vSpace Pro 11 for Windows
(version 11.2.0)

RELEASE NOTES

July 18, 2018

1875 SOUTH GRANT STREET | SUITE 570 | SAN MATEO | CALIFORNIA 94402

RODUCT RELEASE NOTES:
NCOMPUTING VSPACE PRO 11 (VERSION 11.2.0)

Product: NComputing vSpace Pro 11 for Windows

Version: 11.2.0

Supported Operating Systems*:

- Windows Server 2016
- Windows Server 2012 R2 U1
- Windows Server 2012
- Windows Server 2008 R2 SP1
- MultiPoint Services Role – Windows Server 2016
- Windows MultiPoint Server 2012
- Windows MultiPoint Server 2011
- Windows 10 (64-bit)
- Windows 8.1 (64-bit)
- Windows 7 SP1 (64-bit)

Supported NComputing Access Devices and Clients:

- RX300 with firmware version 3.2.13
- L250, L300 and L350 (L-series) with firmware version 1.15.1
- M300, MX100S and MX100D (M/MX-series) with firmware version 2.4.8
- vSpace Pro Client for Windows**, version 2.5.1
- vSpace Pro Client for Chromebook**, version 1.2.0.27

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

** vSpace Pro Client for Windows and vSpace Pro Client for Chromebook provide desktop session delivery only and do 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.

ABOUT THIS RELEASE:

vSpace Pro 11, version 11.2.0, is NComputing's new main vSpace Pro product release which replaces the vSpace Pro 10 family as well as previous vSpace Pro 11 releases.

vSpace Pro 11 version 11.2.0 permanently unlocks many of the premium features found in the previous vSpace Pro releases, delivering more benefits and new features to customers. vSpace Pro 11 is free to download and use.

NEW PRODUCT FEATURES, CHANGES, AND IMPROVEMENTS:

Following are the new features, changes, and improvements introduced in version 11.2.0:

vSpace Server component:

- vCAST Streaming is now a standard feature (i.e., free).

  vCAST Streaming reduces server-side CPU usage when users watch web videos like YouTube or play local media content and does so without the need for expensive GPUs. This technology results in higher quality video streaming without CPU bottlenecks, allowing for more concurrent users on your system. Two flavors of vCAST Streaming are available:

  - vCAST Web Streaming: provides client-side rendering of HTML5 video contents (e.g., YouTube) played using the Google Chrome browser.
  - vCAST Media Streaming: provides client-side rendering of H.264-encoded video content played in Windows Media Player or VLC Player.

  Click here to learn about different NComputing thin clients' support of vCAST Streaming.

- Session Broadcasting is now a standard feature (i.e., free).

  Session Broadcasting provides screen sharing functionality, allowing one screen to be broadcast to others. This allows an instructor to broadcast his or her screen, or a student's screen, to other users connected to the same vSpace Server. Great for presentations, sharing local or web videos, or highlighting other content within a group.

  Click here to learn how to.

- New session "Block All" as a standard feature (i.e., free).

  Blanking all active session provides instructors or team leaders instant control to focus attention of the audience. The user session's screen is blocked and keyboard and mouse activity is disabled while blanking is in effect.

  Click here to learn how to.

- Access vSpace Multiview window with a passcode from a non-admin Windows user account:

  - Multiview, a popular feature from vSpace 8, is back in vSpace Pro 11. MultiView provides a dashboard of active session thumbnails,

allowing a lead user to message other users, or take control of their sessions.

  - With vSpace Pro version 11.2.0 the Multiview window can now be accessed from non-admin account which a valid passcode (set by the admin). This further expands the use cases for classrooms and workgroup environment to allow non-admin users to manage other user sessions.

  - Click here to learn how to.

- Support of Arduino and Microbit boards (e.g., for student's coding classes) with NComputing thin clients in the vSpace environment. The COM Ports Management option must be enabled in vSpace Console.

  Click here to learn how to.

- Extended smart card support for RX300 and vSpace Pro Client for Windows is now a standard feature (i.e., free):

  - If your organization requires smart cards for single sign-on, access control or other security-related measures, vSpace Pro version 11.2.0 provides enhanced smart card support for both RX300 and vSpace Pro Client for Windows with no limit on the number of smart card readers can be connected per vSpace Server. In this case, functional (native, virtual-channel-based) redirection of smart card readers has been added to overcome the limits of the Generic USB-based smart card reader redirection implemented in vSpace Pro 10.x and vSpace Server 8.4.

  - Other thin clients (L/M/MX-series thin client) still have the restriction of a maximum of 10 connected smart card readers per vSpace Server.

  - Click here to learn more on how to configure smart card reader support for different NComputing thin client families.

Other vSpace Server component improvements since vSpace Pro 10.5.1:

- RDSL-7096 – Further enhanced UXP 2.0 with adaptive UXP compression based on a combination of increased compression level and longer screen refresh to further reduce network bandwidth while still providing great user experience (vSpace Pro version 11.2.0).

