

# Administrators Guide

Wyse TCX™ Suite Release 4.0

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# 1

## Introduction

Wyse TCX Suite™ is a single software solution that helps thin client environments provide the benefits of thin computing without compromises on the end-user experience. Each software component in the suite delivers a specific enhancement designed to work seamlessly within a variety of prevalent backend infrastructure solutions such as Microsoft® Terminal Services, Citrix® XenApp, Citrix® XenDesktop, and VMware® View or Virtual Desktop Infrastructure.

The Wyse TCX Suite enables multiple monitor awareness, rich multimedia playback, seamless USB device access, high quality bi-directional audio capabilities, and rich flash playback for Wyse thin clients. Wyse TCX Suite Server software is typically installed in a virtual desktop, on a terminal server, or a XenApp server. Wyse TCX Suite Client software is installed on supported client operating systems or embedded in Wyse ThinOS™.

Wyse TCX Suite includes:

- **Wyse® TCX Flash Acceleration™** - enables Wyse thin client users to experience improved Flash video content performance in a remote computing environment.
- **Wyse® TCX Multi-display™** - makes virtual desktops and applications multi-monitor aware (provides productivity-enhancing advantages for Wyse thin clients using multiple monitors).
- **Wyse® TCX Multimedia™** - supports enhanced playback of MPEG, WAV, WMV, and other multimedia file formats (the software includes both the server and client components that work intelligently to redirect multimedia processing tasks dynamically between the client and server for a richer user experience).
- **Wyse® TCX Rich Sound™** - enables the zero-compromise deployment of virtual desktops and applications with the capability of receiving and transmitting high quality audio (provides bi-directional audio capabilities for virtual desktops and applications, and supports sound recording and playback applications).
- **Wyse® TCX USB Virtualizer™** - makes client attached USB devices visible to virtual desktops and applications (removes any compromises on limited local device drivers for a broad range of USB-based printers, scanners, storage devices, Palm, BlackBerry, Pocket PC handhelds, webcams and headsets).



### Note

Wyse TCX Suite is currently available in English only.

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## About this Guide

This guide is intended for administrators of Wyse thin client environments. It provides information and the step-by-step instructions you need to install and configure a Wyse TCX Suite enhanced thin client environment.

### Organization of this Guide

This guide is organized as follows:

- Chapter 2, "Supported Platforms," contains detailed information on Wyse TCX Suite supported server and client platforms.
- Chapter 3, "Installing Wyse TCX Suite Server Software," provides the detailed procedures you must complete to install and configure the Wyse TCX Suite Server software.
- Chapter 4, "Installing Wyse TCX Suite Client Software," provides the detailed procedures you must complete to install the Wyse TCX Suite Client software.
- Chapter 5, "Configuring and Using Wyse<sup>®</sup> TCX Flash Acceleration<sup>™</sup>," contains information on configuring and using Wyse TCX Flash Acceleration.
- Chapter 6, "Configuring and Using Wyse<sup>®</sup> TCX Multi-display<sup>™</sup>," contains information on configuring and using Wyse TCX Multi-display.
- Chapter 7, "Configuring and Using Wyse<sup>®</sup> TCX Multimedia<sup>™</sup>," contains information on configuring and using Wyse TCX Multimedia.
- Chapter 8, "Configuring and Using Wyse<sup>®</sup> TCX Rich Sound<sup>™</sup>," contains information on configuring and using Wyse TCX Rich Sound.
- Chapter 9, "Configuring and Using Wyse<sup>®</sup> TCX USB Virtualizer<sup>™</sup>," contains information on configuring and using Wyse TCX USB Virtualizer.
- Chapter 10, "Uninstalling and Troubleshooting," provides instructions on uninstalling Wyse TCX Suite server and client software, and general troubleshooting information.

### Finding the Information You Need in this Guide

You can use either the Search window or Find toolbar to locate a word, series of words, or partial word in an active PDF document. For detailed information on using these features, refer to the Help in your PDF reader.

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## Wyse Technical Support

To access Wyse technical resources, visit <http://www.wyse.com/support>. If you still have questions, you can submit your questions using the [Wyse Self-Service Center](#) (on the Wyse.com home page, go to **Support | Knowledge Base | Home** tab) or call Customer Support at 1-800-800-WYSE (toll free in U.S. and Canada). Hours of operation are from 6:00 A.M. to 5:00 P.M. Pacific Time, Monday through Friday.

To access international support, visit <http://www.wyse.com/global>.

### Related Documentation and Services

Wyse thin client features can be found in the datasheet for your specific thin client model. Datasheets are available on the Wyse Web site. Go to <http://www.wyse.com/products>, click the *Wyse Thin Clients* link, click the link for your thin client, and then click the *Download Datasheet* link.

Administrator and user documentation for your client operating system and thin client model is available on the Wyse Web site at: <http://www.wyse.com/manuals>.

Wyse Thin Computing Software is available on the Wyse Web site at: <http://www.wyse.com/products/software>.

## **Wyse Online Community**

Wyse maintains an online community where users of our products can seek and exchange information on user forums. Visit the Wyse Online Community Forums at:

<http://community.wyse.com/forums>

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# 2

## Supported Platforms

This chapter contains detailed information on Wyse TCX Suite supported server and client platforms.

### Prerequisites for Wyse TCX Suite Server Software Installations

Complete the following requirements *before* installing Wyse TCX Suite Server software:

- **Terminal Services or XenApp installations:**
  - A server must have Windows Terminal Services installed and enabled.
  - Administrator access is required.
- **Windows XP Professional, Windows Vista, or Windows 7 installations:**
  - Windows Remote Desktop Connections must be enabled *before* proceeding with an installation.
  - A server must have Desktop Experience installed and enabled.
  - Administrator access is required.

### Supported Server Platforms

Table 1 lists supported 32-bit server platforms for the Wyse TCX Suite.

**Table 1 Wyse TCX Suite Supported 32-bit Server Platforms**

Product	Server Platforms (32-bit)				Windows Server 2003 SP2 Terminal Services	Windows Server 2008 R1 Terminal Services	Citrix XenApp 4.5 or later
	Windows XP Professional SP3 or later	Windows Vista (Ultimate, Business, Enterprise) SP1 or later	Windows 7	Xen Desktop View <sup>1</sup>			
Wyse TCX Suite Component	XenDesktop	View <sup>1</sup>	Xen Desktop	View <sup>1</sup>			
TCX Flash Acceleration	✓	✓	✓	✓	✓	✓	✓
TCX Multi-display	✓	✓	✓	✓	✓	✓	✓
TCX Multimedia	✓	✓	✓	✓	✓	✓	✓
TCX Rich Sound	✓	✓			✓	✓	✓
TCX USB Virtualizer	✓	✓	✓	✓	✓	✓ <sup>2</sup>	✓ <sup>2</sup>

1. For View, use "direct connections" only.

2. No session-level mapping, USB devices redirected in shared mode.

Table 2 lists supported 64-bit server platforms for the Wyse TCX Suite.

**Table 2 Wyse TCX Suite Supported 64-bit Server Platforms**

Product	Server Platforms (64-bit)				Windows 7	Windows Server 2003 SP2 Terminal Services	Windows Server 2008 R2 Terminal Services	Citrix XenApp 4.5 or later
	Windows XP Professional SP3 or later	Windows Vista (Ultimate, Business, Enterprise) SP1 or later	Xen Desktop	View <sup>1</sup>				
Wyse TCX Suite Component	XenDesktop	View <sup>1</sup>	Xen Desktop	View <sup>1</sup>				
TCX Flash Acceleration	✓	✓	✓	✓	✓	✓	✓	✓
TCX Multi-display	✓	✓	✓	✓	✓	✓	✓	✓
TCX Multimedia	✓	✓			✓	✓	✓	✓
TCX Rich Sound	✓	✓				✓		✓
TCX USB Virtualizer	✓	✓	✓	✓	✓	✓ <sup>2</sup>	✓ <sup>2</sup>	✓ <sup>2</sup>

1. For View, use "direct connections" only.

2. No session-level mapping, USB devices redirected in shared mode.

## Supported Client Platforms

Table 3 lists supported client platforms for the Wyse TCX Suite.



### Note

For supported thin client product models, refer to the administrator documentation for your client operating system as described in "Related Documentation and Services."

**Table 3 Wyse TCX Suite Supported Client Platforms**

Product Wyse TCX Suite Component	Client Platforms							
	Wyse ThinOS	Linux	Windows CE 5.0	WindowsXP Embedded	Windows Embedded Standard	Windows XP Professional SP3	Windows Vista Ultimate	Windows 7
TCX Flash Acceleration	✓	✓	✓	✓	✓	✓	✓	✓
TCX Multi-display	✓	✓ <sup>1</sup>	✓	✓	✓	✓	✓	✓
TCX Multimedia	✓	✓	✓	✓	✓	✓	✓	✓
TCX Rich Sound	✓		✓	✓	✓	✓		✓
TCX USB Virtualizer	✓	✓	✓ <sup>2</sup>	✓	✓	✓	✓	✓

1. No XenApp or XenDesktop support.

2. No isochronous device (headsets, webcams) support.

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# 3

## Installing Wyse TCX Suite Server Software

This chapter provides the detailed procedures you must complete to install and configure the Wyse TCX Suite Server software. Although you can select custom installation configurations during the installation, it is recommended that you use the default configurations.



### Caution

Be sure you are running supported operating system versions as described in "Supported Server Platforms," and that you have completed all pre-installation requirements as described in "Prerequisites for Wyse TCX Suite Server Software Installations" *before* you begin installing the server software. If your server platform does not support a component, you will be notified by the installation wizard during installation.

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### About Evaluation Installations

You can download the Wyse TCX Suite evaluation software from the Wyse Web site at [www.wyse.com](http://www.wyse.com). Click **Support | Software Downloads**, select **Wyse TCX Suite** in the *Product Evaluations* list, and then click **Search**. After downloading the evaluation software, you can follow the installation instructions in this guide

The evaluation software allows you to use the full services of Wyse TCX Suite for a period of up to 30 days. After your evaluation period expires, you must obtain a production license from Wyse and perform a production installation to use the product.



### Note

Evaluation software is intended for non-production environments. You cannot upgrade an evaluation installation to a production installation.

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### About Software Product Registration

Before you can download production software, you must complete a product registration:

1. After purchase, you will receive an e-mail containing your software *Licence Key* and a separate e-mail containing your software *Maintenance Key*.
2. Go to <http://commerce.wyse.com>, click the registration and software download link for your product, and then use the *Customer Log In* page.
3. After login, click the registration link for your product to open and complete the software *Licence Key* page and the software *Maintenance Key* page. After your product registration is complete, your production software is available for download.

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## Upgrading Server Software

The Wyse TCX Suite Server software installation process automatically uninstalls the previous version of Wyse TCX Server software.

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## Installing the Wyse TCX Suite Server Software

You can install the Wyse TCX Suite Server software using either the standard installation method or the silent installation method. The standard method will prompt you for input during the installation process (see "Performing a Standard Installation on the Server"). The silent method will not prompt you for input during the installation process and performs a complete "typical" installation of the product (see "Performing a Silent Installation on the Server").

### Performing a Standard Installation on the Server

Use the following guidelines:

**Note**

Before a standard production installation, be sure you have obtained your Wyse TCX Suite production license. During your production installation you will need to use this license. Evaluation installations do not require a license.

