Product Release Notes: NComputing vSpace® Software for the L-series version **L-4.9.5**

These release notes contain important information regarding the newest available vSpace software release for your L-Series NComputing desktop virtualization kits. Please read this entire document prior to installation.

Product: NComputing vSpace for L-Series devices

Version: L-4.09.005.11 (or L-4.9.5.11) for 32-bit versions of Microsoft Windows Server 2003 R2 and Windows XP*

Supported Hardware: NComputing L-series family of products** including the L300.

What's New – Summary:

This is a maintenance release that replaces the previous vSpace L-4.9.4.8 release. The following is a summary of the key changes, please read the rest of these Release Notes for more details on additional items that have changed and known errata:
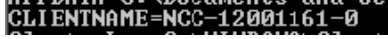
- **Improvements to USB support** for the L300 that increase USB transfer speeds by 3-4X and improve overall performance and stability

- **New firmware version 1.4.1 for the L300** access device with improvements to USB support, to network packet handling, and to the device's user interface.

- **Video streaming improvements:** added scroll protect feature and replaced "blue flash" with much less noticeable black flash.

- **Improved MSI installer** – eliminates errors that would occasionally occur when installing vSpace virtual device drivers and simplifies the installation to only require a single .msi file

- **New error messages that assist troubleshooting**: when L-series devices cannot connect to a vSpace host, in most cases a text message will now be displayed describing the problem (e.g. "trial license expired") – instead of only displaying a black screen

Important notes and tips on this release:

- **Upgrading an existing L-series vSpace host:** to upgrade from the previous vSpace L-4.9.4.8 release, simply run the new .MSI installer for L-4.9.5.11. on top of the existing installation. Note however, that if you are using ANY beta version of software (e.g. L-4.9.5.7) you must first uninstall the beta and then run the new .msi installer for L-4.9.5.11. The vSpace L-4.9.5.11 installer will notify you of this if you try to install on top of a beta vSpace version. Also note that you will also need to run the registration wizard again, if you updated from beta software.

- **Registration Required:** All vSpace releases include a trial license and must be registered to allow L-series device operation beyond 1 hour of session time. If you are updating from a previous registered vSpace version and chose to uninstall its license information during the update, you must run the Registration Wizard and register this version before your L-series devices will be able to connect to this host.

- **Update of L300 Firmware Required:** This release includes new firmware for the L300 access device (firmware version 1.4.1). You need to update the firmware on your L300 devices to benefit from all the improvements in this version of vSpace. (Once you update your firmware, you must use this latest vSpace release, otherwise USB will not function). Note that if your L300s have a very old version of firmware, you may need to perform the update process twice in order to get to firmware version 1.4.1 (you can check the firmware version from the NCconsole at C:\Program Files/NComputing/NComputing vSpace/NCCON.exe or by viewing the Information screen in the L300 firmware interface). If after your first firmware update you see that the device has not updated to 1.4.1, simply repeat the firmware update process (either manually from the L300 device or "pushed" from the NCconsole).

- **Do not install on a system previously used as a U-series or X-series host:** This release is only intended to be installed on a clean OS or to upgrade a current L-series vSpace host. Do not install it on an OS where vSpace for the U- or X-series was previously installed.

- **Escaping out of Autoconnect:** When autoconnect is enabled and you wish to access the L300 setup screens, use the "Esc" key during the L300 boot cycle to exit the autoconnect process and reach the device setup screens.

- **Memory usage:** Certain applications can negatively affect the maximum supportable number of users in 32-bit Windows. Please be aware that Windows Server 2003 and

Windows XP have a 536 MB paged memory limit, and you may see memory usage rise above 515MB while attempting to connect over 25 users. For best performance, we recommend maintaining a host user count allowing system paged memory usage to remain below 515MB.

Additional details on changes from prior release:

- The firmware for the L300 has been updated from version 1.3.5 to 1.4.1 in this release. You must perform the firmware update to take advantage of the improvements that include:

    o Improvements to USB device support for faster transfers (e.g. 3-4X faster file transfers from USB flash disks)

    o Faster enumeration of USB devices

    o Improved the graphical user interface on the Group Management screen – makes organizing hosts into groups much easier and intuitive.

    o Reduced the number of mouse events sent to the host to optimize network traffic and minimize host memory queuing.

    o Improved network performance with better packet handling and sizing.

- Resolution changes from inside a session: Fixes were added for Microsoft KB patches that prevented setting screen resolution within a session (KB2479628 and KB2506223). Also, resolution changed inside a session is no longer saved to the L300 device when you log off. This prevents changes made inside a session from bypassing L300 password protection.

- When installed on Windows Server 2003, this vSpace release generates a unique ClientName environment variable for each user session. (Example screenshot when accessed from a session command line = `CLIENTNAME=NCC-12001161-0`) On a Windows XP system, the ClientName environment variable is always set to "Console."