- RDSL-7110 – Added WACOM and Topaz signature pads support on RX300 thin client through generic USB redirection; please refer to "Additional Notes and Workarounds" section for further details (vSpace Pro version 11.2.0).

  Click here to learn how to.

- RDSL-6911 – Added support for Arduino and Microbit development boards connected to NComputing thin clients (vSpace Pro version 11.2.0).

- RDSL-7106 – vSpace server side enhancement to support higher DPI scanner resolution (vSpace Pro version 11.2.0)

- RDSL-6994 – Added registry entries to enable application auto-start on desktop operating systems.
- RDSL-6973 – "Load USB after logon" parameter added to RX300 performance profiles.
- RDSL-6928 – Automatic backup of vital vSpace Pro registry keys to minimize the risk of registry key corruption caused by major Windows OS updates.
- RDSL-6906 – General UXP audio/video playback performance improvements in higher display resolutions.
- RDSL-6884 – Removal of multiple instances of the virtual display card to speed up loading of some applications.
- RDSL-6856 – Higher MOJO compression rate.
- RDSL-5344 – Improved virtual display driver loading procedure to speed up loading of some applications.

vSpace Console improvements since vSpace Pro 10.5.1:

- Code refactoring providing better performance, improved stability, and extended scalability (vSpace Pro version 11.2.0)
- VCON-929 - Security enhancement in CMserver.exe; disabled SSL3, TLS 1.0 and TLS 1.1, and ONLY enabled TLS 1.2 (vSpace Pro version 11.2.0).
- VCON-930 – Security enhancement in CMServer.exe; disabled insecure ciphers in TLS 1.2 (vSpace Pro version 11.2.0).
- VCON-932 – Added Multiview window access in non-admin mode with passcode authentication (vSpace Pro version 11.2.0).
- VCON-923 - Added new session “Block All” and “Unblock All” features in Multiview window; the user session’s screen, keyboard and mouse will be blocked while blanking is in effect (vSpace Pro version 11.2.0).
- Device list is auto refreshed during launching of vSpace Console (vSpace Pro version 11.2.0).

RX300 firmware improvements since firmware version 3.1.3:

- RX-1300 - Enhanced password encryption for autologin (RX300 version 3.2.13)
- RX-1297 – Enhanced scanner support (RX300 version 3.2.13)
- RX-1291 – Support new “Blank All” feature from Multiview to block screen, keyboard and mouse (RX300 version 3.2.13)
- RDSL-7110 – Added WACOM and Topaz signature pads support on RX300 thin client through generic USB redirection; please refer to “Additional Notes and Workarounds” section in the end for further details. (vSpace Pro version 11.2.0)
- Support for PMC device management.
- Integrated VERDE VDI Client with support for UXP and RDP protocols.
- Support for NComputing Pi Zero-based Secondary Display Adapters (SDA) with firmware version 0.9.3 or higher.

- Support for vCAST Windows Media Player Streaming, in addition to vCAST VLC Player Streaming (up to version 2.2.6).
- Functional (native) redirection of ACS and CCID-compliant smart card readers; please refer to the “Additional Notes and Workarounds” section below.
- Granular control of peripheral devices redirection.
- Support for external WiFi adapters; please refer to the “Additional Notes and Workarounds” section below.
- Improved power button behavior when ‘sleep mode’ is active.

BUG FIXES (SINCE VSPACE PRO 10 VERSION 10.5.1):

The following vSpace Pro (vSpace Server component) issues have been fixed in this product version:

- RDSL-7115 – Fixed the issue where the USB smart card reader attached to L300 device does not work properly (vSpace Pro version 11.2.0)
- RDSL-7116 - Created flag in registry for smart card reader compatibility mode using DATEV application; the default registry flag is SupportDATEV = 0 for maximum smart card application compatibility mode. Set SupportDATEV = 1 if DATEV application is to be used for smart card reader.
- RDSL –7093 – Fixed the issue where the smart card readers are redirected to main host session instead of device session on Windows 10 version 1803 (vSpace Pro version 11.2.0)
- RDSL-7060 – Fixed vCAST web streaming issue on RX300 with Pi Zero SDA connected for dual display where the Chrome browser always showed “NComputing vCAST: error” message (vSpace Pro version 11.2.0).
- RDSL-7081 – Rare black screen issue when connecting to Windows 10.
- RDSL-7063 – BSOD in usbport.sys on Windows 10 Professional.
- RDSL-6979, RDSL-6980 – BSOD when trying to redirect from L300 the Identiv CLOUD (uTrust) 2700 F smart card reader.
- RDSL-6905 – vSpace Console: inability to connect to License Server.
- RDSL-6842 – Mouse pointer disappears in dual display sessions on Windows 10 1709.
- RDSL-6719 - Incorrect HORZSIZE and VERTSIZE values returned by the GetDeviceCaps API function for UXP sessions (which results with incorrect font spacing in some applications).
- RDSL-5151 – Slow startup of .NET applications.