**Note**

*For Windows Vista and Windows 7 Only.* Before installing Wyse TCX Suite Server software, be sure to disable the User Account Control (UAC) and restart your machine according to the Microsoft documentation on the Microsoft Web site. After installation, be sure to enable UAC and restart your machine according to the Microsoft documentation.

1. Download the Wyse TCX Suite Server software from the Wyse Web site. Go to <http://commerce.wyse.com>, use the *Wyse TCX Suite Maintenance Registration and Software Download* link to log in, and then download the software (*Wyse TCX Server Suite.msi*) to the server where you will install the software.
2. Extract the file you need (32-bit or 64-bit—for example, *Wyse TCX Server Suite\_prod64.msi*) from the zip file to the desktop of the server.
3. Double-click the file name you need (for example, **Wyse TCX Server Suite\_prod64.msi**) to open and use the installation wizard (the installation wizard guides you through the installation process).
4. You must read and accept the terms and conditions in the license agreement *before* the installation process installs the software.
5. During the installation process you will be prompted to select the type of installation you want (**Typical Install** or **Custom Install**), be sure to select the option you need and then click **Next** to continue the installation wizard.

**Note**

By default, the required files are installed in `C:\Program Files\Wyse\TCX\Server`. However, you can select a different location when prompted for the destination folder during a custom installation.

6. After the installation is complete, click **Finish**. **TCX Suite Server Configuration** appears in the *Start* menu (**Start | Programs | Wyse | TCX Suite Server Configuration**). While the Wyse TCX Suite Server software is enabled by default, you can further configure the available server settings for each component. For information on configuring Wyse TCX Suite Server software, refer to:
- "Configuring the Wyse TCX Flash Acceleration Server Software"
  - "Configuring the Wyse TCX Multi-display Server Software"
  - "Configuring the Wyse TCX Multimedia Server Software"
  - "Configuring the Wyse TCX Rich Sound Server Software"
  - "Configuring the Wyse TCX USB Virtualizer Server Software"

## Performing a Silent Installation on the Server

Use the following guidelines:



### Note

Before a silent production installation, be sure you have obtained your Wyse TCX Suite production license and saved it in a `licence.txt` file. During your production installation you will need to use this license. Evaluation installations do not require a license.



### Note

Format of the `license.txt` file:  
 Windows Registry Editor Version 5.00  
 [HKEY\_LOCAL\_MACHINE\SOFTWARE\Wyse\TCX\License]  
 "License"="serial key with dashes"



### Note

*For Windows Vista and Windows 7 Only.* Before installing Wyse TCX Suite Server software, be sure to disable the User Account Control (UAC) and restart your machine according to the Microsoft documentation on the Microsoft Web site. After installation, be sure to enable UAC and restart your machine according to the Microsoft documentation.

1. Download the Wyse TCX Suite Server software from the Wyse Web site. Go to <http://commerce.wyse.com>, use the *Wyse TCX Suite Maintenance Registration and Software Download* link to log in, and then download the software (*Wyse TCX Server Suite.msi*) to the server where you will install the software.
2. Extract the file you need (32-bit or 64-bit—for example, *Wyse TCX Server Suite\_prod64.msi*) from the zip file to the desktop of the server.
3. Open a *Command Prompt* window (click **Start | Run**, enter `cmd`, and click **OK**).
4. Navigate to the directory where the file you need to install (for example, *Wyse TCX Server Suite\_prod64.msi*) is located.
5. At the command prompt, use the following guidelines to install the components (where *TCX Flash Acceleration*=FLASH, *TCX Multi-display*=MDS, *TCX Multimedia*=MMR, *TCX Rich Sound*=VOIP, and *TCX USB Virtualizer*=USB):
  - Silent installation of all server components, enter (where xxx is the name of the file you are installing):  
`C:\>msiexec /i "<path where msi is located>\xxx.msi" /q USB="1" MMR="1" MDS="1" VOIP="1" FLASH="1" LIC_PATH="path where txt file is located\lic.txt"`

- Silent installation of selective server components (for example, *TCX USB Virtualizer* and *TCX Multimedia*), enter (using the format for the two components in our example—where xxx is the name of the file you are installing):  
**C:\>msiexec /i "<path where msi is located>\xxx.msi" /q USB="1" MMR="1"  
LIC\_PATH="path where txt file is located\lic.txt"**

After the installation is complete, **TCX Suite Server Configuration** appears in the *Start* menu (**Start | Programs | Wyse | TCX Suite Server Configuration**). While the Wyse TCX Suite Server software is enabled by default, you can further configure the available server settings for each Wyse TCX Suite Server component. For information on configuring Wyse TCX Suite Server software, refer to:

- "Configuring the Wyse TCX Flash Acceleration Server Software"
- "Configuring the Wyse TCX Multi-display Server Software"
- "Configuring the Wyse TCX Multimedia Server Software"
- "Configuring the Wyse TCX Rich Sound Server Software"
- "Configuring the Wyse TCX USB Virtualizer Server Software"

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# 4

## Installing Wyse TCX Suite Client Software

This chapter provides the detailed procedures you must complete to install the Wyse TCX Suite Client software. Although you can select custom installation configurations during the installation, it is recommended that you use the default configurations.



### Note

There are no licensing requirements to activate client software.

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### About Upgrading Client Software

The Wyse TCX Suite Client software installation process automatically upgrades the previous version of a Wyse TCX Client software component.

---

### Installing the Wyse TCX Suite Client Software

**(Wyse Thin Clients Running ThinOS and Linux Only)** The Wyse TCX Suite Client software is embedded and enabled in the firmware for Wyse thin clients running ThinOS. There is no need to install the Wyse TCX Suite Client software.

**(Clients Running Windows CE, Windows XP Embedded, Windows Embedded Standard, Windows XP Professional, Windows Vista, or Windows 7 Only)** You can install the Wyse TCX Suite Client software using either the standard installation method or the silent installation method. The standard method will prompt you for input during the installation process (see "Performing a Standard Installation on the Client"). The silent method will not prompt you for input during the installation process and performs a "complete" or "typical" installation of the product (see "Performing a Silent Installation on the Client").



### Note

Be sure you are running supported operating system versions as described in "Supported Client Platforms." If your client platform does not support a component, you will be notified by the installation wizard during installation.

## Performing a Standard Installation on the Client

Use the following guidelines:



### Note

*For a General PC Running Windows 7 Only:* Before installing Wyse TCX Suite Client software, be sure to disable the User Account Control (UAC) and restart your machine according to the Microsoft documentation on the Microsoft Web site. After installation, be sure to enable UAC and restart your machine according to the Microsoft documentation.

1. Log in as an administrator.
2. (*Windows-based Thin Client Only*) Disable the write filter and reboot the thin client. After reboot, log in as an administrator. For detailed information, refer to "About Installing Wyse TCX Suite Client Software on Windows-based Thin Clients."
3. Download the Wyse TCX Suite Client software from the Wyse Web site at [www.wyse.com](http://www.wyse.com). Click **Support | Software Downloads**, expand the list next to *Product Downloads (Active)*, select your thin client model (PCs use V90), and then click **Search**. On the resulting page, scroll down to the **Firmware Addons** section and click the file name next to *Wyse TCX Suite 4.0 Client* to download the software (*Wyse\_TCX\_Client\_Suite.msi*) to the client where you will install the software.
4. Extract *Wyse\_TCX\_Client\_Suite.msi* from the zip file to the desktop of the client.
5. Double-click **Wyse\_TCX\_Client\_Suite.msi** to open and use the installation wizard (the installation wizard guides you through the installation process).
6. You must read and accept the terms and conditions in the license agreement *before* the installation process installs the software.



### Note

By default, the required files are installed in `C:\Program Files\Wyse\TCX\Client`. However, you can select a different location when prompted for the destination folder during a custom installation.

7. After the installation is complete, click **Finish**, and then perform one of the following:
  - (*Windows-based Thin Client Only*) Enable the write filter and reboot the thin client. For detailed information, refer to "About Installing Wyse TCX Suite Client Software on Windows-based Thin Clients."
  - (*PC Only*) Reboot the PC.

After reboot, installed software components can be accessed from the *Start* menu (**Start | Programs | Wyse | TCX Suite Client Configuration**). While the Wyse TCX Suite Client software is enabled by default, you can further configure the available client settings for the following components:

- "Configuring the Wyse TCX Multimedia Client Software"
- "Configuring the Wyse TCX Rich Sound Client Software"
- "Configuring the Wyse TCX USB Virtualizer Client Software"

## Performing a Silent Installation on the Client

Use the following guidelines (remember that during the silent installation process, you are not prompted for input):



### Note

*For a General PC Running Windows 7 Only:* Before installing Wyse TCX Suite Client software, be sure to disable the User Account Control (UAC) and restart your machine according to the Microsoft documentation on the Microsoft Web site. After installation, be sure to enable UAC and restart your machine according to the Microsoft documentation.

1. Log in as an administrator.
2. (*Windows-based Thin Client Only*) Disable the write filter and reboot the thin client. After reboot, log in as an administrator. For detailed information, refer to "About Installing Wyse TCX Suite Client Software on Windows-based Thin Clients."
3. Download the Wyse TCX Suite Client software from the Wyse Web site at [www.wyse.com](http://www.wyse.com). Click **Support | Software Downloads**, expand the list next to *Product Downloads (Active)*, select your thin client model (PCs use V90), and then click **Search**. On the resulting page, scroll down to the **Firmware Addons** section and click the file name next to *Wyse TCX Suite 4.0 Client* to download the software (*Wyse\_TCX\_Client\_Suite.msi*) to the client where you will install the software.
4. Extract *Wyse\_TCX\_Client\_Suite.msi* from the zip file to the desktop of the client.
5. Open a *Command Prompt* window (click **Start | Run**, enter **cmd**, and click **OK**).
6. Navigate to the desktop where the *Wyse\_TCX\_Client\_Suite.msi* file is located.
7. At the command prompt, use the following guidelines (where *TCX Flash Acceleration=FLASH*, *TCX Multi-display=MDS*, *TCX Multimedia=MMR*, *TCX Rich Sound=VOIP*, and *TCX USB Virtualizer=USB*):
  - Silent installation of all client components, enter:  
**C:\>msiexec /i "<path where msi is located>Wyse TCX Client Suite.msi" /q USB="1" MMR="1" MDS="1" VOIP="1" FLASH="1"**
  - Silent installation of selective client components (for example, *TCX USB Virtualizer* and *TCX Multimedia*), enter (using the format for the two components in our example—where xxx is the name of the file you are installing):  
**C:\>msiexec /i "<path where msi is located>Wyse TCX Client Suite.msi" /q USB="1" MMR="1"**
8. After the installation is complete, click **Finish**, and then perform one of the following:
  - (*Windows-based Thin Client Only*) Enable the write filter and reboot the thin client. For detailed information, refer to "About Installing Wyse TCX Suite Client Software on Windows-based Thin Clients."
  - (*PC Only*) Reboot the PC.

After reboot, installed software components can be accessed from the *Start* menu (**Start | Programs | Wyse | TCX Suite Client Configuration**). While the Wyse TCX Suite Client software is enabled by default, you can further configure the available client settings for the following components:

- "Configuring the Wyse TCX Multimedia Client Software"
- "Configuring the Wyse TCX Rich Sound Client Software"
- "Configuring the Wyse TCX USB Virtualizer Client Software"

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## About Installing Wyse TCX Suite Client Software on Windows-based Thin Clients

When installing Wyse TCX Suite Client software on thin clients running a supported Windows operating system, you must *disable* the File Based Write Filter *before* your installation and then *enable* the File Based Write Filter *after* your installation. This process allows your software installation on the thin client to be saved and persist after a thin client reboot.

