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A UTC Fire & Security Company

TruVision Navigator 4.0 User Manual

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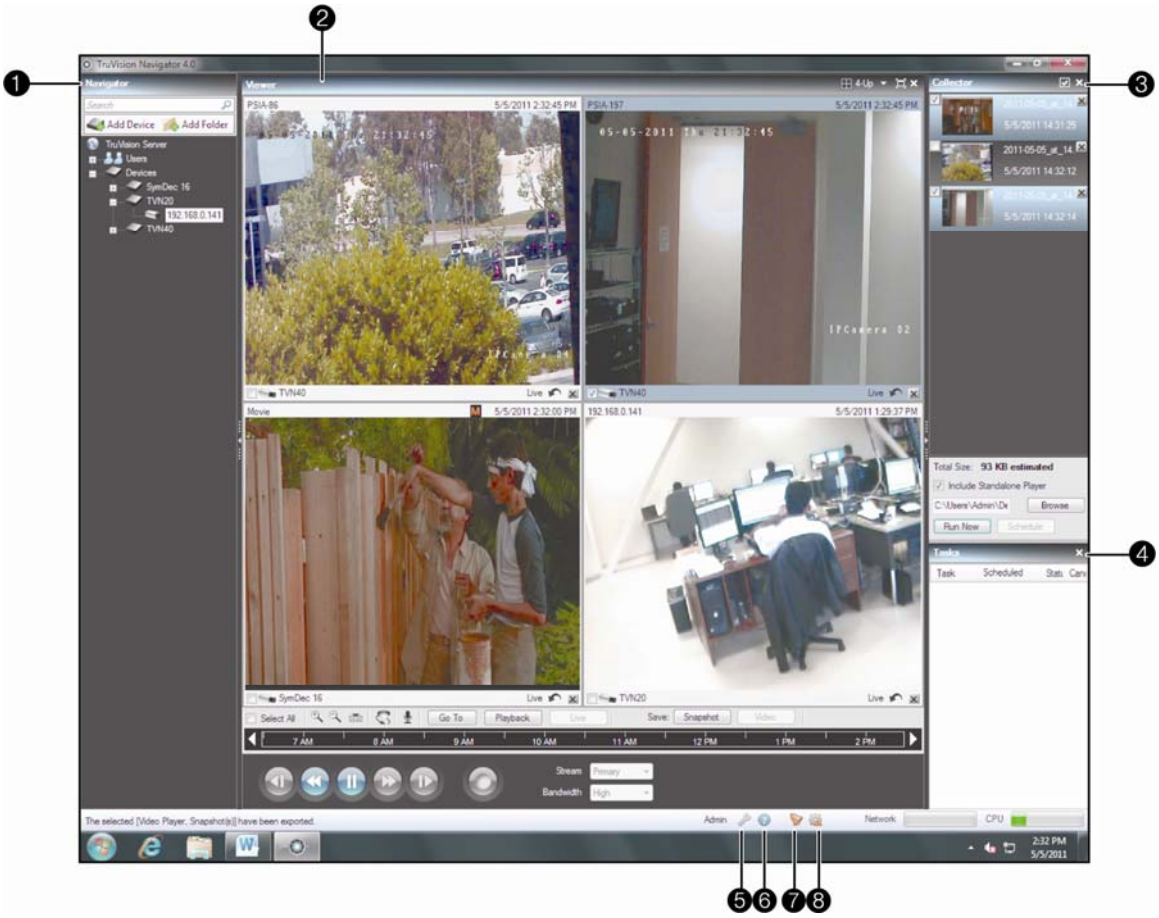
Content

Chapter 1
Overview

TruVision Navigator is video management software that enables security-related personnel to easily and remotely gather video evidence, monitor live situations, and configure and maintain a video surveillance system that consists of digital video recorders (devices), analog video cameras, network video recorders, and IP cameras. TruVision Navigator provides a more intuitive way to find and provide relevant video content. Figure 1 shows the TruVision Navigator main screen.

Figure 1: TruVision Navigator Main Window



1	Navigator Panel
2	Viewer Panel
3	Collector Panel
4	Tasks Panel
5	Settings Dialog
6	Help Dialog
7	Notifier Dialog
8	Services Dialog

TruVision Navigator consists of 4 panels and several major dialogs as listed above. Panels are resizable by dragging the vertical left or right splitter bars. Arrow icons next to panel names signify the ability to hide/unhide the panel. This provides custom application layout styles depending on the activities that you want to perform. TruVision Navigator will remember your custom panel layout upon logout and restore you to that same point when you log back in.

The **Navigator** panel is the central administration area in the software and allows you to quickly search and access any device or camera in your system.

- The Navigator tree features double-click or drag n' drop capability to view cameras or devices as a whole. By right-clicking on any object in the Navigator, you will be exposed to a number of operations that can be performed on that object. These include health diagnostics, device configuration, disk analysis, properties, search, firmware uploads, and more.
- This panel is permission-based, so if you do not have rights to perform certain actions, you will not see the options.

The **Viewer** panel allows you to view both live and recorded video from any video source in the system. It plays live or recorded video that can be launched from various parts of the application.

- Users have several tile layouts to choose from when arranging the video sources. Standard tile layouts include 1×1, 2×2, 3×3, 4×4, and 5×5. We also support a Custom Tile Layout with 1 large tile and 7 smaller surrounding tiles for additional flexibility. Double-clicking in any single tile will bring that video to full screen. Double- clicking the video again will restore the video to the previous tile layout. As well, Instant Replay is available from the video tile itself by clicking on the Instant Replay icon on the tile status bar.
- Users also have the ability to detach up to 2 Viewers by left-clicking in the Viewer header bar and dragging a Viewer out of the core application. This is most useful in multiple-monitor configurations when you want to see more than a 5x5 video tile configuration.
- If your system contains PTZ (pan/tilt/zoom) cameras, the Viewer has mouse support for PTZ features from within the video tile. Left-click and move the mouse left\right\up and down to adjust the pan and tilt of the camera. Right-click and move the mouse up and down to allow the camera lens to zoom in and out.
- If your system contains devices that support digital zoom, you can also perform that operation from within the video tile. The digital zoom commands are the exact same as the PTZ commands discussed above.
- The Viewer also features a toolbar, a timeline, playback controls, and stream switching capabilities. Select a specific video tile (blue outline around the video tile) to manipulate it using those features.
- The toolbar allows you to select all video tiles in the Viewer, zoom in and out on the timeline, center the timeline, open the PTZ control palette, perform a Go To search, and put video in live or playback mode. The

Snapshot button allows you to take a thumbnail snapshot of the current play time of a selected video tile and send it to the Collector for export. The Video button allows you to send a desired video segment (of the time range you specified with the green and red indicators) to the Collector for export.

- The timeline allows users to seek for video at specific points in time. Double-clicking anywhere on the timeline will automatically playback the selected video at that specific date and time (assuming there is recorded video for that segment on the device). Use the playback indicator (appears as a blue triangle icon) to seek and play the video anywhere along the timeline. Use the green and red triangle icons to mark the beginning and end of a desired video segment. Use the playback controls beneath the timeline to further manipulate the playback video.

The **Collector** panel contains all relevant video segments, snapshots, and local recordings ready for export. From here, you can select the desired content to export to your hard drive on demand or via a schedule.

- To re-open a video clip for further analysis, double-click the thumbnail and the video will launch in the Viewer. You can then manipulate the timeline to refine the clip and send it back to the Collector. To delete video clips from the Collector, click the delete icon next to the thumbnail. Rename, print, or E-mail snapshots with a right-click of the mouse on the thumbnail.

The **Tasks** panel affords the user one central place to monitor the tasks that have been created and scheduled in the system.