The following vSpace Console issues have been fixed in this product version:

- VCON-931 – Fixed the incorrect message issue when attempting to change device settings (Failed to get settings Reason: Out of memory) (fixed in vSpace Pro version 11.2.0)
- VCON-924 – Fixed the issue where sometime after refresh of whole network, devices from outside the network are added to the device list (fixed in vSpace Pro version 11.2.0)

The following RX300 firmware issues have been fixed in this product version:

- RX-1287 – Fixed vCAST web streaming issue where after pause web videos on dual monitors cannot be synchronized (fixed in RX300 version 3.2.13).
- RX-1297 – Fixed scanner crash issue (fixed in RX300 version 3.2.13).
- RX-1285 – Fixed Gemalto PC/SC Bridge can't detect Yubikey smart card connected to RX300 (fixed in RX300 version 3.2.13).
- RX-1171 – Device gets stuck with black screen after logoff from session with USB headset connected.
- RX-1168 – Missing Bluetooth and WiFi interfaces in Raspbian Desktop Mode.
- RX-1134 - Device reboot is required to apply Enterprise WiFi related network changes.
- RX-1097 – Device does not refresh the IP address automatically from DHCP after physically changing connection to another subnet.
- RX-886 - Problems with firmware downloads through FTP proxy.
- RX-878 – Freeze during YouTube video playback.

The following L-series firmware issues have been fixed in this product version:

- TT-780 – L350 units hang with the mouse cursor in the middle of the screen and they remain unresponsive.
- TT-778 – Outdated SSH server.

KNOWN ISSUES:

- Please refer to https://support.ncomputing.com/portal/kb for known issue details.

GENERAL INSTALLATION INSTRUCTIONS:

New vSpace Pro 11 installations should be performed on machines with fresh installs of supported Windows OS versions. vSpace Pro 11 relies on Remote Desktop Services thus the Remote Desktop Services must remain enabled after vSpace Server installation to ensure correct system operation. When installing vSpace Pro 11 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 Pro 11 on a Windows Server joined to an Active Directory domain the Remote Desktop Services must be enabled prior to vSpace Pro 11 installation.

Any application software should be installed after completing vSpace Pro 11 installation and rebooting the system.

Refer to 'vSpace Pro 10 Quick Installation Guide' for more detailed installation instructions.

UPGRADING INFORMATION:

vSpace Pro 11 can only be installed on machines running supported Windows OS, where no vSpace Pro 10.x nor vSpace Server 8.x is installed, as upgrades from these versions are not supported. Upgrades from vSpace Pro 11.0 (version released to selected customers only) and 11.1 are supported.

RX300 FIRMWARE:

This vSpace Pro 11 comes with RX300 firmware version 3.2.13. For correct operation with this vSpace Pro 11 version, and to ensure best performance and remote management, all RX300 devices need to be upgraded to firmware version 3.2.13.

vSpace Console included in vSpace Pro 11 can only manage a subset of RX300 configuration settings. For full RX300 feature set management the separate PMC device management system should be used (requires active Annual Maintenance Program).

L-SERIES FIRMWARE:

This vSpace Pro 11 comes with L-series firmware version 1.15.1. For correct operation with this vSpace Pro 11 version, and to ensure best performance and device management, all L-series devices need to be upgraded to firmware version 1.15.1.

M/MX-SERIES FIRMWARE:

This vSpace Pro 11 comes with M/MX-series firmware version 2.4.8. For correct operation with this vSpace Pro 11 version, and to ensure best performance and remote management, all M/MX-series devices need to be upgraded to firmware version 2.4.8.

ADDITIONAL NOTES AND WORKAROUNDS:

- **Adaptive UXP compression**

  The Adaptive UXP compression uses a combination of increased compression level and longer screen refresh to reduce network bandwidth while providing great user experience.

  Following values in HKLM\SYSTEM\CurrentControlSet\Control\Multiuser registry key can be used to fine-tune the Adaptive UXP compression:

  - REG_DWORD AdaptiveCompression
    - When set to 1 (or absent) the UXP Adaptive Compression will be used (see below). This is the recommended setting.
    - When set to 0, the original UXP compression will be used (UXP protocol will behave like in vSpace Pro 10.5). This is NOT recommended.
  - REG_DWORD AdaptiveCompressionSkipper
    - When set to 1, the 2nd generation UXP Adaptive Compression will be enabled. This is the RECOMMENDED setting.
    - When set to 0 (or absent), the 1st generation UXP Adaptive Compression will be used. This is NOT a recommended setting.
  - REG_DWORD CompressionLevel2 and CompressionLevel3:
    - These 2 registries define the bitmaps compression level (the lower the value the more aggressive the compression level) when network bandwidth threshold value is exceeded. By default, CompressionLevel2 is set to 65 and CompressionLevel3 is set to 55.