Use the following guidelines:

1. Log on as an administrator. If this is an initial logon to the thin client or you are logging on to the thin client of a User, you must log off the User desktop while holding down the SHIFT key to display the **Log On to Windows** dialog box and use your administrator credentials to logon (default User name and Password are both *Administrator*).



### Note

Automatic logon to a User desktop is enabled on the thin client by default. An administrator can use *Winlog* (found in the administrator *Control Panel*) to enable or disable Auto Logon and change the default User name, Password, and Domain for the thin client. For example, as an administrator, you can use *Winlog* to configure *your* thin client to start with the **Log On to Windows** dialog box so that you can log on using your administrator credentials.

2. After logging on to the thin client, disable the File Based Write Filter by double-clicking the **FBWF Disable** icon on the desktop (this will disable the filter and reboot the system).
3. If automatic logon to a User desktop is enabled on the thin client, you must log off the User desktop and log on as an administrator (log off the User desktop while holding down the SHIFT key to display the **Log On to Windows** dialog box and use your administrator credentials to log on).
4. Perform the installation procedures of the client software according to your needs to install the software.
5. After you complete your installation, you must enable the File Based Write Filter by double-clicking the **FBWF Enable** icon on the desktop (this will enable the filter and reboot the system). Your software installation on the thin client is now saved and will persist after a thin client reboot.



# 5

## Configuring and Using Wyse® TCX Flash Acceleration™

This chapter contains information on configuring and using Wyse TCX Flash Acceleration. Wyse TCX Flash Acceleration enables Wyse thin client users to experience improved Flash video content performance in a remote computing environment. While the Flash player continues to run server-side, the resulting images are redirected to the client, allowing for greater control of frame rate and compression.

Notable features include:

- Flash video content support.
- Internet Explorer Browser version 7 or later support.
- No requirement to install the Flash Player on the client.
- Customizable frame rate and compression of video content allows Administrators to fine tune network usage and user experience.



### Note

The Wyse TCX Flash Acceleration Client software requires that the Wyse TCX Multimedia Client software is installed. Wyse TCX Flash Acceleration Client software does not require separate configuration.



### Note

Wyse TCX Flash Acceleration is compatible with both VMware View 3.1 or later and Citrix flash redirection.

## Configuring the Wyse TCX Flash Acceleration Server Software

After the installation is complete, Wyse TCX Flash Acceleration Server software is enabled by default (where *Wyse TCX Flash Redirection (Acceleration) Service* status in the *Services* applet of the Windows *Administrative Tools* will show as *Started*). However, you can configure the server software for optimal performance according to your needs.

Clicking **TCX Suite Server Configuration** in the *Start* menu (**Start | Programs | Wyse | TCX Suite Server Configuration**) opens the **TCX Suite Configuration Utility** dialog box. Use this dialog box to configure the server software.



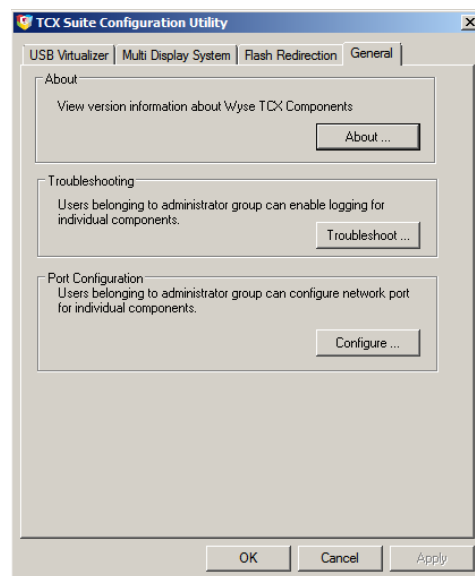
### Note

After completing your configurations, be sure to click **OK**.

### Step: 1 Configuring General Preferences

The *General* tab allows you to display software versions, set logging preferences, and set the main port for server and client communication.

**Figure 1 TCX Suite Configuration Utility - General tab**



Use the following guidelines:

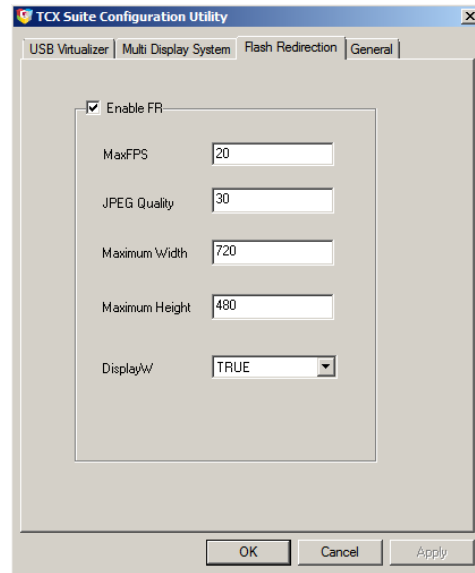
- **About** - Opens an information window displaying the versions of the Wyse TCX Suite Server components installed and a link you can use to navigate to the *Wyse TCX Suite* page on the Wyse Web site.
- **Troubleshooting** - Opens the **Troubleshooting** dialog box where you can enable and set logging preferences on the *Flash Redirection (Acceleration)* tab. Use the following guidelines:
  - **Enable Logging** - Select to enable logging and allow the selection of *Level* and *Type*:
    - **Level** - Select either **Basic** (for higher level success and error information) or **Advanced** (for more detailed debugging information).
    - **Type** - Select either **DebugView** (*Recommended* - where log information will be logged to standard debug output, and will be viewable through a utility such as DebugView) or **LogFile** (used for special development purposes where logs will be logged to the application console).

- **Configure** - Opens the **Port Configuration** dialog box where you can enter the main communication port for Wyse TCX Flash Acceleration (Wyse TCX Flash Acceleration Server and Client components communicate using this port number - default is **9427**).

## Step: 2 Setting Flash Acceleration Preferences

The *Flash Redirection (Acceleration)* tab allows you to enable and configure Flash Acceleration preferences.

**Figure 2 TCX Suite Configuration Utility - Flash Redirection (Acceleration) tab**



Use the following guidelines:

- **EnableFR** - Select to enable Flash Acceleration and access the following settings:
  - **MaxFPS** - Defines the maximum Frames Per Second parameter (value from **6** to **30**).
  - **JPEGQuality** - Defines the JPEG compression parameter (value from **0** to **100**). Any value beyond this range will not be accepted by the configuration utility.
  - **Width** - Defines the maximum width of the video that can be supported (maximum limit is **1280**).
  - **Height** - Defines the maximum height of the video that can be supported (maximum limit is **1024**).
  - **DisplayW** - Select **True** to display a lower case w at the top middle of the video if it is using Flash Acceleration.

## Using Wyse TCX Flash Acceleration Parameters in the INI Files

Initialization (INI) files are plain-text files that you can construct to contain the configuration information you want for your clients (both on a global level (*wysefr.ini*) and on an individual user level (*fr\_user.ini*)). For example, INI files can be used by applications to save information about a user's preferences and operating environment.

Table 4 lists the commands supported in the *wysefr.ini* and *fr\_user.ini* files.

The *fr\_user.ini* file is located in the following directory:

*C:\Documents and Settings\User\_Name\Application Data\Wyse\Wyse TCX Flash Redirection*



### Note

For Vista or later operating systems and for Windows Server 2008 R1/R2, the *fr\_user.ini* file for an administrator is located at  
*C:\Users\Administrator\Application Data\Wyse\Wyse TCX FlashRedirection\fr\_user.ini*

The *wysefr.ini* file is located in the following directory:

*C:\Program Files\Wyse\TCX \Server\ Flash Redirection*

Except as noted, all commands shown are supported in both types of INI files, and the *fr\_user.ini* settings take priority over the *wysefr.ini* settings.

Write all commands in a single line. Use a number sign (#) at the start of the line to change a command to a comment line.



### Note

For more information on creating and using INI files, refer to the INI and administrator documentation for your client operating system and thin client product as described in "Related Documentation and Services."

**Table 4 Wyse TCX Flash Acceleration Parameters for INI files**

Parameter	Description
DisplayW={1, 0}	1/0 option to display (1) or not display (0) a W at the top of the video.
EnableFlashRedirection={yes, no}	Yes/no option to enable Wyse TCX Flash Acceleration.
Jpeg Quality={0 to 100}	Controls the quality of the image. Minimum quality=0 and maximum quality=100. Default Jpeg Quality is set to 30 for increased performance.
Max Height=<value>	Maximum height of the video to be supported (Arbitrary height values are accepted).
Max Width=<value>	Maximum width of the video to be supported (Arbitrary height values are accepted).
MaxFPS={6 to 30}	Sets the maximum frame rate of the flash video (default MaxFPS is set to 20 for good performance).

# 6

## Configuring and Using Wyse® TCX Multi-display™

This chapter contains information on configuring and using Wyse TCX Multi-display. Wyse TCX Multi-display makes virtual desktops and applications multi-monitor aware (provides productivity-enhancing advantages for Wyse thin clients using multiple monitors).

Notable features include:

- Multi-monitor awareness capability (of primary and non-primary monitors; with a taskbar on the primary monitor of Windows XP Professional and virtual desktops).
- Window maximization on appropriate monitor.
- Dialog box and message box position control.
- Windows “position memory” (“remembers” on which monitor an application window was last closed).
- Advance monitor layout and application layout.
- Application exclusion list.
- Windows security dialog box positioning.
- GINA logon dialog positioning.



### Note

Wyse TCX Multi-display Client software does not require configuration.

---

## Configuring the Wyse TCX Multi-display Server Software

After the installation is complete, Wyse TCX Multi-display Server software is enabled by default (where *Wyse TCX Multi-display Service* status in the *Services* applet of the *Windows Administrative Tools* will show as *Started*). However, you can configure the server software for optimal performance according to your needs. For information on using Wyse TCX Multi-display Parameters in the INI files, refer to "Using Wyse TCX Multi-display Parameters in INI Files."

In general, with Wyse TCX Multi-display:

- When Wyse TCX Multi-display is running and you maximize an application window or configure for a full screen, the window will be maximized or shown as a full screen on the monitor in which it is located. If the window was spanning multiple displays, it will be maximized on the monitor that initially displayed the largest area of the window.
- Dialog boxes or popups that do not have a “parent” window are displayed in the middle of the farthest left or top monitor. Without Wyse TCX Multi-display, most pop-up windows are centered around the border between the two monitors.
- If the dialog or popup has a “parent” window, it is displayed in the middle of the monitor where the parent window is located.
- An application window opens at the location where it was last closed.
- An application window opened in the maximized view is displayed on one monitor.

Clicking **TCX Suite Server Configuration** in the *Start* menu (**Start | Programs | Wyse | TCX Suite Server Configuration**) opens the **TCX Suite Configuration Utility** dialog box. Use this dialog box to configure the server software.

**Note**

After completing your configurations, be sure to click **OK**.