- These tasks include video exports, firmware upgrades, bulk configurations, database backups, and database restores. The Tasks panel provides a real-time status of the tasks in the queue, and the reason if a task was unsuccessful.

The **Settings** dialog allows the user to configure several options within the application.

- Enable your alert sound when new device notifications are received in the Notifier.
- Select your Point-of-Sale Text display option between In Band (text is displayed on the video) and Out of Band (text is displayed next to the applicable video).
- Enable the maximum CPU threshold here to prevent your CPU from reaching 100% during video rendering. As with all applications, you will experience lockups as you reach 100% CPU.
- Enable the preservation of the aspect ratio for live and playback video in the Viewer.

- Enable hardware acceleration for video rendering on applicable video cards. This will offload some CPU cycles to the GPU of the video card should your computer have limited processing power.
- Enable the ability to hear audio from the recording devices.

The **Help** dialog offers an easy to use Help function for more detailed system instructions.

- You can also obtain TruVision Navigator version information, copyright, and end user license agreement information here.
- Organizations have the ability to add their own custom Help or training link here to facilitate the adoption of the product.

The **Notifier** dialog allows you to collect and manage any notifications sent to you from the devices.

- You can select an alert in the Notifier and view the video results in the Viewer. You must configure your devices to send these notifications over the network via TCP or SMTP to the IP address of the TruVision Navigator Server machine. In addition, the firewall must be configured on the TruVision Navigator Server machine to accept these network notifications.
- These notifications may include Alarm, Video Loss, Motion, and more depending on the device type.

The **Services** dialog shows general information on all of the TruVision Navigator services including Network Time Protocol, Diagnostic Polling, Notification Processor, and the Local Scheduling Service.

- This includes the service name, location, status, and the ability to start, stop, or disable the service.

Client Software Requirements

TruVision Navigator supports all of the following Operating Systems and software components.

Table 1: Client Software Requirements

Component	Version	Notes
Operating System (OS)	Microsoft Windows XP Pro SP3 or higher 32-bit	Prerequisite to loading TruVision Navigator
	Microsoft Windows Vista SP1 32-bit	Prerequisite to loading TruVision Navigator
	Microsoft Windows 7 32/64-bit	Prerequisite to loading TruVision Navigator Runs on the 64-bit OS in 32-bit emulation mode

Component	Version	Notes
	Microsoft Windows Server 2003 R2 32-bit	Prerequisite to loading TruVision Navigator
	Microsoft Windows Server 2008 R2 32/64-bit	Prerequisite to loading TruVision Navigator Runs on the 64-bit OS in 32-bit emulation mode
Other	Microsoft .NET Framework 4.0	Packaged with the installation Multiple .NET versions can co-exist on the same machine

Client Hardware Guidelines

The PC industry is constantly improving on product performance and configurations while reducing cost to the customer. As a result, we have listed some Client PC specifications for TruVision Navigator as to what is commercially available. These specifications are meant to serve as a GUIDELINE for the customer. TruVision Navigator will perform to varying degrees on lesser or more robust machines.

TruVision Navigator will load on a machine with the following hardware characteristics but video performance will be less than our Minimum recommendation:

- Intel Pentium 4 2.8 GHz Processor
- 1 GB of Memory
- 512 MB Video Card
- 1 GB Free Disk Space
- 10/100 Ethernet Network Interface Card
- 1024 × 768 screen resolution

Please review the Expected Performance metrics in Table 3 to determine what will meet your needs. You can make your PC decision based upon that need.

Table 2: Client PC Hardware Specifications

Component	Minimum	Recommended	High	Notes
Estimated Cost	$449	$649	$899	Dell Online

Component	Minimum	Recommended	High	Notes
Processor	Intel Pentium G6950 processor (3MB Cache, 2.80GHz)	Intel Core i5-650 processor (4MB Cache, 3.20GHz)	Intel Core i7-920 processor (8MB L3 Cache, 2.66GHz)	CPU power is directly related to the performance of the application when running and rendering video. The better the CPU, the more responsive your application will be.
Memory	4GB4 Dual Channel DDR3 SDRAM3 at 1066MHz - 4 DIMMs	3GB2 Dual Channel DDR3 SDRAM3 at 1333MHz	3GB2 DDR3 Tri-Channel SDRAM3 at 1066MHz - 3 DIMMs	RAM is related to the number of different applications that can run simultaneously as well as the number of different operations that TruVision Navigator can perform at once. The higher the RAM, the better performance you can expect.
Hard Drive	320GB5 - 7200RPM, SATA 3.0Gb/s, 16MB Cache	500GB5 - 7200RPM, SATA 3.0Gb/s, 16MB Cache	500GB5 7200 RPM6 SATA Hard Drive	Optional - TruVision Navigator only requires approximately 400 MB to install. If you wish to store exported video from the devices on the machine, you may want to increase storage.
Graphics Card	Integrated Intel® Graphics Media Accelerator HD	nVidia GeForce G310 512MB2 DDR3	nVidia GeForce 310 512M GDDR3	Video Card capability is directly related to the video rendering performance within TruVision Navigator. The better the video card, the better video rendering performance you can expect.
Resolution	1024 x 768	1024 x 768	1024 x 768	
Network	Integrated PCIE 10/100/1000	Integrated PCIE 10/100/1000	Integrated PCIE 10/100/1000	The network interface card can be a performance bottle neck depending upon the throughput of the card. If the card’s throughput is less than the amount of data streaming to the machine, you may experience performance issues.

Table 3: Client Hardware Performance

Recording Device	Stream Configuration	High		Rec.		Min	
		Streams	CPU%	Streams	CPU%	Streams	CPU%
DVMRe/ StoreSafe	Resolution/FPS = CIF Bit rate = Variable Codec = Wavelet	80	6	80	10	80	12
SymSafe	Resolution/FPS = D1/15 Bit rate = 1.5 Mbps Codec = MPEG4	100+	50	75	50	50	50
SymDec 16	Resolution/FPS = D1/30 Bit rate = 3.0 Mbps Codec = MPEG4	65	90	50	90	18	90
TVR 10	Resolution/FPS = 4CIF Bit rate = 2.0 Mbps Codec = H.264	100+	20	50+	50	32+	40
TVR 20	Resolution/FPS=4CIF/7.5 Bit rate = 1.5 Mbps Codec = H.264	65	30	60	85	54	90
TVR 30	Resolution/FPS = D1/15 Bit rate = 1.5 Mbps Codec = H.264	100	80	25	80	18	80
TVR 40	Resolution/FPS = 4CIF/8 Bit rate = 1.5 Mbps Codec = H.264	100+	35	100+	50	40	80
TVR 60	Resolution/FPS = D1/15 Bit rate = 1.5 Mbps Codec = H.264	64+	60	30	80	23	80

* Hit high bandwidth cap on 100Mb network interface card

Server Software Requirements

TruVision Navigator supports all of the following Operating Systems and other software components.

Table 4: Server software requirements

Component	Version	Notes
Operating System	Microsoft Windows XP Pro SP3 or higher 32-bit	Prerequisite to loading TruVision Navigator

Component	Version	Notes
	Microsoft Windows Vista SP1 32-bit	Prerequisite to loading TruVision Navigator
	Microsoft Windows 7 32/64-bit	Prerequisite to loading TruVision Navigator Runs on the 64-bit OS in 32-bit emulation mode
	Microsoft Windows Server 2003 R2 32-bit	Prerequisite to loading TruVision Navigator
	Microsoft Windows Server 2008 R2 32/64-bit	Prerequisite to loading TruVision Navigator Runs on the 64-bit OS in 32-bit emulation mode
Web Service	Microsoft Internet Information Services (IIS) 6.0 or higher	Prerequisite to loading TruVision Navigator
	Cassini	Packaged with the installation
Database	Microsoft's SQL 2005 Microsoft's SQL Express 2005 Microsoft's SQL 2008 R2 Microsoft's SQL Express 2008 R2	Microsoft's SQL Express 2008 R2 is packaged with the installation Upgrades of existing installations will continue to use the existing SQL 2005 New installations will use SQL 2008
Other	Microsoft .NET Framework 4.0	Packaged with the installation Multiple .NET versions can co-exist on the same machine

Server Hardware Guidelines

This specification is meant to serve as a guideline for the customer. TruVision Navigator will perform to varying degree on a lesser or more robust machine. Table 5 lists the recommended server hardware specification.