- **RX300 support for external WiFi adapters**

  Following WiFi adapters have been tested and confirmed to work with RX300:

  - Adapters based on Realtek 8192CU, 8192EU, 8188CUS chipsets.
  - Sony UWA-BR100 802.11abgn Wireless Adapter (Atheros AR7010+AR9280).

  Other WiFi adapters are expected to work but have not been tested or confirmed by NComputing.

- **RX300 support for USB signature pad models (vSpace Pro 11.2 with RX300 firmware version 3.2.13):**

  Following are USB signature pad models which have been pre-configured in vSpace Pro 11.2 server with proper server isolation (i.e., user A will not see the signature pad connected to user B).

  On RX300 thin client, generic USB redirection policy must be applied to the connected signature pad for the peripheral to be recognized by vSpace. You can do so from RX300 setting menu -> peripherals -> enter the VID and PID of the connected signature pad so this peripheral will redirect to the vSpace Server.

- VID PID 056A:00A1 Model: WACOM STU-500
- VID PID 056A:00A2 Model: WACOM STU-300
- VID PID 056A:00A3 Model: WACOM STU-520A
- VID PID 056A:00A4 Model: WACOM STU-430
- VID PID 056A:00A5 Model: WACOM LCD Signature Pad STU-530
- VID PID 056A:00A6 Model: WACOM STU-430V
- VID PID 056A:00A7 Model: WACOM LCD Signature Pad STU-530V
- VID PID 056A:00A8 Model: WACOM LCD Signature Pad STU-540
- VID PID 056A:00A9 Model: WACOM LCD Signature Pad STU-541
- VID PID 0403:6001 Model: Topaz Signature Gem T-LBK462-BSB-R
- VID PID 06a8:0043 Model: Topaz Signature Gem T-L462-HSB-R

- **RX300 functional (native) redirection of smart card readers**

  Functional redirection of smart card readers leverages the PC/SC daemon and smart card reader drives embedded in the device firmware. Drivers for following smart card readers are present in the firmware and the following readers should work:

  - Readers supported by the ACS driver:
    - ACS ACR32 ICC Reader
    - ACS ACR3201 ICC Reader
    - ACS ACR33U-A1 3SAM ICC Reader
    - ACS ACR33U-A2 3SAM ICC Reader
    - ACS ACR33U-A3 3SAM ICC Reader
    - ACS ACR33U 4SAM ICC Reader
    - ACS ACR38U-CCID
    - ACS ACR3801
    - ACS ACR39U ICC Reader
    - ACS ACR39K ICC Reader
    - ACS ACR39T ICC Reader
    - ACS ACR39F ICC Reader
    - ACS ACR39U ID1 Card Reader
    - ACS ACR39U-SAM ICC Reader
    - ACS ACR3901 ICC Reader
    - ACS ACR83U
    - ACS ACR85 PINPad Reader
    - ACS ACR88U
    - ACS ACR89 ICC Reader
    - ACS ACR89 Dual Reader
    - ACS ACR89 FP Reader
    - ACS ACR100 ICC Reader
    - ACS ACR101 ICC Reader
    - ACS ACR102 ICC Reader
    - ACS ACR122U
    - ACS ACR1222 1SAM PICC Reader
    - ACS ACR1222 1SAM Dual Reader
    - ACS ACR1222 Dual Reader
    - ACS ACR1222 1SAM PICC Reader
    - ACS ACR1222 3S PICC Reader
    - ACS ACR123 3S Reader
    - ACS ACR123 PICC Reader
    - ACS ACR123US_BL

- ACS ACR125 nPA plus
- ACS ACR1251 1S CL Reader
- ACS ACR1251 CL Reader
- ACS ACR122U
- ACS ACR1251U-C Smart Card Reader
- ACS ACR1251U-C Smart Card Reader
- ACS ACR1251K Dual Reader
- ACS ACR1251 1S Dual Reader
- ACS ACR1251 Reader
- ACS ACR1251 CL Reader
- ACS ACR1252 1S CL Reader
- ACS ACR1252 CL Reader
- ACS ACR1252 USB FW_Upgrade v100
- ACS ACR1252U BADANAMU MAGIC READER
- ACS ACR1252IMP 1S CL Reader
- ACS ACR1255U-J1 PICC Reader
- ACS ACR1256U PICC Reader
- ACS ACR1261 1S Dual Reader
- ACS ACR1261 CL Reader
- ACS ACR128U
- ACS ACR1281 1S Dual Reader
- ACS ACR1281 CL Reader
- ACS ACR1281 Dual Reader
- ACS ACR1281 PICC Reader
- ACS ACR1281 Dual Reader
- ACS ACR1281 PICC Reader
- ACS ACR1281 Dual Reader
- ACS ACR1281 2S CL Reader
- ACS ACR1281 1S PICC Reader
- ACS ACR1281U-K PICC Reader
- ACS ACR1281U-K Dual Reader
- ACS ACR1281U-K 1S Dual Reader
- ACS ACR1281U-K 4S Dual Reader
- ACS ACR1283 4S CL Reader
- ACS ACR1283 CL Reader
- ACS ACR1283U FW Upgrade
- ACS ACR1311 PICC Reader
- ACS AET62 PICC Reader
- ACS AET62 1SAM PICC Reader
- ACS AET65 ICC Reader
- ACS AMR220 Reader
- ACS APG8201
- ACS APG8201-B2
- ACS APG8201Z
- ACS APG8201Z
- ACS CryptoMate64
- ACS CryptoMate (T1)
- ACS CryptoMate (T2)
- ACS ACR38U
- ACS ACR38U-SAM
- ACS AET65 1SAM ICC Reader