- Video Acceleration Scroll Protection: Users scrolling an application screen up and down (or a widget scrolling text sideways) can sometimes cause vSpace to incorrectly try to stream the window, resulting in occasional screen "flickering." The ScrollProtectNameList Registry entry was added to alert

vSpace that a particular application needs additional checking before a video streaming decision is made. To use this feature, add the application's executable name (separated by semicolon, i.e, "firefox.exe;excel.exe") to the following registry entry:

> [HKEY Local Machine > System > CurrentControlSet >Control > Multiuser > ScrollProtectNameList

- Windows Media Player and some online media players such as YouTube would speed up a video if the video was set to "Mute" on previous versions of vSpace. This version maintains normal time when the audio signal is muted.

- Resolved issues associated with an "HPVCARD" error that prevented sessions from running.

- Set the logon screen session refresh timeout to not refresh every 2 minutes as on prior releases. The default value is now 24 hours.

- With some USB devices, Windows explorer would slow down on the host and/or on stations when the device was plugged into the host or a device – this issue has been resolved.

- Added registry option that will allow selecting whether the USB devices connected to an L300 should be loaded after the connection is made to the session or after full user login. The Registry setting is in:

  HKLM\SYSTEM\CurrentControlSet\Control\Multiuser\LoadUSBAfterLogon

  > 0 - means load usb during session connection (before logon)
  > 1 - (or anything other than 0) - means to load USB after the user logs on. This is the default value.

- Removed the "Cancel" button from the uninstaller to prevent a possible BSOD if the cancel was attempted during the uninstall. The uninstaller will also remove the software license without prompting (updates do not require running the uninstaller).

- When a video or Flash stream starts, you may see a very brief "black flash" where the video stream will play (changed from previous "blue flash" to minimize visual impact)

Errata Items

- Video Streaming: the L300 can support one transcoded stream at a time per device

  o Video: only the first video using DirectShow in a user's session will stream to the L300, subsequently launched

video players cannot be accelerated simultaneously. The first streaming video player for a given session must be exited to release the streaming DirectShow pipeline.

- o Flash acceleration is more dynamic, if a second video is played and covers the previous Flash window, the streaming pipeline will automatically switch to the video "on top"

- o If you overlay other windows on top of a video that is streaming the information in the window on top may become distorted.

- Pointer, mouse and keyboard options in the Control Panel may not apply to a given L-series configuration.

- Prior to logging in, the keyboard "Num-lock" key should be set to light up the respective LED on the keyboard. This will match the vSpace default setting of Num-lock being on when the session starts (defaults for the session for CAPS-lock and SCROLL-lock are set to off). If the setting prior to login does not match the session default, then the lock-key LED indicators could be reversed from the actual state in the session. You can change the session default setting for a station from the NCTray utility.

- "Remote Desktop Users" group message when installing vSpace on Windows XP: If you encounter a message about needing to add users to the Remote Desktop Users group, simply click "Next" and ignore the information.

- In some cases, if a USB storage device is plugged into an L-series device during an active session, and then the session is disconnected (powered off or disconnected by going to START>DISCONNECT) and then reconnected to the same session, then the USB storage device may not be recognized. If you encounter this situation, log-off the station and log back in.

- Setting the login password for the L300 from the vSpace Console (MMC) console is not supported. Only the username setting will be written to the L300 from the console (vSpace Console>Hardware Settings(LAN/local)>click on Device>Change connection settings>edit main profile>edit username/password).

- In some cases, assignment of USB devices connected to the host may require a reboot of the system to take effect.

*Windows Server and appropriate client access licenses are required for multiuser environments using NComputing products. Client operating systems such as Windows XP, Windows Vista and Windows 7 are appropriate for single user applications such as 1:1 VDI, display systems and remote access. Additional information on licensing is available at www.ncomputing.com/mslicensing including frequently asked questions.

**Older L100 units (those requiring manual entry of serial numbers) are not supported. The last version to support these units is vSpace 4.4.7.

Contacting Technical Support and Additional Resources
- Visit NComputing's Knowledge Base at http://www.ncomputing.com/support.aspx for more information.
- To request Technical Support, please visit the NComputing Support page at http://www.ncomputing.com
- For general information about NComputing please visit us at http://www.ncomputing.com

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All NComputing software is subject to NComputing intellectual property rights and may be used only in conjunction with Genuine NComputing hardware and in accordance to the NComputing End User Licensing Agreement and Terms of Use.

GPL Declarations
The NComputing L300 access device contains – in part – some free software (software licensed in a way that ensures your freedom to run, copy, distribute, study, change and improve the software). This free software is also contained in the L300 firmware update files that are distributed together with NComputing vSpace software installation packages that are expressly for the L300. The free software contained within the L300 firmware includes a version of X-LOADER, U-BOOT, LINUX, LIBSYSFS, LIBUCI, LIBUSBIP, ETHTOOL, UCLIBC, QT and BUSYBOX. The aforementioned software components are free (see 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 an L300 device and the associated vSpace software installation package, 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 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 complete machine-readable copy of the complete corresponding source code for the version of the software that we distributed to you. In addition, you or anyone else may download source code for this free software directly from the NComputing website at: www.ncomputing.com/gplcodedownloadcenter

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