Table 5: Server Hardware Specifications

Component	Recommended	Notes
Estimated Cost	$649	Dell Online
Processor	Intel Core™ i5-650 processor(4MB Cache, 3.20GHz)	
Memory	3GB2 Dual Channel DDR3 SDRAM3 at 1333MHz	
Hard Drive	500GB5 - 7200RPM, SATA 3.0Gb/s, 16MB Cache	Optional - this storage requirement will vary widely depending on many factors including whether or not the database is being hosted on the server, the size of the actual database, and whether or not you want to store video on the server.
Graphics Card	nVidia GeForce G310 512MB2 DDR3	Optional - depending on whether or not you want to view video from a Client on this machine.
Network	Integrated PCIE 10/100/1000	

Supported Recording Devices

Table 6 shows the supported devices and related firmware versions.

Table 6: Supported Recording Devices

Recording Devices	Supported Firmware
TruVision NVR40 (TVN40)	4.3
TruVision NVR20 (TVN20)	1.0
TruVision DVR60 (TVR60)	4.2g
TruVision DVR40 (TVR40)	3.0 build 100416
TruVision DVR30 (TVR30)	6300
TruVision DVR20 (TVR20)	1.0.23
TruVision DVR10 (TVR10)	2.4

Recording Devices	Supported Firmware
GoVision 2	1.0.0 build 100617
GoVision	2.1
SymDec 16 plus 4	1.60c
SymDec 4	1.48a
SymDec 1	1.48a
SymSafe Pro Series	1.40c
SymSafe Basic Series	1.40c
DVSRxU	2.31s
DVMRE CT (Triplex) Series	6.33
DVMRE CT II Series	6.33
DVMRE PRO Series	6.33
DVMRE ezT Series	6.33
DVMRE CS Series	6.33
DVMRE CD Series	6.33
StoreSafe Series	6.33
StoreSafe Pro II Series	6.33
StoreSafe Advanced Series	6.33
DSR	2.24a
DVSE Series	3.04

Chapter 2
Installation

Architecture

TruVision Navigator is made up of 3 components:

- Client
- Services
- Database

The TruVision Navigator architecture is flexible enough to allow all 3 of these components to co-exist on the same PC (i.e. a single Windows XP machine) in small-scale environments.

As well, TruVision Navigator allows each of these 3 components to operate on separate machines (i.e. a virtual server for Services, a dedicated database machine for Database, and multiple PCs distributed on the network hosting Clients) for large- scale, distributed environments.

Installation Options

There are 2 installation options for TruVision Navigator:

- Standalone Model (or Direct Database Connection) - this installation option allows the Client, the Database, and the Services to be located on the same machine. The one limitation is that no other Clients on the network can connect to the database on this machine. This installation option is ideal for local, standalone systems.
- Multi-Client Model (or Client/Server) - This installation option allows the Client, the Database, and the Services to be located on the same or separate machines. This option requires a Web Service (either Microsoft's Internet Information Services (IIS) or Cassini) for communication between the multiple Clients and the shared Database. This installation option is ideal for larger systems with many geographically dispersed users, PCs, and recording devices.

Whatever installation option you choose, the core features and functions of TruVision Navigator remain the same.

You will need Administrator's rights on the machine to install the application, but the software will be available to all users who successfully log on to a Windows account on that machine.

Languages

The following languages are supported in TruVision Navigator:

- Chinese (Simplified and Traditional)
- Czech
- Dutch
- English
- Finnish
- French
- German
- Hungarian
- Italian
- Polish
- Portuguese
- Brazilian Portuguese
- Russian
- Spanish
- Swedish
- Turkish
- Arabic

After launching the TruVision Navigator Installation Setup.exe, the InstallShield Wizard will auto-detect the language setting on the PC, and if it is supported, will translate to that language. If the language detected is not supported, the InstallShield Wizard will default to English.

Upon launching the Client, TruVision Navigator will always auto-detect the language setting on the PC, and if it is supported, will translate to that language. If the language detected is not supported, the Client will default to English. Changing the language setting on your PC will take effect the next time you log into TruVision Navigator.

If you change the default language, the device names and folders will remain in the language that they were first named. They are not translated dynamically. You can rename the devices and folders after the default language change has taken place.

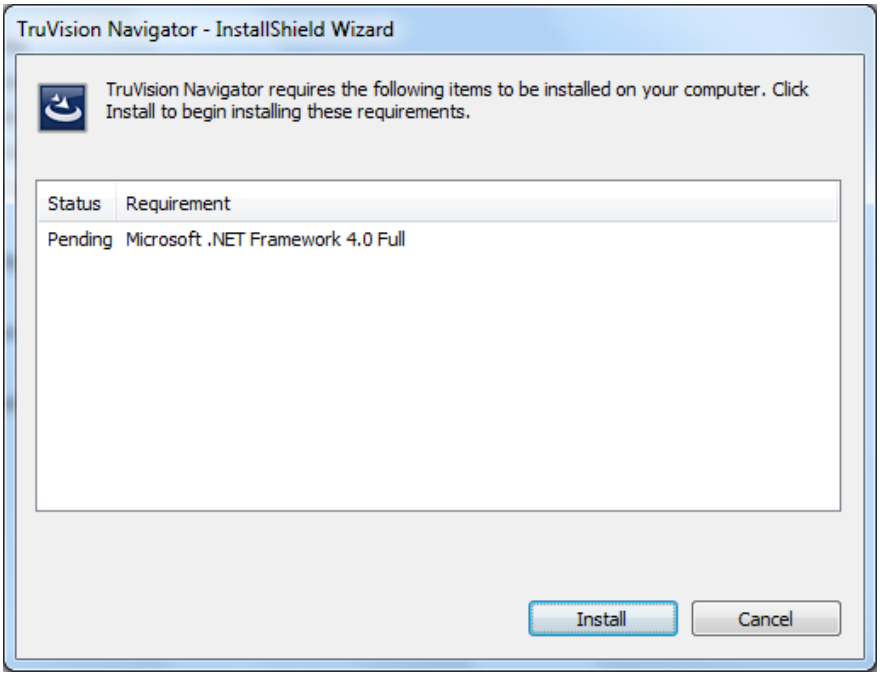
Due to the different lengths of words in different languages, the buttons in the application may show abbreviations for a word. Simply position the mouse over the abbreviation on the button to see the full translation of the word.