        - ACS CryptoMate
        - IRIS SCR21U
    - CCID-compliant readers (supported by ver. 1.4.28 driver):
        - Access IS ePassport Reader
        - Access IS NFC Smart Module
        - ACS ACR 38U-CCID
        - ACS ACR101 ICC Reader
        - ACS ACR122U PICC Interface
        - ACS ACR1251 Dual Reader
        - ACS ACR1252 Dual Reader
        - ACS ACR1255U-J1
        - ACS ACR3901U ICC Reader
        - ACS ACR39U ICC Reader
        - ACS APG8201 PINhandy 1
        - ACS APG8201 USB Reader
        - ACS CryptoMate (T2)
        - ACS CryptoMate64
        - ActivCard ActivCard USB Reader V2
        - ActivIdentity Activkey_Sim
        - ActivIdentity USB Reader V3
        - AK910 CKey
        - AK910 IDONE
        - Aktiv Co., ProgramPark Rutoken Magistra
        - Aktiv PINPad Ex
        - Aktiv PINPad In
        - Aktiv Rutoken ECP
        - Aktiv Rutoken lite
        - Aktiv Rutoken PINPad 2
        - Aladdin R.D. JaCarta
        - Aladdin R.D. JaCarta Flash
        - Aladdin R.D. JaCarta LT
        - Aladdin R.D. JaCarta U2F (JC602)
        - Aladdin R.D. JCR-770
        - Aladdin R.D. JC-WebPass (JC600)
        - Alcor Micro AU9520
        - Alcor Micro AU9522
        - Alcor Micro AU9560
        - ANCUD CCID USB Reader & RNG
        - appidkey GmbH ID100L-USB-SC-Reader
        - appidkey GmbH ID50 -USB
        - appidkey GmbH ID60-USB
        - ASK-RFID CPL108
        - Athena ASE IIIe
        - Athena ASEDrive IIIe Combo Bio PIV
        - Athena ASEDrive IIIe KB
        - Athena ASEDrive IIIe KB Bio PIV
        - Athena IDProtect Flash
        - Athena IDProtect Key v2
        - ATMEL AT90SCR050
        - ATMEL AT90SCR100
        - ATMEL AT91SC192192CT-USB ICCD reader

- ATMEL AT91SO CCID Smart Card Reader
- ATMEL AT98SC032CT-USB
- ATMEL VaultIC420 Smart Object
- ATMEL VaultIC440
- ATMEL VaultIC460
- Avtor SC Reader 371
- Avtor SecureToken
- Axalto Reflex USB v3
- BIFIT iBank2Key
- BIFIT iToken
- BIFIT USB-Token iBank2key
- Bit4id CKey4
- Bit4id cryptokey
- Bit4id Digital DNA Key
- Bit4id iAM
- Bit4id miniLector
- Bit4id miniLector-s
- Bit4id tokenME FIPS v3
- BLUTRONICS BLUDRIVE II CCID
- Broadcom Corp 5880
- C3PO KBR36
- C3PO LTC31 v2
- C3PO LTC32
- C3PO LTC36
- C3PO LTC3x USB
- C3PO TLTC2USB
- CASTLES EZCCID Smart Card Reader
- CCB eSafeLD
- charismathics plug'n'crypt CCID token
- Cherry GmbH SmartBoard XX1X
- Cherry GmbH SmartBoard XX33
- Cherry GmbH SmartBoard XX44
- Cherry GmbH SmartTerminal ST-1275
- Cherry GmbH SmartTerminal ST-2xxx
- Cherry GmbH SmartTerminal XX1X
- Cherry GmbH SmartTerminal XX44
- Cherry KC 1000 SC
- Cherry KC 1000 SC Z
- Cherry KC 1000 SC/DI
- Cherry KC 1000 SC/DI Z
- Cherry Smart Card Reader USB
- Cherry Smartcard Keyboard G87-1xx44
- Cherry SmartTerminal XX44
- Cherry TC 1300
- Chicony HP USB Smartcard CCID Keyboard JP
- Chicony HP USB Smartcard CCID Keyboard KR
- Chicony USB Smart Card Keyboard
- COVADIS ALYA
- COVADIS Auriga
- COVADIS VEGA-ALPHA
- Dell Dell Smart Card Reader Keyboard