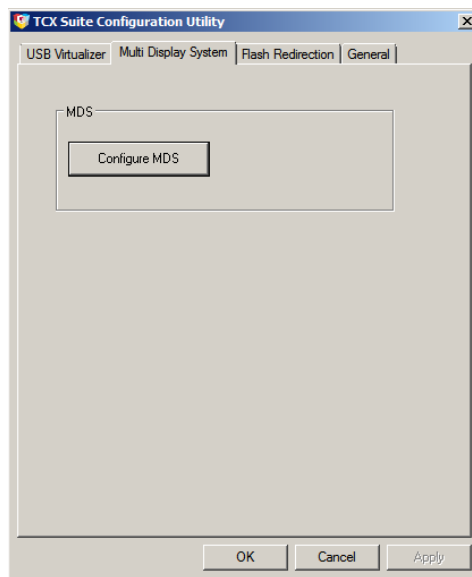
**Caution**

When using multiple monitors, each monitor must be set to the same screen resolution.

**Note**

Clicking **About** on the *General* tab opens an information window displaying the versions of the Wyse TCX Suite Server components installed and a link you can use to navigate to the *Wyse TCX Suite* page on the Wyse Web site.

**Figure 3 TCX Suite Configuration Utility - Multi-display System tab**

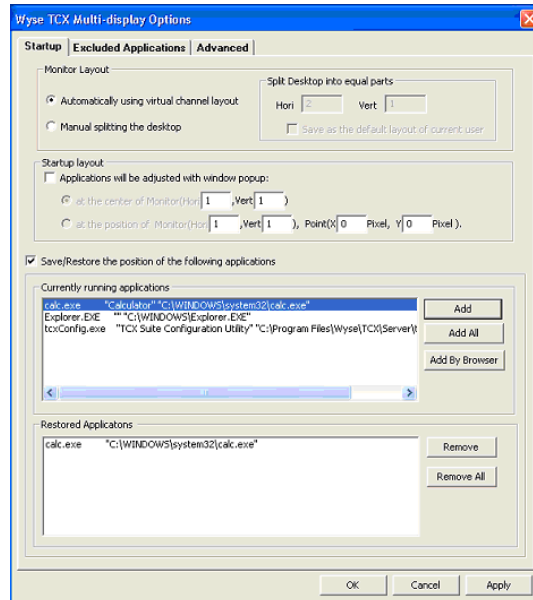


The **Configure MDS** command button on the *Multi Display System* tab allows you to open the **Wyse TCX Multi-display Options** dialog box where you can configure the *Startup*, *Excluded Applications*, and *Advanced* options.

## Step: 1 Configuring Monitor and Startup Layouts

The *Startup* tab allows you to configure the general monitor layout and monitor layout when applications start. It also allows you to manage (save and restore) the monitor position of your applications.

**Figure 4 Wyse TCX Multi-display Options - Multi-display Startup tab**



Use the following guidelines:

- **Monitor Layout** area - Wyse TCX Multi-display leverages the local multiple-monitor configuration settings of the thin client, however, you can change the monitor layout by using the options available in the *Monitor Layout* area.



### Note

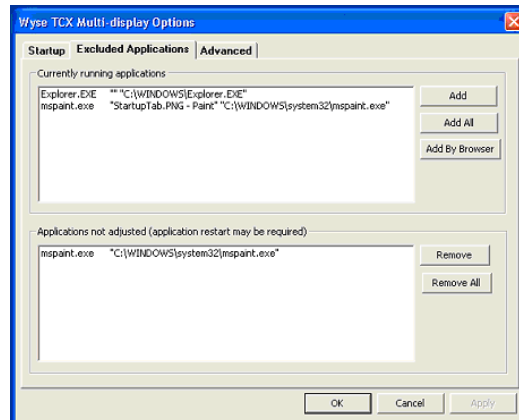
For information on the local multiple-monitor configuration settings for your thin client, refer to the documentation for your thin client product as described in "Related Documentation and Services."

- **Startup Layout** area - Allows you to change the monitor layout when applications start by using the options available in the *Startup Layout* area.
- **Save/Restore** area - Allows you to save or restore the monitor position of the applications in your list of currently running applications (you can use the *Add* command buttons to add selected applications to the *Restored Applications* list and use the *Remove* command buttons to remove them).

### Step: 2 Configuring Excluded Applications

The *Excluded Applications* tab allows you to configure a list of applications to exclude from your configured Wyse TCX Multi-display options (you can use the *Add* command buttons to add selected applications to the *Applications not adjusted* list and use the *Remove* command buttons to remove them).

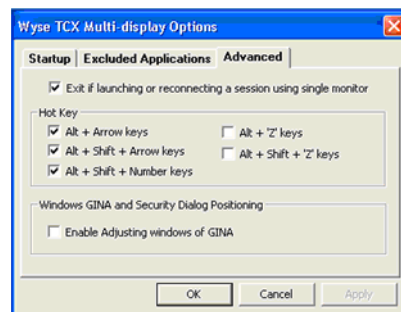
**Figure 5 Multi-display Excluded Applications tab**



### Step: 3 Enabling Advanced Options

The *Advanced* tab allows you to enable available exit, hot key, and GINA logon dialog options.

**Figure 6 Multi-display Advanced tab**



Use the following guidelines:

- **Hot Key** area - After enabling the *Hot Key* options you want, use the key combinations listed in Table 5 to change the display location of an application.

**Table 5 Moving an Application Among Displays**

Keystroke Combination	Application Location
Alt+Left Arrow	The active application moves left to the next display.
Alt+Right Arrow	The active application moves right to the next display.
Alt+Up Arrow	The active application moves up to the next display.
Alt+Down Arrow	The active application moves down to the next display.
Alt+Shift+Left Arrow	All windows move left to the next display.
Alt+Shift+Right Arrow	All windows move right to the next display.
Alt+Shift+Up Arrow	All windows move up to the next display.
Alt+Shift+Down Arrow	All windows move down to the next display.
Alt+Shift+Number key (1-9) Alt+Shift+0	Alt+Shift+Number key (1-9) - All windows move to the corresponding display. The sequence depends on the monitor layout of the Wyse thin client. Alt+Shift+0 - All windows are spread among the displays.
Alt+Z Alt+Shift+Z	Alt+Z - Foreground window scales in size to fit the display without crossing. Alt+Shift+Z - All windows scale in size to fit the display without crossing.

- **Windows GINA and Security Dialog Positioning** area - When using Wyse TCX Multi-display and the Windows Graphical Identification and Authentication (GINA):
  - The *GINA* logon dialog is shown on the display where the mouse cursor is located.
  - *GINA* windows are special windows and must be configured for support. To adjust *GINA*, use “**Gina=yes**” in the global INI file only (*wysehk.ini*) as described in Table 6. To configure *GINA* screen layout, use the layout setting of *mdsci.ifo* (which is introduced by the Wyse TCX Multi-display service and located in the Wyse TCX Suite Server software installation folder; for example, *C:\Program Files\Wyse\TCX\Server\Multi-display*).

**Note**

The *GINA* windows positioning feature is only supported on the 32-bit Windows XP and 32-bit Windows 2003 operating system platforms.

**Note**

Wyse TCX Multi-display supports appropriate positioning of the Windows Security dialog box that appears after the system has been in screen saver mode and the “on resume, password protect” feature is enabled. Third party screen saver applications are not supported.

## Using Wyse TCX Multi-display Parameters in INI Files

Initialization (INI) files are plain-text files that you can construct to contain the configuration information you want for your clients (both on a global level (*wysehk.ini*) and on an individual user level (*user.ini*)). For example, INI files can be used by applications to save information about a user's preferences and operating environment.

Table 6 lists the commands supported in the *user.ini* and *wysehk.ini* files.

The *user.ini* file is located in the following directory:

*C:\Documents and Settings\User\_Name\Application Data\Wyse\Wyse TCX Multi-display*

The *wysehk.ini* file is located in the following directory:

*C:\Program Files\Wyse\Wyse TCX Multi-display*

Except as noted, all commands shown are supported in both types of INI files, and the *user.ini* settings take priority over the *wysehk.ini* settings.

Write all commands in a single line. Use a number sign (#) at the start of the line to change a command to a comment line.



### Note

For more information on creating and using INI files, refer to the INI and administrator documentation for your client operating system and thin client product as described in "Related Documentation and Services."

**Table 6 Wyse TCX Multi-display Parameters for INI files**

Parameter	Description
AdjustTaskBar = {yes, no}	Yes/no option to adjust the windows taskbar to the primary monitor area of the desktop. If value=yes, automatically docks the taskbar to the primary monitor area. If value=no, (no is default) do not adjust the taskbar. Note: Only supported on 32-bit Windows XP and 32-bit Windows 2003. Note: To activate a yes/no option change, you must log out of the session and then log in again.
DisplayTrayIcon={yes, no}	Yes/no option to display the <i>Wyse TCX Multi-display</i> icon in the system tray icon area (yes is default).
Enable={yes, no}	Yes/no option to enable Wyse TCX Multi-display (yes is default).

**Table 6 Wyse TCX Multi-display Parameters for INI files, Continued**

Parameter	Description
Gina={yes, no}	<p>For administrators only.</p> <p>For <i>wysehk.ini</i> file only (this parameter is not supported in the <i>user.ini</i> file).</p> <p>Yes/no option to adjust the GINA windows of winlogon.exe.</p> <p>If value=yes, adjust the GINA windows of winlogon.exe.</p> <p>If value=no, (no is default) disable GINA support.</p> <p>Note: Only supported on 32-bit Windows XP and 32-bit Windows 2003.</p> <p>Note: To configure GINA screen layout, use the layout setting of <i>mdsci.ifo</i> (which is introduced by the Wyse TCX Multi-display service and located in the Wyse TCX Suite Server software installation folder; for example, <i>C:\Program Files\Wyse\TCX\Server\Multi-display</i>).</p>
ExitOnSingleHead={yes, no}	Yes/no option to exit Wyse TCX Multi-display when a session is configured for a single monitor (no is default).
Hori=nX Vert=nY	<p><b>nX</b> represents the horizontal monitor number (1-8)</p> <p><b>nY</b> represents the vertical monitor number (1-8)</p> <p>The descending priority of monitor layout is user.ini, device settings, wysehk.ini (system default).</p>
HotKeyStyle={HOTKEY_ALT_ARROW HOTKEY_SHIFT_ALT_ARROW HOTKEY_SHIFT_ALT_NUM HOTKEY_ALT_Z HOTKEY_SHIFT_ALT_Z}	<p>HOTKEY_ALT_ARROW 0x00000001 // Alt+arrow key (the active application moves to the next display)</p> <p>HOTKEY_SHIFT_ALT_ARROW 0x00000002 // Alt+SHIFT+arrow key (all windows move to the next display)</p> <p>HOTKEY_SHIFT_ALT_NUM 0x00000004 // Alt+SHIFT+number key (1-9), (All windows move to the corresponding display. The sequence depends on the monitor layout of the client. Alt + Shift + 0, all windows are spread among the monitors.)</p> <p>HOTKEY_ALT_Z or 0x00000008 //Alt + Z (the active window scales its size to fit the monitor without crossing).</p> <p>HOTKEY_SHIFT_ALT_Z or 0x00000010 //Alt + Shift + Z (all windows scale its size to fit into monitor without crossing).</p> <p>Note: All values must be separated by  , do not include any blank character, i.e. ' ' or tab character.</p>
OutputLog=2 EncryptLog=No	Enable logging to wysehk.log file

**Table 6 Wyse TCX Multi-display Parameters for INI files, Continued**

Parameter	Description
RecallApp="<process name>" "<application filepath>"	The specified application windows will open in the configured monitor. PROCESS_NAME is the name of the application. APP_FILEPATH is the application file name, including the full path. Note: 1. This function will only take effect with the desktop application (default winstation), it is not supported for the windows of a special winstation (e.g. windows of the logon.exe or windows of the screen saver). 2. The "CMD" window recall is not supported.
SplashWin={yes, no} MonitorX=nX MonitorY=nY LeftTopToMonitor_X=Pixel_X LeftTopToMonitor_Y=Pixel_Y	Yes/no option to enable all windows to open in the configured monitor. <b>nX</b> represents the horizontal monitor number (1-8) <b>nY</b> represents the vertical monitor number (1-8) Pixel_X is the offset between left-top corner of the window and left-top corner of the monitor, the unit is pixel. Pixel_Y is the offset between left-top corner of the window and left-top corner of the monitor, the unit is pixel. Note: Pixel_X/Pixel_Y do not take effect for maximized windows.
UnHookProgram="<process name>" "<application filepath>"	Disables Wyse TCX Multi-display for the specified application. PROCESS_NAME is the name of the application. APP_FILEPATH is the application file name, including the full path.