Installation – Typical

To install a new typical instance of TruVision Navigator on your computer, do the following:

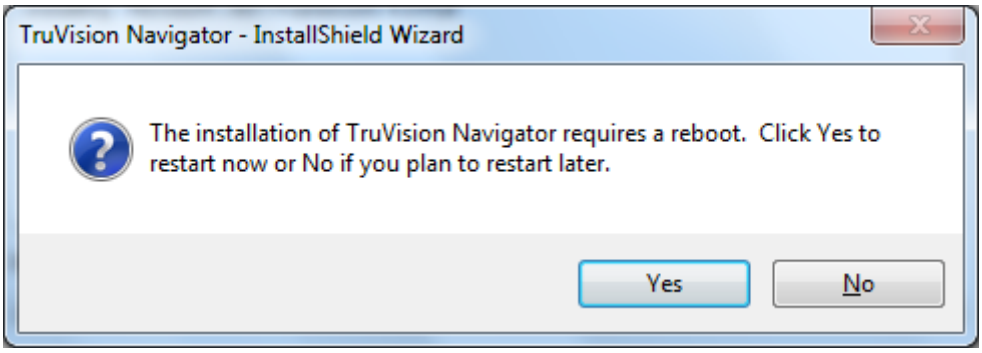
- Place the TruVision Navigator setup.exe on the desktop of the PC.
- Double-click the TruVision Navigator setup.exe to begin the installation.
- The Prerequisite dialog displays and details what programs need to be installed on the PC for TruVision Navigator to run. Click Install and TruVision Navigator will install those for you.

Figure 2: Prerequisite Dialog



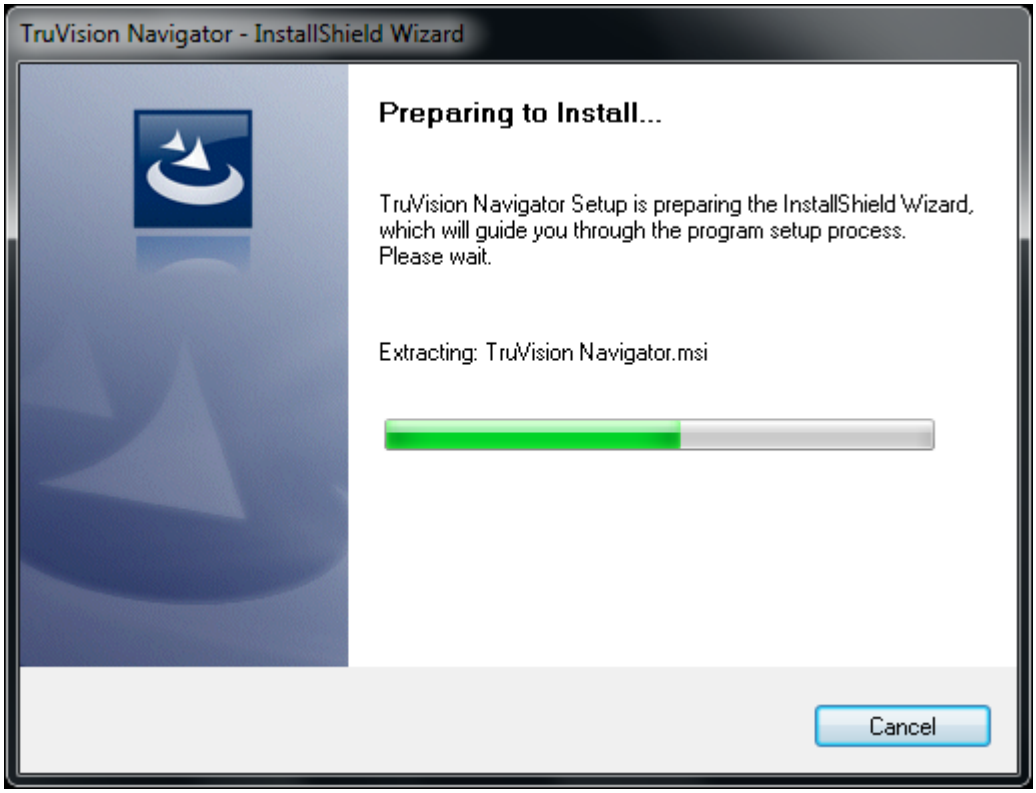
- Periodically, you will be prompted to reboot your PC for the prerequisite programs to take effect. The installation process will resume automatically after you login to the PC after the reboot.

Figure 3: Reboot Dialog



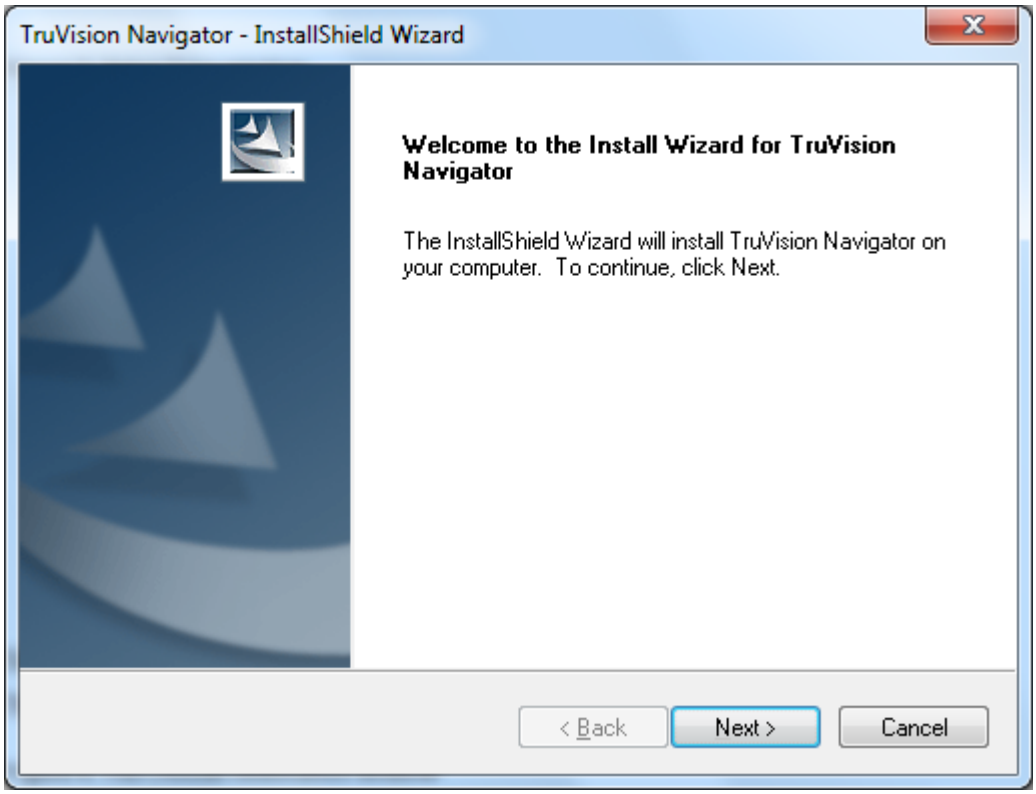
- Once the prerequisites have been installed, TruVision Navigator will begin its own installation process. Click Cancel to exit the installation.