- Dell keyboard SK-3106
- DUALi DE-620 Combi
- DUALi DRAGON NFC READER
- eID_R6 001 X8
- Elatec TWN4 SmartCard NFC
- Elatec TWN4/B1.06/CPF3.05/S1SC1.32/P (Beta 3)
- ESMART Token GOST
- Eutron Card Reader
- Eutron CryptoIdentity CCID
- Eutron Digipass 860
- Eutron Smart Pocket
- Feitian 502-CL
- Feitian bR301
- Feitian bR500
- Feitian eJAVA Token
- Feitian ePass2003
- FEITIAN iR301
- Feitian R502
- Feitian SCR301
- Feitian Technologies FT SCR310
- Feitian VR504 VHBR Contactless & Contact Card Reader
- Free Software Initiative of Japan Gnuk
- FT CCID
- FT CCID KB
- FT ePass2003Auto
- FT U2F CCID
- FT U2F CCID KB
- Fujitsu Siemens Computers SmartCard Keyboard USB 2A
- Fujitsu Siemens Computers SmartCard USB 2A
- Fujitsu Smartcard Reader D323
- FujitsuTechnologySolutions GmbH Keyboard KB100 SCR
- FujitsuTechnologySolutions GmbH Keyboard KB100 SCR eSIG
- FujitsuTechnologySolutions GmbH Smartcard Keyboard G87-914x
- FujitsuTechnologySolutions GmbH SmartCase KB SCR eSIG
- GEMALTO CT1100
- Gemalto EZIO CB+
- Gemalto Ezio Shield
- Gemalto Ezio Shield Branch Reader
- Gemalto Ezio Shield Secure Channel
- Gemalto Gem e-Seal Pro USB Token
- Gemalto GemCore SIM Pro Smart Card Reader
- Gemalto GemPC Express
- Gemalto Gemplus USB SmartCard Reader 433-Swap
- Gemalto Hybrid Smartcard Reader
- Gemalto IDBridge K3000
- Gemalto PC Twin Reader
- Gemalto PDT
- Gemalto Prox Dual USB PC Link Reader
- Gemalto Prox SU USB PC LinkReader
- Gemalto SA .NET Dual

- Gemalto Smart Enterprise Guardian Secure USB Device
- Gemalto USB GemPCPinpad SmartCard Reader
- Gemalto USB Shell Token V2
- Gemplus GemCore POS Pro Smart Card Reader
- Generic MultiCard Device
- Generic Smart Card Reader Interface
- Generic USB Smart Card Reader
- Generic USB2.0-CRW
- German Privacy Foundation Crypto Stick v1.2
- Giesecke & Devrient GmbH Star Sign Card Token 350 (ICCD)
- Giesecke & Devrient GmbH Star Sign Card Token 550 (ICCD)
- Giesecke & Devrient GmbH StarSign Crypto USB Token
- Giesecke & Devrient GmbH StarSign CUT S
- GIS Ltd SmartMouse USB
- GoldKey Security PIV Token
- HDZB uKeyCI800-K18
- Hewlett Packard HP USB Smartcard CCID Keyboard
- Hewlett Packard MFP Smart Card Reader
- Hewlett-Packard Company HP USB CCID Smartcard Keyboard
- Hewlett-Packard Company HP USB Smart Card Keyboard
- Hewlett-Packard HP lt4112 Gobi 4G Module
- HID Global OMNIKEY 3x21 Smart Card Reader
- HID Global OMNIKEY 5022 Smart Card Reader
- HID Global OMNIKEY 5122 Dual
- HID Global OMNIKEY 5122 Smartcard Reader
- HID Global OMNIKEY 5422 Smartcard Reader
- HID Global OMNIKEY 6121 Smart Card Reader
- HID Global veriCLASS Reader
- HID OMNIKEY 5025-CL
- HID OMNIKEY 5127 CK
- HID OMNIKEY 5326 DFR
- HID OMNIKEY 5427 CK
- Hitachi, Ltd. Hitachi Biometric Reader
- Hitachi, Ltd. Hitachi Portable Biometric Reader
- id3 Semiconductors CL1356A_HID
- id3 Semiconductors CL1356T
- Identiv @MAXX ID-1 Smart Card Reader
- Identiv @MAXX Light2 token
- Identiv CLOUD 2980 F Smart Card Reader
- Identiv SCR3500 A Contact Reader
- Identiv SCR3500 B Contact Reader
- Identiv SCR35xx USB Smart Card Reader
- Identiv uTrust 2900 R Smart Card Reader
- Identiv uTrust 2910 R Smart Card Reader
- Identiv uTrust 2910 R Taglio SC Reader
- Identiv uTrust 3512 SAM slot Token
- Identiv uTrust 3522 embd SE RFID Token
- Identiv uTrust 3700 F CL Reader
- Identiv uTrust 3701 F CL Reader
- Identiv uTrust 4701 F Dual Interface Reader
- Identive CLOUD 2700 F Smart Card Reader