# 7

## Configuring and Using Wyse® TCX Multimedia™

This chapter contains information on configuring and using Wyse TCX Multimedia. Wyse TCX Multimedia intelligently redirects multimedia processing tasks dynamically between the server and client for a richer user experience.

Notable features include:

- Multi-format awareness capability (unicast: MPEG-1, MPEG-2, MPEG-4 Part 2, WMV-7, WMV-8, WMV-9, WMA, WAV, MP3, AC3, and Multicast: H.264, UDP/RTP MPEG-1, Microsoft MPEG-4 v2, MSB, WMV).
- DirectShow-based media player support (for example, Windows Media Player 11).
- Decoder redirection. Wyse thin clients with supported multimedia codecs installed support this feature. All media content is transferred to the client for rendering. This feature optimizes the audio-video synchronization experience for the user and improves server scalability.
- Rendering redirection. When decoder redirection is not possible, the media content is encoded in a series of efficiently compressed JPEG images and transferred to the client. This results in significant improvement compared to rendering content using the underlying protocol, such as RDP.
- Playlist playback, network-shared clip playback, URL playback, and Web page embedded playback are supported.



### Note

Network bandwidth required will generally be the same as the bitrate of the multimedia file being played.



### Note

MP3 and WMA files are not supported on Windows Vista with any of the thin client platforms.

AVI support (audio: MP3, WMA, AC3; video: MPEG-1, MPEG-2, MPEG-4, part 2) is provided via the availability of corresponding decoders on the connecting thin client (however, .avi files that contain MPEG4 or H.264 are not redirected on Windows 7 or Windows Server 2008 R2). If client side decoders are not available, the functionality will seamlessly fallback to compression of raw video as JPEG images on the server and transmission to client with synchronized audio. This fallback functionality is not supported on Windows Vista as MP3 and WMA files are not supported on Vista.

MPEG-2 support on Windows XPe thin clients requires that a client side decoder is installed.

Wyse TCX Multimedia for XenApp is supported for Wyse thin clients by clearing the **Enable Sound** check box on an ICA connection. In order to disable Wyse TCX Multimedia for XenApp and use the native RAVE (Speed Screen) technology, check the **Enable Sound** check box on an ICA connection.

Playback of H.264 video requires a multiplexer installed where Wyse TCX Suite Server software is installed.

Multicast support for VMware View requires that the virtual desktop terminal server or Xen App server be in a multicast enabled subnet.

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## Configuring the Wyse TCX Multimedia Server Software

After the installation is complete, Wyse TCX Multimedia Server software is enabled by default (where *Wyse TCX Multimedia Service* status in the *Services* applet of the Windows *Administrative Tools* will show as *Started*). However, you can configure the server software for optimal performance according to your needs.

Clicking **TCX Suite Server Configuration** in the *Start* menu (**Start | Programs | Wyse | TCX Suite Server Configuration**) opens the **TCX Suite Configuration Utility** dialog box. Use this dialog box to configure the server software.

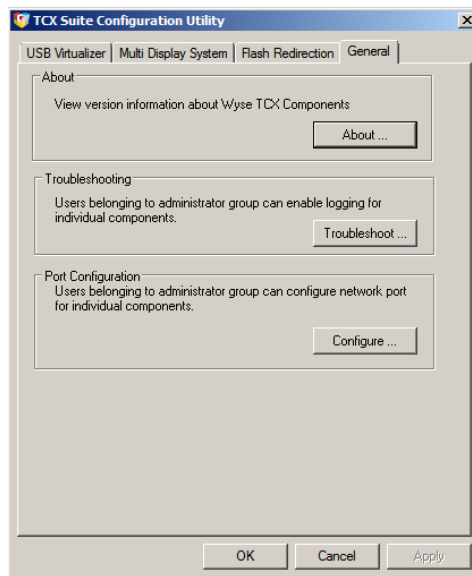


### Note

After completing your configurations, be sure to click **OK**.

The *General* tab allows you to display software versions, set logging preferences, and set the main port for server and client communication.

**Figure 7 TCX Suite Configuration Utility - General tab**



Use the following guidelines:

- **About** - Opens an information window displaying the versions of the Wyse TCX Suite Server components installed and a link you can use to navigate to the *Wyse TCX Suite* page on the Wyse Web site.
- **Troubleshooting** - Opens the **Troubleshooting** dialog box where you can enable and set logging preferences. Use the following guidelines:
  - **Enable Logging** - Select to enable logging and allow the selection of *Level* and *Type*:
    - **Level** - Select either **Basic** (for higher level success and error information) or **Advanced** (for more detailed debugging information).

- **Type** - Select either **DebugView** (*Recommended* - where log information will be logged to standard debug output, and will be viewable through a utility such as DebugView) or **LogFile** (used for special development purposes where logs will be logged to the application console).
- **Configure** - Opens the **Port Configuration** dialog box where you can enter the main communication port for Wyse TCX Multimedia (Wyse TCX Multimedia Server and Client components communicate using this port number - default is **9427**).

**Note**

If the Wyse TCX Multimedia Server component will attempt to establish a socket connection with the thin client on one port (starting with the defined port number and continuing within a range of 32 ports). If the server component fails to make a connection with the defined port number, then the connection is established on one port in the default port number range (9427 to 9427+31 inclusive).

## Wyse TCX Multimedia Server Performance for WAN

To improve the performance of Wyse TCX Multimedia on WAN, modify the SO\_SNDBUFF (SendBuffer) on the server using the following registry entry:

**[HKLM\SOFTWARE\Wyse\TCX\SERVER\MULTIMEDIA\MULTIMEDIA SUPPORT]**

**“SendBuff”=dword:0xXXXX**

**Note**

For Wyse ThinOS-based clients, set the following parameter in the wnos.ini file:

**MMRTcpScale={0-6}**

This changes the TCP window scale option from the default value of 0 to a value of 0~6. For general information on the TCP window scale option, refer to: [http://en.wikipedia.org/wiki/TCP\\_window\\_scale\\_option](http://en.wikipedia.org/wiki/TCP_window_scale_option)

## Configuring the Wyse TCX Multimedia Client Software

After the installation is complete, Wyse TCX Multimedia Client software is enabled by default. However, you can configure the client software for optimal performance according to your needs.

Clicking **TCX Suite Client Configuration** in the *Start* menu (**Start | Programs | Wyse | TCX Suite Client Configuration**) opens the **Configuration Utility** dialog box. Use this dialog box to configure the client software.

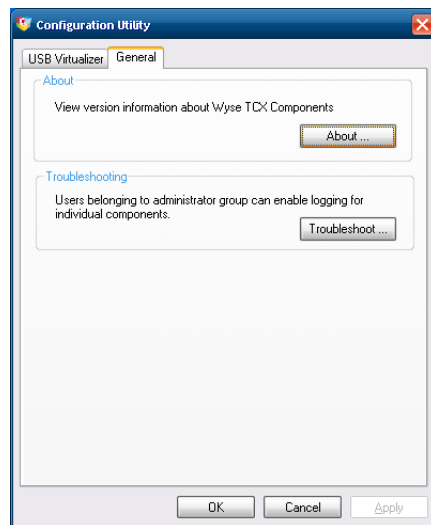


### Note

After completing your configurations, be sure to click **OK**.

The *General* tab allows you to display software versions and set logging preferences.

**Figure 8 Client Configuration Utility - General tab**



Use the following guidelines:

- **About** - Opens an information window displaying the versions of the Wyse TCX Suite Client components installed and a link you can use to navigate to the *Wyse TCX Suite* page on the Wyse Web site.
- **Troubleshooting** - Opens the **Troubleshooting** dialog box where you can enable and set logging preferences on the *Multimedia* tab. Use the following guidelines:
  - **Enable Logging** - Select to enable logging and allow the selection of *Level* and *Type*:
    - **Level** - Select either **Basic** (for higher level success and error information) or **Advanced** (for more detailed debugging information).
    - **Type** - Select either **DebugView** (*Recommended* - where log information will be logged to standard debug output, and will be viewable through a utility such as DebugView) or **LogFile** (used for special development purposes where logs will be logged to the application console).

---

## Using Wyse TCX Multimedia Software

This section includes information on:

- "Using URL Redirection on Wyse ThinOS-based Clients"
- "Enabling Multicast Support for Windows Media Content"

### Using URL Redirection on Wyse ThinOS-based Clients

For Wyse thin clients URL redirection sends an original URL with multimedia content directly to the thin client for processing, reducing load on the server and providing increased scalability. There are two types of URL redirection:

- *URL Redirection* is a standard supported via HTTP/HTTPS/FTP for \*.mpg files. This type of redirection does not require any special modifications. The server and thin client negotiate by default whether to take advantage of URL redirection for these files.
- *Custom URL Redirection* provides redirection for a Custom Type URL (for example, qvmc://...). This type of redirection requires special changes to the Windows registry on the server. The following sections ("Supporting Custom URL Redirection," "Supporting Custom Transport Registration," "Wyse-specific Registry Entries for URL Redirection," and "URL Redirection: An Example Using QVMC") provide specific instructions on how to set up custom URL redirection.

### Supporting Custom URL Redirection

The server must be a Windows-based machine. When Windows Media Player attempts to play a URL, the player parses the initial part of the URL and determines the correct source filter to load. Windows Media Player does not play all udp:// or rtp:// based links. The default udp or rtp filter cannot process links from other hardware or software based streaming servers such as VLC, Minerva, or Darwin.

To support the playback of standard udp or rtp based streams on Windows Media Player, various third party vendors have developed their own source filters with different URL primitives. For example, QVMC-based URLs begin with qvmc://; Elecard-based URLs begin elec\_card\_rtsp://. These URLs are designed to play streams from standard streaming servers. When the URL is played, either the QVMC or Elecard source filter is loaded, as needed.

Wyse ThinOS thin client devices support standard rtp and udp protocols for streaming media. However, URL playback is only possible if the Wyse URL Redirection SRC filter can be registered for such protocols. To enable URL redirection you must first create specific registry entries, as explained in the following sections ("Supporting Custom Transport Registration," and "URL Redirection: An Example Using QVMC"). This allows the Wyse Multimedia server to convert a custom-based URL (such as qvmc:// or elec\_card\_rtsp://) to an rtp URL and send it to the thin client for processing.

## Supporting Custom Transport Registration

Any custom transport type can be registered with DirectShow. Therefore, whenever a custom URL is found, DirectShow searches for the right source filter based on registry entry and loads it.