Figure 4: InstallShield Wizard Dialog



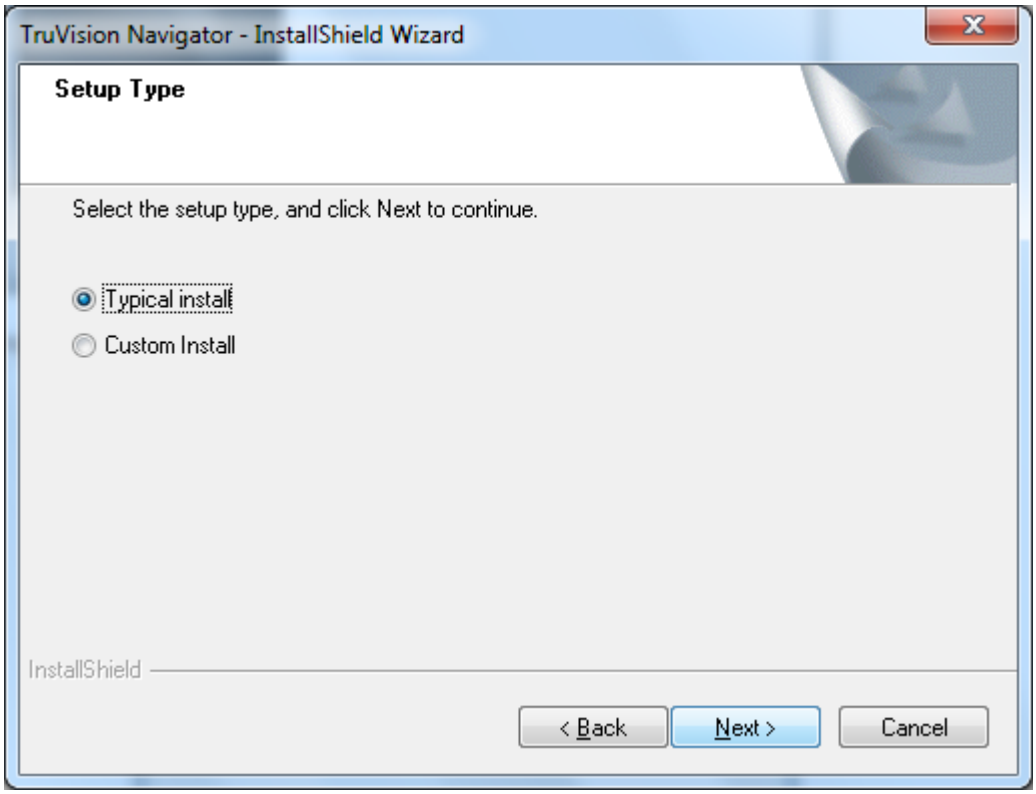
- The *Welcome Dialog* displays. Click Next to continue.

Figure 5: Welcome Dialog



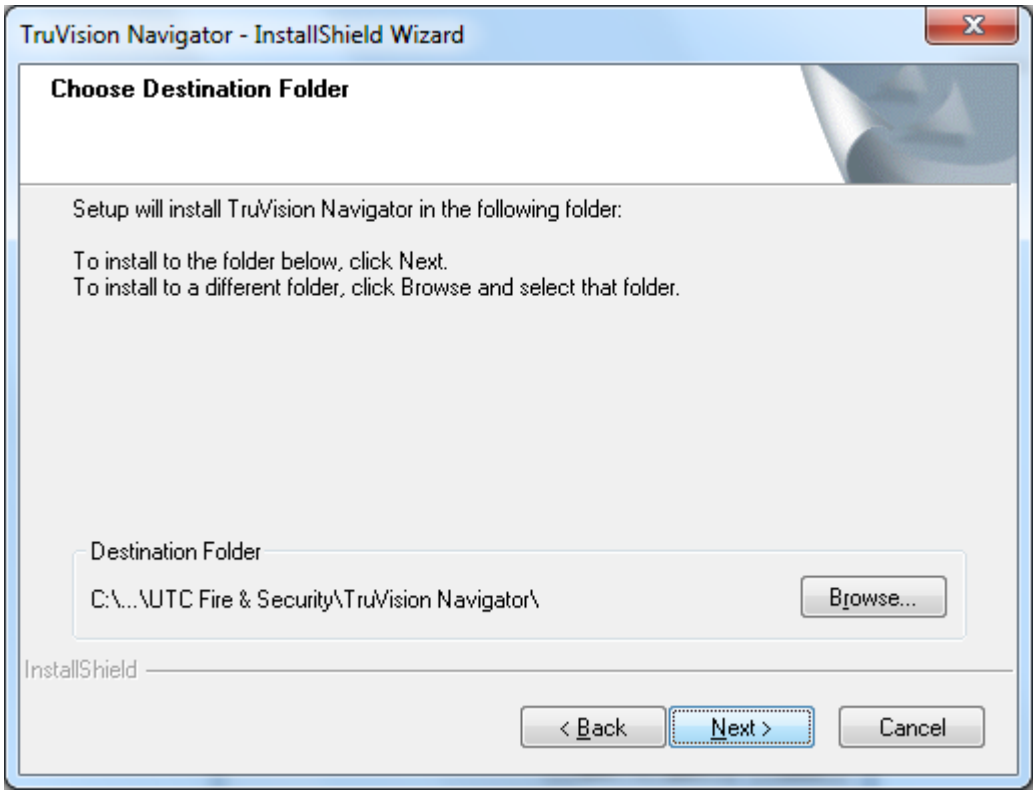
- The *Setup Type Dialog* displays and allows you to select a Typical or a Custom install. Custom installs simply allow you to make additional choices that are defaulted during a typical install. Select an option and click Next to continue.

Figure 6: Setup Type Dialog



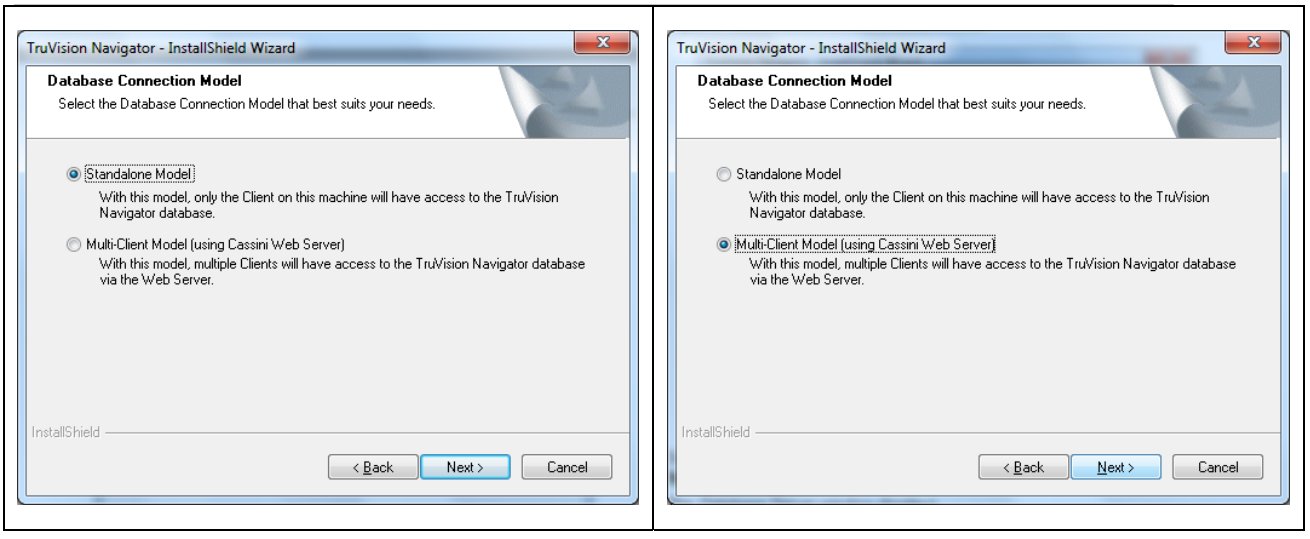
- The *Choose Destination Folder Dialog* displays and allows you to browse the destination for the application payload. Click Next to continue.