- Identive CLOUD 2700 R Smart Card Reader
- Identive CLOUD 4000 F DTC
- Identive CLOUD 4500 F Dual Interface Reader
- Identive CLOUD 4510 F Contactless + SAM Reader
- Identive SCT3522CC token
- Identive Technologies Multi-ISO HF Reader - USB
- IID AT90S064 CCID READER
- IIT E.Key Almaz-1C
- IIT E.Key Crystal-1
- InfoThink IT-102MU Reader
- INGENICO Leo
- Ingenico WITEO USB Smart Card Reader
- Inside Secure AT90SCR050
- Inside Secure AT90SCR100
- Inside Secure AT90SCR200
- INSIDE Secure VaultIC 405 Smart Object
- Inside Secure VaultIC 420 Smart Object
- Inside Secure VaultIC 440 Smart Object
- INSIDE Secure VaultIC 441 Smart Object
- Inside Secure VaultIC 460 Smart Object
- IonIDe Smartcard Reader
- KACST HSID Reader
- KACST HSID Reader Dual Storage
- KACST HSID Reader Single Storage
- Kapsch TrafficCom USB SAM reader
- KEBTechnology KONA USB SmartCard
- Kingtrust Multi-Reader
- KOBIL EMV CAP - SecOVID Reader III
- KOBIL KAAN Advanced
- KOBIL KAAN Base
- KOBIL KAAN SIM III
- KOBIL Systems IDToken
- KOBIL Systems mIDentity 4smart
- KOBIL Systems mIDentity 4smart AES
- KOBIL Systems mIDentity fullsize
- KOBIL Systems mIDentity fullsize AES
- KOBIL Systems mIDentity M
- KOBIL Systems mIDentity visual
- KOBIL Systems mIDentity XL
- KOBIL Systems Smart Token
- KRONEGGER Micro Core Platform
- KRONEGGER NFC blue Reader Platform
- Ledger Nano S
- Lenovo Integrated Smart Card Reader
- Lenovo Lenovo USB Smartcard Keyboard
- Liteon HP SC Keyboard - Apollo (Liteon)
- Liteon HP SC Keyboard - Apollo JP (Liteon)
- Liteon HP SC Keyboard - Apollo KR (Liteon)
- Macally NFC CCID eNetPad
- mCore SCard-Reader
- Microchip SEC1110

- Microchip SEC1210
- MK Technology KeyPass S1
- Morpho MSO1350 Fingerprint Sensor & SmartCard Reader
- Morpho MSO350/MSO351 Fingerprint Sensor & SmartCard Reader
- MSI StarReader SMART
- MYSMART MySMART PAD V2.0
- Neowave Weneo
- Nitrokey Nitrokey HSM
- Nitrokey Nitrokey Pro
- Nitrokey Nitrokey Start
- Nitrokey Nitrokey Storage
- NTT Communications Corp. SCR3310-NTTCom USB SmartCard Reader
- NXP Pegoda 2 N
- NXP PR533
- O2 Micro Oz776
- OBERTHUR TECHNOLOGIES ID-ONE TOKEN SLIM v2
- OCS ID-One Cosmo Card USB Smart Chip Device
- OMNIKEY 5421
- OMNIKEY 6321 CLi USB
- OMNIKEY AG 3121 USB
- OMNIKEY AG 6121 USB mobile
- OMNIKEY AG CardMan 3121
- OMNIKEY AG CardMan 3621
- OMNIKEY AG CardMan 3821
- OMNIKEY AG CardMan 5121
- OMNIKEY AG CardMan 5125
- OMNIKEY AG CardMan 6121
- OMNIKEY AG Smart Card Reader
- OMNIKEY CardMan 1021
- OMNIKEY CardMan 4321
- OMNIKEY CardMan 5321
- Panasonic Panasonic USB Smart Card Reader 7A-Smart
- Philips Semiconductors JCOP41V221
- Philips Semiconductors SmartMX Sample
- PIVKey T800
- Planeta RC700-NFC CCID
- Precise Biometrics Precise 200 MC
- Precise Biometrics Precise 250 MC
- Precise Biometrics Sense MC
- Raritan D2CIM-DVUSB VM/CCID
- Regula RFID Reader
- REINER SCT cyberJack go
- REINER SCT cyberJack one
- REINER SCT cyberJack RFID basis
- REINER SCT cyberJack RFID standard
- REINER SCT tanJack Bluetooth
- Rocketek RT-SCR1
- RSA RSA SecurID (R) Authenticator