A custom registry entry should follow this format:

```
HKEY_CLASSES_ROOT
  <protocol>
    Source Filter = <Source filter CLSID>
    Extensions
      <.ext1> = <Source filter CLSID>
      <.ext2> = <Source filter CLSID>
```

For more information on registering a custom file type, refer to Microsoft documentation at: <http://msdn2.microsoft.com/en-us/library/ms787558.aspx>.

## Wyse-specific Registry Entries for URL Redirection

The following is the tree of Wyse-specific registry entries you must create for URL redirection of custom URL types:

```
HKEY_LOCAL_MACHINE/Software/Wyse/Multimedia Support/Transports
  <protocol>

  Real Transport = <url primitive>
  Real Transport X1 = < url primitive >
  Real Transport X2 = < url primitive >
  .
  .
  .
  Alternate Source Filter = <Source filter CLSID>

  Extensions
  <.ext1> = <Source filter CLSID>
  <.ext2> = <Source filter CLSID>
```

There can be several Real Transport X entries. Each X entry represents a client type. Each client type is assigned a number. The X is replaced by the appropriate client number for that client: for example, the Wyse V10L™ thin client uses client number 3.

Real Transport stores the replacement for the original URL primitive. The user can also have a Real Transport entry. This is the default entry. If the Wyse URL SRC filter does not find a specific entry for Real Transport, then it selects the default entry.

<Source filter CLSID> is always a string value stored in format: "{XXXXXXXX-XXXX-XXXX-XXXX-XXXXXXXXXXXX}"

<.ext1> is the file extension and is stored in the format .mpg, .wmv, and so on.

Whenever a custom transport type is registered to use the Wyse URL SRC filter, the filter (based on these registry entries) sends a URL to the thin client or carries out a decoder redirection by loading the appropriate src filter on the server side.

If a user enters a URL such as qvmc://..., and the above mentioned registry entries exist, and the Wyse URL SRC filter is registered for a qvmc transport type, then the Wyse URL SRC filter can make the following decisions for URL playback (in the priority listed):

1. The Wyse URL SRC filter always attempts to carry out URL redirection first. If the filter finds a matching Real Transport X entry with matching thin client type, then the URL is modified and sent to the thin client. If no Real Transport X entry is found, then the

default Real Transport entry is selected. If the Real Transport default entry does not exist, then the filter will send the URL as typed by the user to the thin client.

2. If the thin client fails using the URL type as described in 1, then the Wyse URL SRC filter attempts to carry out decoder redirection by loading the appropriate src filter on the server side. Priority is given to loading an extension-based src filter (.extension).
3. If the Wyse URL SRC filter is unable to find an entry based on .extension as described in item 2 in this list, then the filter attempts to load the source filter based on the alternate source filter type entry.
4. If the Wyse URL SRC filter is unable to find an alternate source filter type entry as described in item 3, then a standard DirectShow URL filter is loaded for decoder redirection.

## URL Redirection: An Example Using QVMC

For QVMC URL redirection, first create the following registry entry:

```
[HKEY_CLASSES_ROOT\Qvmc]
"Source Filter"="{ca5d5362-6720-4666-8405-3928915f9571}"
```

The above CLSID is that of the Wyse URL SRC filter. This will ensure that whenever `qvmc://...` is typed, the Wyse URL SRC filter is loaded.

Next, create the following entries:

```
[HKEY_LOCAL_MACHINE\Software\Wyse\Multimedia Support\Transports\Qvmc]
"Alternate Source Filter"="{AB3499B0-949F-11D4-BAB8-0000863E0FD8}"
```

```
"real transport"="udp"
```

```
"real transport 3"="qvmc"
```

```
[HKEY_LOCAL_MACHINE\Software\Wyse\Multimedia
Support\Transports\Qvmc\Extensions]
```

As a result of these entries, when a Wyse V10L™ thin client user enters `qvmc://<multicast ip>:<portno>` as the URL, real transport is used and `qvmc` is replaced by `udp` (because there are no real transport entries specific to this thin client type). The URL sent to the thin client will be `udp:// <multicast ip>:<portno>`.

For the Wyse V10L™ thin client, real transport 3 is selected. The entry is the same as the original URL primitive.

If the thin client is unable to play the URL and returns 'false' to the server, the server attempts a decoder redirection by selecting the CLSID from an Alternate Source Filter entry in the registry. The CLSID mentioned above is the CLSID of the `qvmc` src filter.

If the user enters a URL such as `qvmc://10.150.5.15:2000/Olympic.mpg` and URL redirection fails, the Wyse URL SRC filter attempts a decoder redirection based on an Alternate Source Filter entry, since there are no entries under the `.../extensions` key.

## Enabling Multicast Support for Windows Media Content

There are two ways to achieve multicast support for Windows media content using Wyse Multimedia Redirection:

- Decoder Redirection (see "Using Decoder Redirection")
- URL Source Redirection (see "Using URL Source Redirection")



### Note

URL redirection reduces the load on the server. The **seek** function of Windows Media Player is disabled when URL redirection is used.

### Using Decoder Redirection

With decoder redirection, the server receives the URL, parses it, extracts the media data, and then sends the media data to the client. The client receives the media data and connects to the appropriate decoder for the media format, and then renders the content. The CPU load is shared between the client and the server. Decoder redirection requires no change to the server registry.

The user can either type the URL of the **.nsc** file into a browser address window or click the **.asx** file to start Windows Media Player and view the content (the **seek** and **pause** functions of Windows Media Player are disabled when decoder redirection is used).

### Using URL Source Redirection

With URL source redirection, the server sends the URL directly to the client, which parses the URL, decodes it based on the media format, and then renders it. No server CPU cycles are used for playback.

To enable URL source redirection:

- Modify the URL or the **.asx** file (see "Modifying the URL" or "Modifying the .asx File")
- Modify the server registry (see "Modifying the Server Registry")

#### Modifying the URL

To modify the URL, type the URL of the **.nsc** file in Windows Media Player with these changes:

1. Change **http** to **multicast\_http**.
2. Change **.nsc** to **multicast\_nsc**.

Example:

Original URL: **http:\xx.xxx.x.xxx\medianame.nsc**

Change to: **multicast\_http:\xx.xxx.x.xxx\medianame.multicast\_nsc**

#### Modifying the .asx File

The announcement file (.asx) contains the location of the multicast information file (.nsc). The **.asx** file is an XML file that can be played in Windows Media Player by associating it with the Windows Media Player executable file.

To modify the **.asx** file, make these changes to the <ref href> source:

1. Change **http** to **multicast\_http**.
2. Change **.nsc** to **multicast\_nsc**.

Example:

Original **.asx** file

```
<asx version = "3.0">
  <entry>
    <ref href = "http://10.150.5.84/abc.nsc"/>
    <Title>WysePP</Title>
    <Author></Author>
    <Copyright></Copyright>
    <Banner></Banner>
  </entry>
  <Title>WysePP</Title>
  <Author></Author>
  <Copyright></Copyright>
  <Banner></Banner>
  <LogURL href = ""/>
</asx>
```

Modified **.asx** file:

```
<asx version = "3.0">
  <entry>
    <ref href = "multicast_http://10.150.5.84/abc.multicast_nsc"/>
    <Title>WysePP</Title>
    <Author></Author>
    <Copyright></Copyright>
    <Banner></Banner>
  </entry>
  <Title>WysePP</Title>
  <Author></Author>
  <Copyright></Copyright>
  <Banner></Banner>
  <LogURL href = ""/>
</asx>
```

### Modifying the Server Registry

To use URL redirection, change the server registry.

1. Add following protocol and source filter entry at the **HKEY\_CLASSES\_ROOT**:

```
HKEY_CLASSES_ROOT
  <multicast_http>
    Source Filter = <{ca5d5362-6720-4666-8405-3928915f9571}>
```

2. Make the following changes for transports and extensions at the **HKEY\_LOCAL\_MACHINE**:

```
HKEY_LOCAL_MACHINE/SOFTWARE/WYSE/multimedia support/transports
  <multicast_http>
  Real Transport = http : string type
```

```
HKEY_LOCAL_MACHINE/SOFTWARE/WYSE/multimedia support/extensions
  <.multicast_nsc>
```

```
Real Extension = .nsc : string type
```

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# 8

## Configuring and Using Wyse® TCX Rich Sound™

This chapter contains information on configuring and using Wyse TCX Rich Sound. Wyse TCX Rich Sound enables the zero-compromise deployment of virtual desktops and applications with the capability of receiving and transmitting high quality audio (provides bi-directional audio capabilities for virtual desktops and applications, and supports sound recording and playback applications).

Users can use a USB headset directly attached to the Wyse thin client to input and output audio to and from IP soft phone applications such as Cisco IP Communicator, Avaya Softphone, and Elluminate running in a Microsoft Windows XP Pro virtual desktop. With its high quality bi-directional audio capabilities, Wyse TCX Rich Sound is qualified for use in LAN deployments.

Notable features include:

- Using any analog headset or supported USB headset attached to Wyse thin clients, Wyse TCX Rich Sound supports Microsoft RDP for use in VDI environments, Citrix PortICA in XenDesktop environments, and Citrix ICA in XenApp environments.
- Recording and playback using Windows Sound Recorder.
- Audio playback using Windows Media Player and VLC Player.
- Smooth audio playback of You Tube content.
- Experimental support for instant messaging tools like Google Talk and Skype (v 2.5.0.154).

---

### Supported Hardware Peripherals

The following peripherals have been validated (other headsets are experimentally supported):

- Analog headsets include:
  - GE Analog headset
  - Phillips SHM 3100
- USB headsets include:
  - Logitech ClearChat Comfort
  - Logitech- 981-000015

---

### Required Sound Recorder Quality

Wyse TCX Rich Sound best supports sound recorder audio format of PCM 16.000 kHz, 16 Bit, Mono or higher.

## Configuring the Wyse TCX Rich Sound Server Software

After the installation is complete, Wyse TCX Rich Sound Server software is enabled by default (where *Wyse TCX Rich Sound Service* status in the *Services* applet of the *Windows Administrative Tools* will show as *Started*). However, you can configure the server software for optimal performance according to your needs.

Clicking **TCX Suite Server Configuration** in the *Start* menu (**Start | Programs | Wyse | TCX Suite Server Configuration**) opens the **TCX Suite Configuration Utility** dialog box. Use this dialog box to configure the server software.

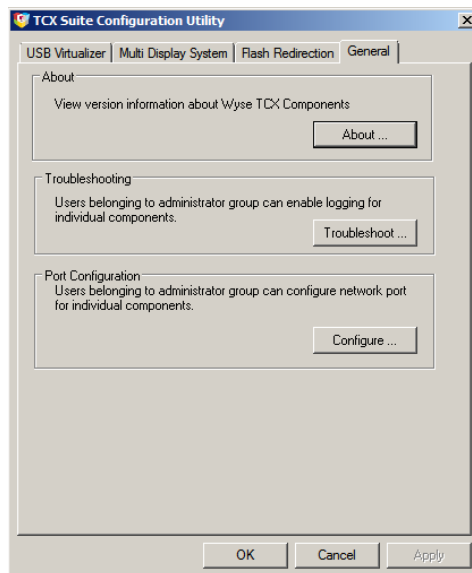


### Note

After completing your configurations, be sure to click **OK**.

The *General* tab allows you to display software versions, set logging preferences, and set the main port for server and client communication.