Figure 7: The Choose Destination Folder Dialog



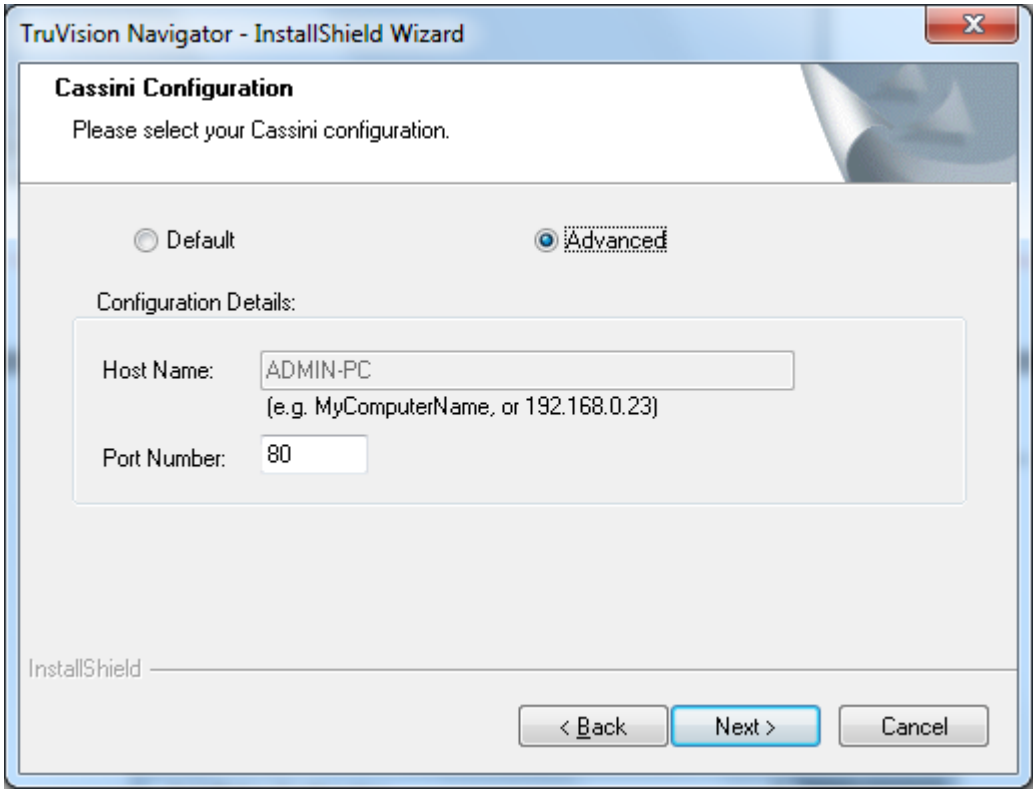
- The *Database Connection Model Dialog* displays and allows you to select either a Standalone or Multi-Client model for the installation. Select an option and click Next to continue.

Figure 8: The Database Connection Model Dialog



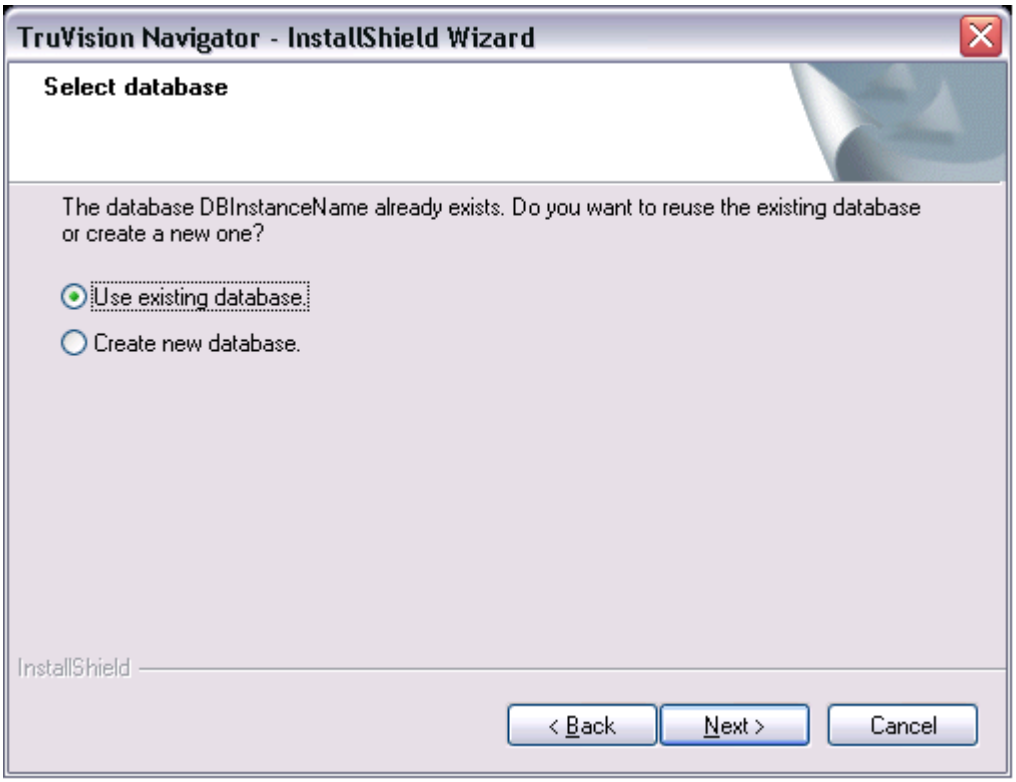
- If you selected Multi-Client model for the installation, you will be prompted to review the Web Service installation options for Cassini. Make your selections and click Next.

Figure 9: Cassini Configuration Dialog



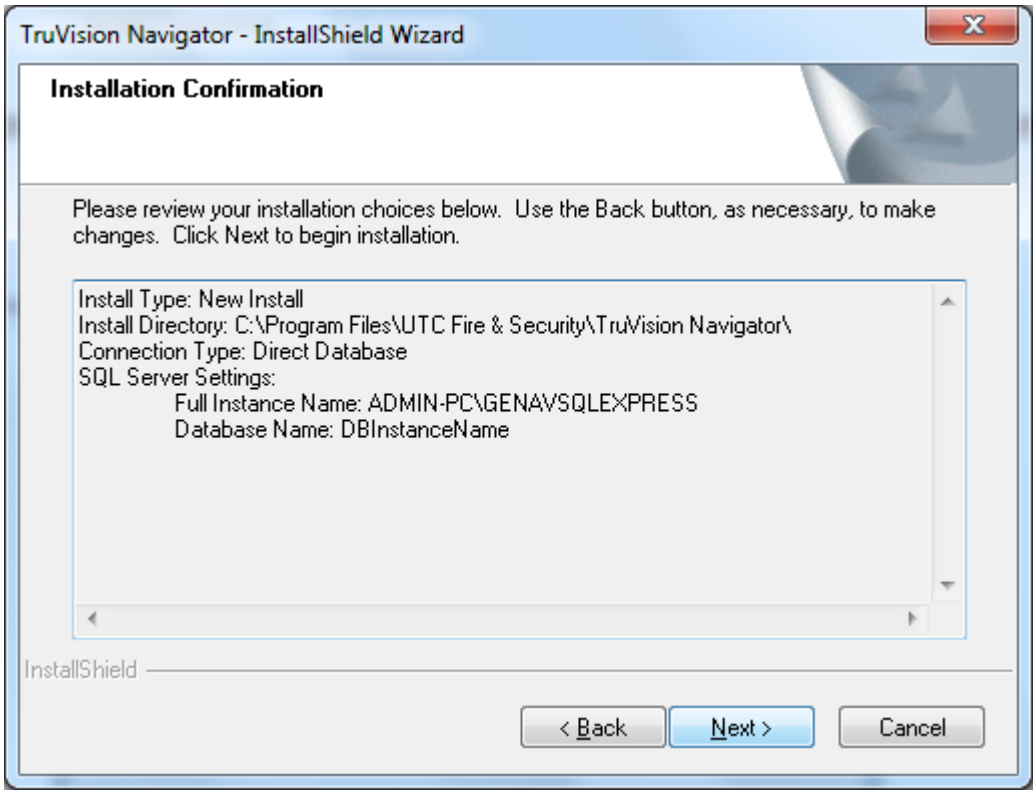
- If you had an existing Navigator database on the machine, the *Select Database Dialog* will allow you to either reuse that database or create a new one. Make your selections and click Next.

