputing.comfor more information, guides, and walkthroughs.

To request Technical Support, please visit the NComputing Support page at: http://www.ncomputing.com/support/overview.

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