**Figure 9 TCX Suite Configuration Utility - General tab**



Use the following guidelines:

- **About** - Opens an information window displaying the versions of the Wyse TCX Suite Server components installed and a link you can use to navigate to the *Wyse TCX Suite* page on the Wyse Web site.
- **Troubleshooting** - Opens the **Troubleshooting** dialog box where you can enable and set logging preferences. Use the following guidelines:
  - **Enable Logging** - Select to enable logging and allow the selection of *Level* and *Type*:
    - **Level** - Select either **Basic** (for higher level success and error information) or **Advanced** (for more detailed debugging information).
    - **Type** - Select either **DebugView** (*Recommended* - where log information will be logged to standard debug output, and will be viewable through a utility such as DebugView) or **LogFile** (used for special development purposes where logs will be logged to the application console).
- **Configure** - Opens the **Port Configuration** dialog box where you can enter the main communication port for Wyse TCX Rich Sound (Wyse TCX Rich Sound Server and Client components communicate using this port number - default is **6901**).

## Configuring the Wyse TCX Rich Sound Client Software

After the installation is complete, Wyse TCX Rich Sound Client software is enabled by default. However, you can configure the client software for optimal performance according to your needs.

Clicking **TCX Suite Client Configuration** in the *Start* menu (**Start | Programs | Wyse | TCX Suite Client Configuration**) opens the **Configuration Utility** dialog box. Use this dialog box to configure the client software.

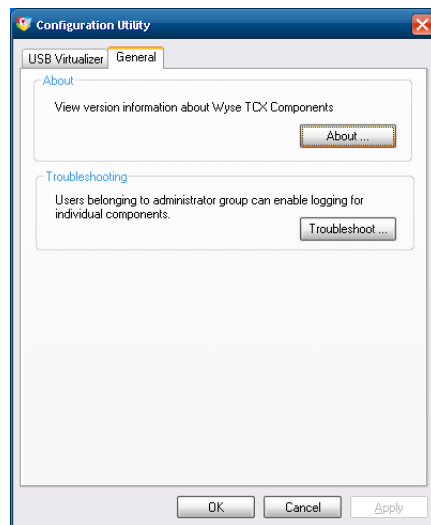


### Note

After completing your configurations, be sure to click **OK**.

The *General* tab allows you to display software versions and set logging preferences.

**Figure 10 Client Configuration Utility - General tab**



Use the following guidelines:

- **About** - Opens an information window displaying the versions of the Wyse TCX Suite Client components installed and a link you can use to navigate to the *Wyse TCX Suite* page on the Wyse Web site.
- **Troubleshooting** - Opens the **Troubleshooting** dialog box where you can enable and set logging preferences on the *Rich Sound* tab. Use the following guidelines:
  - **Enable Logging** - Select to enable logging and allow the selection of *Level* and *Type*:
    - **Level** - Select either **Basic** (for higher level success and error information) or **Advanced** (for more detailed debugging information).
    - **Type** - Select either **DebugView** (*Recommended* - where log information will be logged to standard debug output, and will be viewable through a utility such as DebugView) or **LogFile** (used for special development purposes where logs will be logged to the application console).

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# 9

## Configuring and Using Wyse® TCX USB Virtualizer™

This chapter contains information on configuring and using Wyse TCX USB Virtualizer. Wyse TCX USB Virtualizer makes client attached USB devices visible to virtual desktops and applications (removes any compromises on limited local device drivers for a broad range of USB-based printers, scanners, storage devices, Palm, BlackBerry, Pocket PC handhelds, webcams and headsets).

---

### Hardware Peripherals Supported

Wyse TCX USB Virtualizer performs port-level redirection, so the USB device attached to a thin client is recognized by the remote operating system as a local USB device. This enables more functionality than basic device-level redirection.

Wyse has verified support for the types of USB devices shown in Table 7.

**Table 7 USB Devices Verified by Wyse for Wyse TCX USB Virtualizer**

Device Type	Make/Model
Printer	HP Laserjet 1320, HP Deskjet 1280
Scanner	DocketPORT 465
PDA/Blackberry	8820 Smartphone (Edge, WiFi), 8700G, 7100-T Mobile
Floppy Disk Drive	Sony Floppy Drive, Enter Floppy Drive
USB Flash Drive	Crucial, SanDisk, Transcend
CD ROM	IBM USB CD-ROM drive, Adonics CD-ROM drive
Webcam	Microsoft LifeCam VX-1000, Microsoft LifeCam VX-3000, Logitech QuickCam Pro 9000 (Experimental support only)
Headset	Microsoft LifeChat LX-3000, Logitech ClearChat Comfort USB
Biometric	Digital Persona 4000B reader
USB Zip Drive	IOMEGA USB Powered Zip 250 Drive
Special	Bloomberg keyboards

## Configuring the Wyse TCX USB Virtualizer Server Software

After the installation is complete, Wyse TCX USB Virtualizer Server software is enabled by default (where *Wyse TCX USB Virtualizer Service* status in the *Services* applet of the *Windows Administrative Tools* will show as *Started*). However, you can configure the server software for optimal performance according to your needs.

Clicking **TCX Suite Server Configuration** in the *Start* menu (**Start | Programs | Wyse | TCX Suite Server Configuration**) opens the **TCX Suite Configuration Utility** dialog box. Use this dialog box to configure the server software.



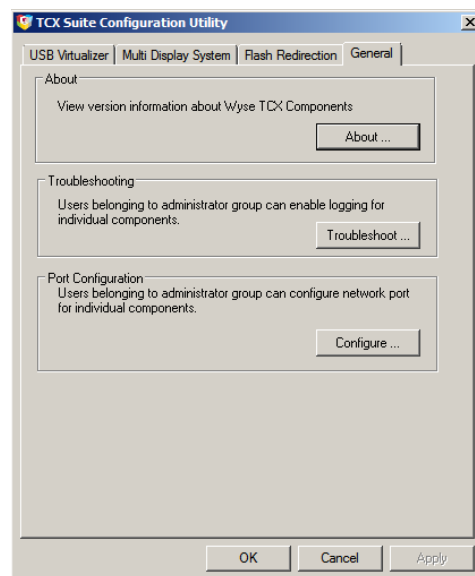
### Note

After completing your configurations, be sure to click **OK**.

### Step: 1 Configuring General Preferences

The *General* tab allows you to display software versions, set logging preferences, and set the main port for server and client communication.

**Figure 11 TCX Suite Configuration Utility - General tab**



Use the following guidelines:

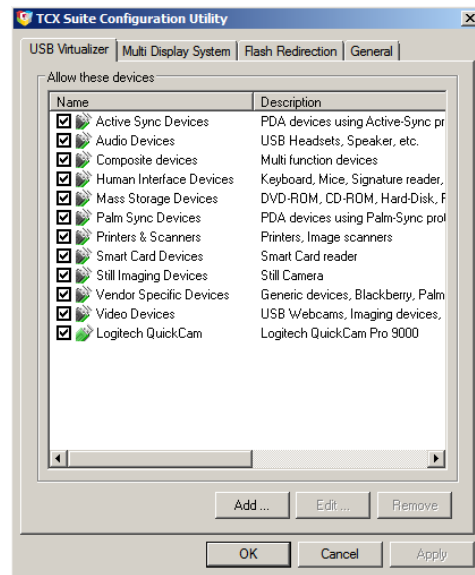
- **About** - Opens an information window displaying the versions of the Wyse TCX Suite Server components installed and a link you can use to navigate to the *Wyse TCX Suite* page on the Wyse Web site.
- **Troubleshooting** - Opens the **Troubleshooting** dialog box where you can enable and set logging preferences. Use the following guidelines:
  - **Enable Logging** - Select to enable logging and allow the selection of *Level* and *Type*:
    - **Level** - Select either **Basic** (for higher level success and error information) or **Advanced** (for more detailed debugging information).
    - **Type** - Select either **DebugView** (*Recommended* - where log information will be logged to standard debug output, and will be viewable through a utility such as DebugView) or **LogFile** (used for special development purposes where logs will be logged to the file found in *C:\usbv.log*).

- **Configure** - Opens the **Port Configuration** dialog box where you can enter the main communication port for Wyse TCX USB Virtualizer (Wyse TCX USB Virtualizer Server and Client components communicate using this port number - default is **17185**).

## Step: 2 Setting Redirection Preferences

The *USB Virtualizer* tab allows you to enable redirection for devices and device classes that are available in your device list. It also allows you to manage (add, edit, and remove) your devices list.

**Figure 12 TCX Suite Configuration Utility - USB Virtualizer tab**



Use the following guidelines:

- **Allow these devices** - Select the check box next to the name of a device or class of devices to enable redirection for the item. Allowing redirection for a class of devices means that all devices of that type (for example, printers) will be redirected.
- **Add** - Opens the **Add** dialog box allowing you to add a device (click the **USB Device** option, enter the device information, and then click **Add**) or class of devices (click the **USB Class** option, enter the class information, and then click **Add**) to the list of devices for which you can enable redirection.



### Caution

Selecting the **Allow this USB Device** or **Allow this USB Class** check box in the **Add** dialog box allows users to redirect the device or device class. If you *do not* select the check boxes and a non-administrator attempts to redirect the device or device class, a “redirection restricted” message displays informing the user that redirection is *not* allowed. If you *do not* select the check boxes and an administrator attempts to redirect the device or device class, a “security” message displays informing the user that redirection is restricted for whatever reason, however, the administrator can select a redirect option.

- **Edit** - Opens the **Edit** dialog box allowing you to edit the information of a device or class of devices (click the name of the item in the list of devices, click **Edit**, enter the device or class information, and then click **Update**).

**Note**

When editing a *USB Device*, you cannot modify the *Vendor ID* and *Product ID* (these are *key* items of the database). When editing a *USB Class*, you cannot modify the *Class* (this is a *key* item of the database). If you must edit *key* item information, you must first remove the device or device class from the list and then add the device or device class (with the *key* item information you want) to the list.

- **Remove** - Allows you to remove a device or class of devices the list of devices for which you can enable redirection (click the name of the item in the list of devices, click **Remove**, and then click **OK**).

---

## Configuring the Wyse TCX USB Virtualizer Client Software

**Note**

The Wyse TCX USB Virtualizer Client Software GUI is supported on Windows XP Embedded and Windows Embedded Standard only.

Clicking **TCX Suite Client Configuration** in the *Start* menu (**Start | Programs | Wyse | TCX Suite Client Configuration**) opens the **Configuration Utility** dialog box. Use this dialog box to configure the client software.

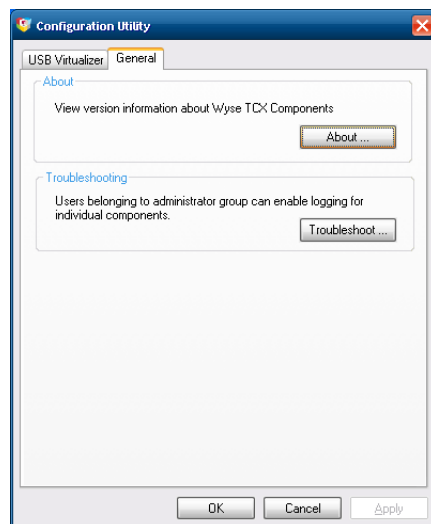
**Note**

After completing your configurations, be sure to click **OK**.

### Step: 1 Configuring General Preferences

The *General* tab allows you to display software versions and set logging preferences.