- SafeNet eToken 5100
- SafeNet eToken 5300
- SafeNet eToken 7300
- SafeTech SafeTouch
- SAFETRUST SABRE SCR
- SchlumbergerSema SchlumbergerSema Cyberflex Access
- SCM Microsystems Inc. HP USB Smartcard Reader
- SCM Microsystems Inc. SCL010 Contactless Reader
- SCM Microsystems Inc. SCL01x Contactless Reader
- SCM Microsystems Inc. SCR 331
- SCM Microsystems Inc. SCR 3310
- SCM Microsystems Inc. SCR 3311
- SCM Microsystems Inc. SCR 331-DI
- SCM Microsystems Inc. SCR 335
- SCM Microsystems Inc. SCR 355
- SCM Microsystems Inc. SCR3310 USB Smart Card Reader
- SCM Microsystems Inc. SCR331-DI USB Smart Card Reader
- SCM Microsystems Inc. SCR3320 - Smart Card Reader
- SCM Microsystems Inc. SCR3340 - ExpressCard54 Smart Card Reader
- SCM Microsystems Inc. SCR33x USB Smart Card Reader
- SCM Microsystems Inc. SDI010 Smart Card Reader
- SCM Microsystems Inc. SDI011 Contactless Reader
- SCM Microsystems Inc. SPR 532
- Secure Device Solutions DOMINO-Key TWIN
- SecuTech SecuTech Token
- Sitecom Sitecom USB simcard reader MD-010
- Softforum Co., Ltd XecureHSM
- SpringCard CrazyWriter
- SpringCard CSB6 Basic
- SpringCard CSB6 Secure
- SpringCard CSB6 Ultimate
- SpringCard EasyFinger Standard
- SpringCard EasyFinger Ultimate
- SpringCard H512 Series
- SpringCard H663 Series
- SpringCard NFC'Roll
- SpringCard Prox'N'Roll
- Spyrus Inc PocketVault P-3X
- SYNNIX STD200
- Teridian Semiconductors TSC12xxFV.09
- THRC Smart Card Reader
- THURSBY SOFTWARE TSS-PK1
- TianYu CCID Key TianYu CCID SmartKey
- Tianyu Smart Card Reader
- Todos Argos Mini II
- Todos CX00
- ubisys 13.56MHz RFID (CCID)
- udea MILKO V1.
- Unicept GmbH AirID USB
- Unicept GmbH AirID USB Dongle

- Validy TokenA sl vt
- VASCO DIGIPASS 870
- VASCO DIGIPASS 875
- VASCO DIGIPASS 920
- VASCO DIGIPASS KEY 101
- VASCO DIGIPASS KEY 200
- VASCO DIGIPASS KEY 202
- VASCO DIGIPASS KEY 860
- VASCO DP855
- VASCO DP865
- VASCO DP905v1.1
- Verisign Secure Storage Token
- Verisign Secure Token
- VMware Virtual USB CCID
- WatchCNPC USB CCID Key
- Watchdata USB Key
- Watchdata W5181
- Winbond CCID SmartCard Controller
- XIRING Leo v2
- XIRING MyLeo
- XIRING XI-SIGN USB V2
- Yubico Yubikey 4 CCID
- Yubico Yubikey 4 OTP+CCID
- Yubico Yubikey 4 OTP+U2F+CCID
- Yubico Yubikey 4 U2F+CCID
- Yubico Yubikey NEO CCID
- Yubico Yubikey NEO OTP+CCID
- Yubico Yubikey NEO OTP+U2F+CCID
- Yubico Yubikey NEO U2F+CCID

- **vCAST Media Streaming**

  vCAST Media Streaming works with VLC Player version 2.2.6 and later.

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

  By default, the "USB Audio Redirection" option in the L-series firmware is not enabled. **This is the recommended configuration**. 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:

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

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. In some circumstances, where L350 devices are used with HD monitors, in rare occasions it is possible for audio playback to be disabled when playing web videos, if you experience this problem you will need to re-boot your L350 access device. For this reason, we do not recommend using USB Audio redirection with L350 access devices.

- **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 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.

- **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.

- **Power Plan settings of vSpace Server**

  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.

CONTACTING TECHNICAL SUPPORT AND ADDITIONAL RESOURCES

- Visit the NComputing Knowledge Base at https://support.ncomputing.com/portal/kb for more information, guides, and walkthroughs.
- To request Technical Support, please visit the NComputing Support page at https://www.ncomputing.com/support/support-options

Disclaimer

Information contained in this document may have been obtained from internal testing or from a third party. This information is for informational purposes only. Information may be changed or updated without notice. NComputing reserves the right to make improvements and/or changes in the products, programs and/or specifications described herein anytime without notice.

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.

www.ncomputing.com