**Figure 13 Client Configuration Utility - General tab**



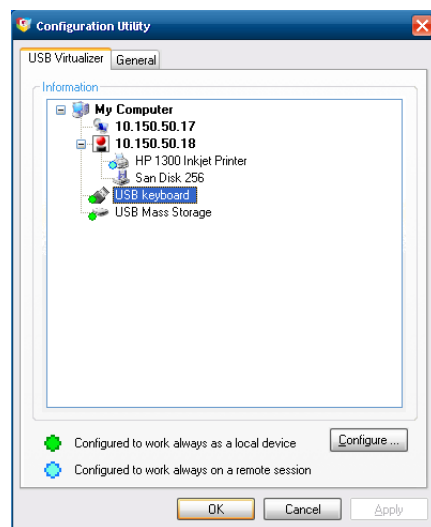
Use the following guidelines:

- **About** - Opens an information window displaying the versions of the Wyse TCX Suite Client components installed and a link you can use to navigate to the *Wyse TCX Suite* page on the Wyse Web site.
- **Troubleshooting** - Opens the **Troubleshooting** dialog box where you can enable and set logging preferences on the *USB Virtualizer* tab. Use the following guidelines:
  - **Enable Logging** - Select to enable logging and allow the selection of *Level* and *Type*:
    - **Level** - Select either **Basic** (for higher level success and error information) or **Advanced** (for more detailed debugging information).
    - **Type** - Select either **DebugView** (*Recommended* - where log information will be logged to standard debug output, and will be viewable through a utility such as DebugView) or **LogFile** (used for special development purposes where logs will be logged to the application console).

## Step: 2 Adding and Configuring Devices to Work Locally or Remotely

The *USB Virtualizer* tab allows you to pre-configure devices to work locally or remotely. It also allows you to manage (add and remove) your devices list.

**Figure 14 Client Configuration Utility - USB Virtualizer tab example**



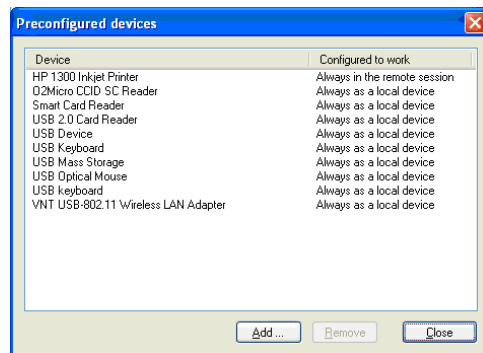
### Note

In the example (see Figure 14) the client machine is connected to two servers, one with an RDP application (10.150.50.17) and other with an ICA application (10.150.50.18). Note that the HP 1300 Inkjet Printer and the San Disk 256 devices are already redirected to the ICA 10.150.50.18 session. Note also that some devices have a green or blue overlay dot to signify that those devices are preconfigured to work *only* locally (green) or *only* remotely (blue). In addition, note that the San Disk 256 is an unconfigured device, which will be available *both* locally (when there is no remote session) *and* remotely (when there is a remote session, it will be redirected to the server and will be available on the remote machine).

Use the following guidelines:

- **Green and Blue Overlay Dots** - Signify that those devices are preconfigured to work *only* locally (green) or *only* remotely (blue). If a device is configured to always work on a remote machine (blue), this device will be in a “ready-to-redirect” state when there is no remote session and will not be available for the local user. If a device is configured to always work locally (green), this device will never be redirected to any server. Devices in a “ready-to-redirect” state are shown in gray and italicized.
- **Drag-and-Drop Functionality** - You can drag a device from one session to another, thereby selectively redirecting the device to a particular session. However, when you drag a redirected device (either preconfigured or un-configured) to the local machine, the device will be in a “ready-to-redirect” state.
- **Right-Click Functionality** - You can pre-configure a device by right clicking and selecting an option. You can also uncheck the option to un-configure the device.
- **Configure** - Opens the **Preconfigured devices** dialog box allowing you to view and manage (add and remove) your preconfigured devices (to add a device, click **Add** to open and use the **Add** dialog box; to remove a device, click the name of the item in the list of devices and click **Remove**).

**Figure 15 Preconfigured devices - USB Virtualizer Client**



#### Note

When managing a device, any changes made to the configuration database will be reflected only *after* the device is detached and reattached.

# 10 Uninstalling and Troubleshooting

This chapter provides instructions on uninstalling Wyse TCX Suite server and client software, and general troubleshooting information.

It includes:

- "Uninstalling the Wyse TCX Suite Server Software"
- "Uninstalling the Wyse TCX Suite Client Software"
- "Stopping, Starting, and Verifying Wyse TCX Suite Services"
- "Using Event Viewer for Server Troubleshooting"
- "Configuring INI Files to Support Isochronous Devices (Headsets and Webcams)"

---

## Uninstalling the Wyse TCX Suite Server Software

You can uninstall the Wyse TCX Suite Server software using either the standard uninstallation method (see "Performing a Standard Uninstallation on the Server") or the silent uninstallation method (see "Performing a Silent Uninstallation on the Server").

### Performing a Standard Uninstallation on the Server

To uninstall the Wyse TCX Suite Server software, use the Microsoft Windows *Add or Remove Programs* feature and the following guidelines:

1. Click **Start | Control Panel** to open *Control Panel*.
2. Double-click **Add or Remove Programs** to open the list of currently installed programs.
3. Select **Wyse TCX Server Suite** and click **Remove**.

---

#### **Note**

Using the Microsoft Windows *Add or Remove Programs* feature to uninstall the Wyse TCX Suite Server software removes *all* Wyse TCX Suite Server software components. If you want to uninstall specific Wyse TCX Suite Server software components, use the selective uninstallation option as described in "Performing a Silent Uninstallation on the Server."

## Performing a Silent Uninstallation on the Server

Use the following guidelines:

1. Ensure *Wyse TCX Server* service is not running by clicking **Start | Run | services.msc** and checking that the *Wyse TCX Server* service is stopped.
2. Open a *Command Prompt* window (click **Start | Run**, enter **cmd**, and click **OK**).
3. Navigate to the directory where the file you need to uninstall (for example, *Wyse TCX Server Suite\_prod64.msi*) is located.
4. At the command prompt, use the following guidelines (where *TCX Flash Acceleration=FLASH*, *TCX Multi-display=MDS*, *TCX Multimedia=MMR*, *TCX Rich Sound=VOIP*, and *TCX USB Virtualizer=USB*):
  - Silent uninstallation of all Wyse TCX Suite Server components, enter:  
**C:\>msiexec /x "<path where msi is located>\Wyse xxx.msi" /q**
  - Silent uninstallation of selective Wyse TCX Suite Server components (for example, uninstall all components except *TCX Multimedia*, enter (using the format for the solutions in our example where you must add the components you do not want uninstalled):  
**C:\>msiexec /x "<path where msi is located>\Wyse xxx.msi" /q MMR="1"**

---

## Uninstalling the Wyse TCX Suite Client Software

**(Clients running Windows XP Embedded, Windows Embedded Standard, Windows XP Professional, or Windows 7 Only)** You can uninstall the Wyse TCX Suite Client software using either the standard uninstallation method (see "Performing a Standard Uninstallation on the Client") or the silent uninstallation method (see "Performing a Silent Uninstallation on the Client").

**Note**

The Wyse TCX Suite Client software is embedded in the firmware for Wyse thin clients running Wyse ThinOS or Linux and you cannot uninstall the software.

### Performing a Standard Uninstallation on the Client

To uninstall the Wyse TCX Suite Client software, use the Microsoft Windows *Add or Remove Programs* feature and the following guidelines:

1. Click **Start | Control Panel** to open *Control Panel*.
2. Double-click **Add or Remove Programs** to open the list of currently installed programs.
3. Select **Wyse TCX Client Suite** and click **Remove**.

**Note**

Using the Microsoft Windows *Add or Remove Programs* feature to uninstall the Wyse TCX Suite Client software removes *all* Wyse TCX Suite Client software components. If you want to uninstall specific Wyse TCX Suite Client software components, use the selective uninstallation option as described in "Performing a Silent Uninstallation on the Client."

### Performing a Silent Uninstallation on the Client

Use the following guidelines:

1. Ensure Wyse TCX Suite Client software is not running.
2. Open a *Command Prompt* window (click **Start | Run**, enter **cmd**, and click **OK**).
3. Navigate to the directory where the **Wyse TCX Client Suite.msi** file is located.
4. At the command prompt, use the following guidelines (where *TCX Flash Acceleration=FLASH*, *TCX Multi-display=MDS*, *TCX Multimedia=MMR*, *TCX Rich Sound=VOIP*, and *TCX USB Virtualizer=USB*):
  - Silent uninstallation of all Wyse TCX Suite Client components, enter:  
**C:\>msiexec /x "<path where msi is located>\Wyse xxx.msi" /q**
  - Silent uninstallation of selective Wyse TCX Suite Client components (for example, uninstall all components except *TCX Multimedia*, enter (using the format for the solutions in our example where you must add the components you do not want uninstalled):  
**C:\>msiexec /x "<path where msi is located>\Wyse xxx.msi" /q MMR="1"**

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## Stopping, Starting, and Verifying Wyse TCX Suite Services

After the installation is complete, Wyse TCX Suite Server software is enabled by default (where *Wyse TCX Flash Redirection (Acceleration) Service*, *Wyse TCX Multi-display Service*, *Wyse TCX Multimedia Service*, *Wyse TCX Rich Sound Service*, and *Wyse TCX USB Virtualizer Service* status in the *Services* applet of the *Windows Administrative Tools* will each show as *Started*). However, you can stop and start a service by using the *Services* applet (right-click the name of the service you want and select **Stop** or **Start**). For information on configuring the Wyse TCX Suite Server software, refer to:

- "Configuring the Wyse TCX Flash Acceleration Server Software"
- "Configuring the Wyse TCX Multi-display Server Software"
- "Configuring the Wyse TCX Multimedia Server Software"
- "Configuring the Wyse TCX Rich Sound Server Software"
- "Configuring the Wyse TCX USB Virtualizer Server Software"

**Note**

You can use the *Services* applet in the *Windows Administrative Tools* to view the current status of each Wyse TCX Suite Server service.

**Caution**

After modifying a server software component (for example, *Wyse TCX USB Virtualizer Service*), be sure to restart the service of the component by using the *Services* applet in the *Windows Administrative Tools* (for example, right-click the **Wyse TCX USB Virtualizer Service** and select **Restart**).

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## Using Event Viewer for Server Troubleshooting

*Event Viewer* (in *Windows Administrative Tools*) maintains logs about program, security, and system events on the server where you installed the Wyse TCX Suite Server software. You can use *Event Viewer* to view and manage the event logs, gather information about hardware and software problems, and monitor Windows security events.

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## Configuring INI Files to Support Isochronous Devices (Headsets and Webcams)

To optimize performance of isochronous devices, like USB headsets and webcams, add the following lines to the *wnos.ini* file on the FTP server:

- Required for a webcam that requires a minimum 16-bit color depth:  
desktopcolordepth=16 rgb565=yes
- Required for headsets; to not bring sound to the local client and allow Wyse TCX USB Virtualizer redirect it:  
Connect=<protocol, e.g., rdp> host=<name or ip address> DisableSound=2
- Required when Wyse TCX USB Virtualizer is used with Wyse TCX Rich Sound (headsets are not redirected by default; to force a redirection of headsets via Wyse TCX USB Virtualizer):  
Device=vusb ForceRedirect=0x0,0x0,0x03,0x01,0x01
- Required when using Wyse TCX USB Virtualizer with a VDM broker (to not bring sound to the local client and allow Wyse TCX USB Virtualizer redirect it):  
SessionConfig=All DisableSound=2

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