Figure 10: Select Database Dialog



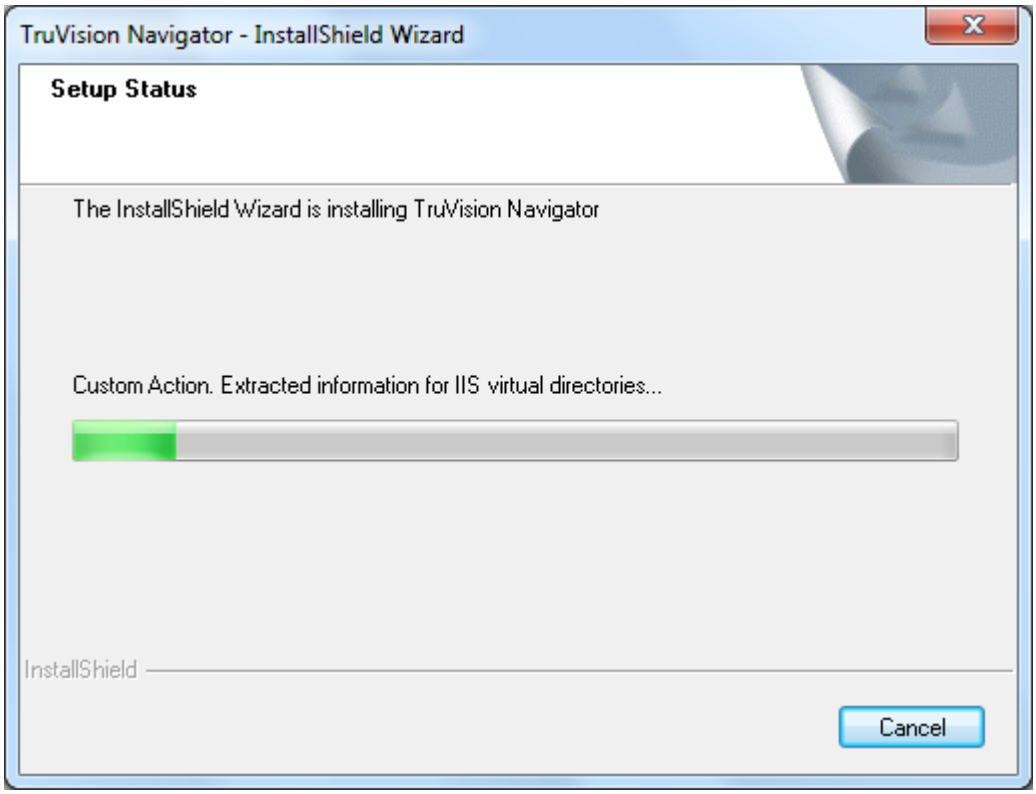
- The *Installation Confirmation Dialog* displays and allows you to review your installation choices to that point. Click Back to change choices or Next to continue. If you click Next, the installation process will begin.

Figure 11: Installation Confirmation Dialog



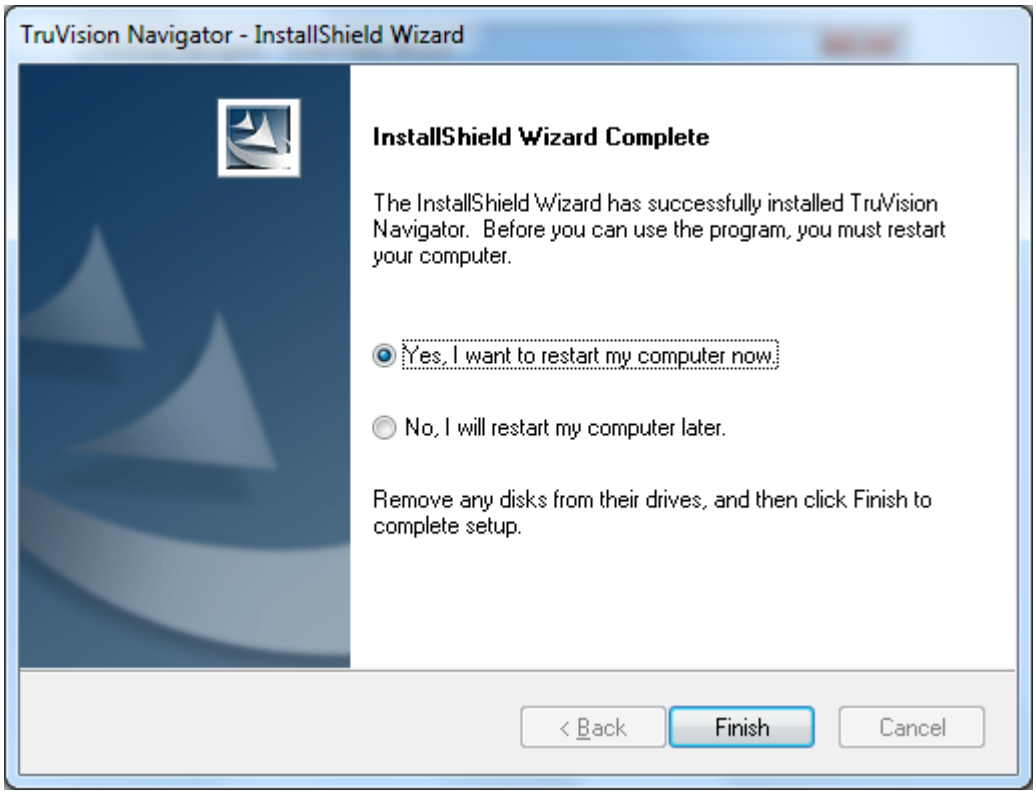
- The *Setup Status Dialog* displays giving you status on the installation process. Click Cancel to stop the installation.

Figure 12: Setup Status Dialog



- The *InstallShield Wizard Complete Dialog* displays prompting you to reboot your system. Click Yes and Finish. A TruVision Navigator icon will be placed on your desktop and in your Start Menu to access the application. Installation is now complete.

Figure 13: InstallShield Wizard Complete Dialog

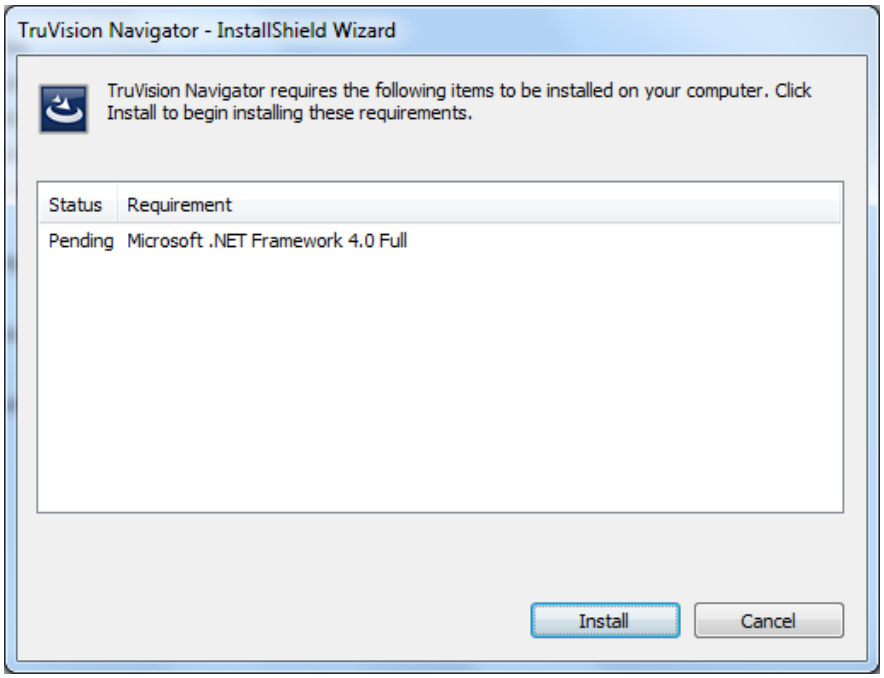


Installation – Custom

To install a new custom instance of TruVision Navigator on your computer, do the following:

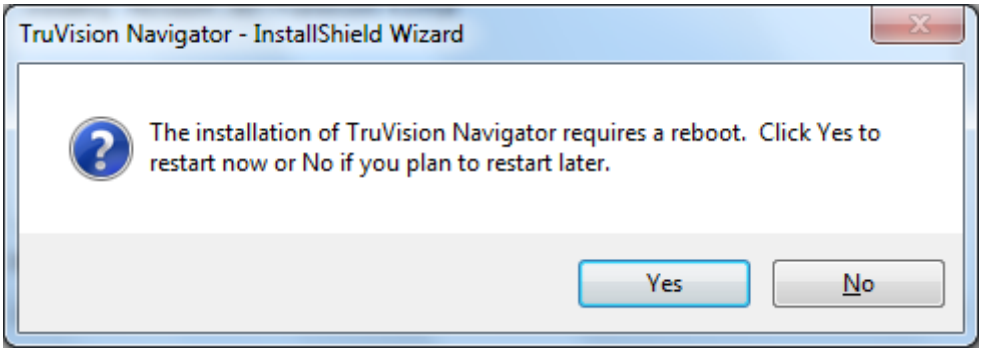
- Place the TruVision Navigator setup.exe on the desktop of the PC.
- Double-click the TruVision Navigator setup.exe to begin the installation.
- The *Prerequisite* dialog displays and details what programs need to be installed on the PC for TruVision Navigator to run. Click Install and TruVision Navigator will install those for you.

Figure 14: Prerequisite Dialog



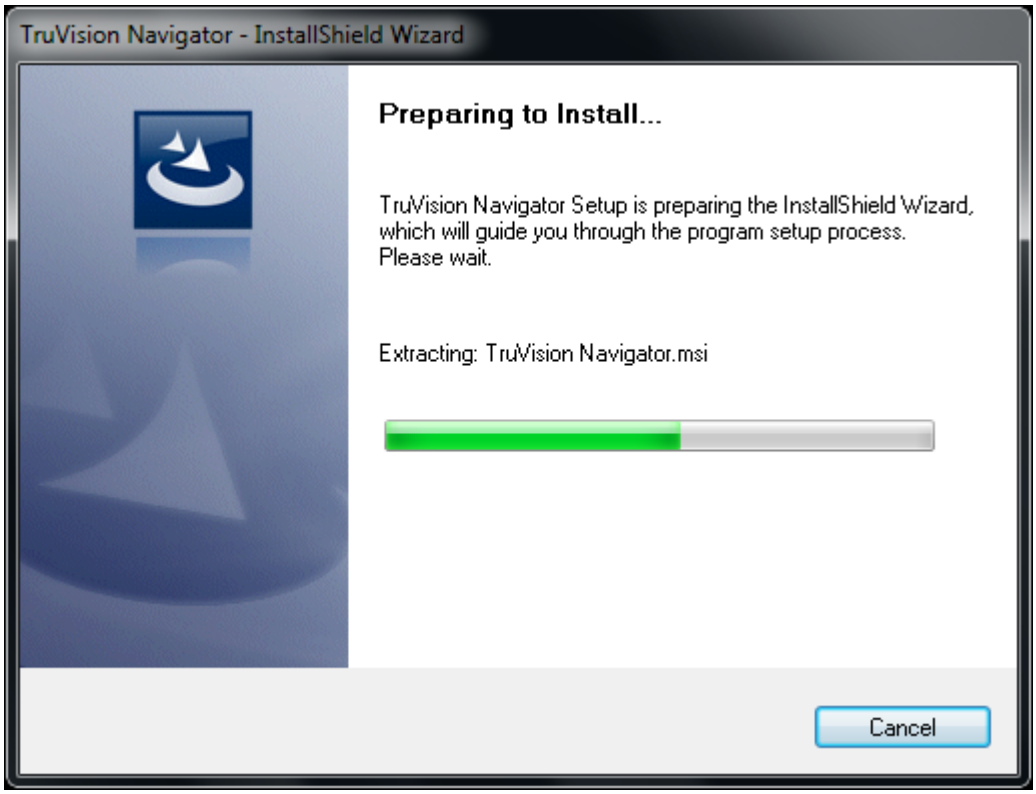
- Periodically, you will be prompted to reboot your PC for the prerequisite programs to take effect. The installation process will resume automatically after you login to the PC after the reboot.

Figure 15: Reboot Dialog



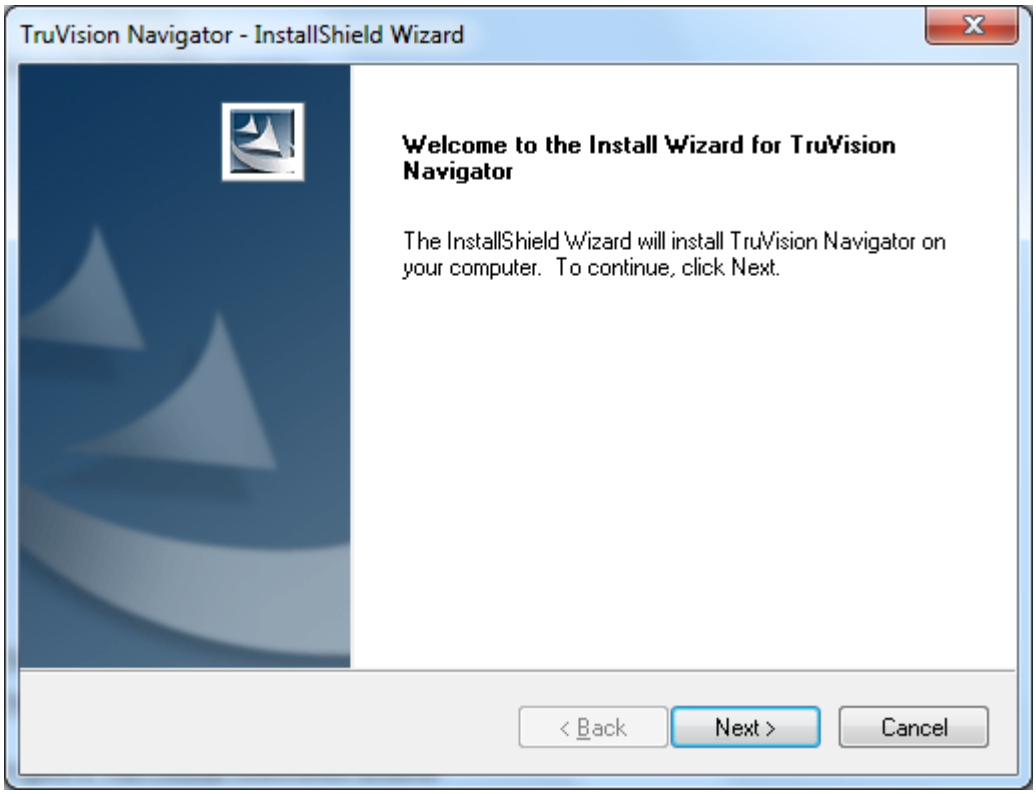
- Once the prerequisites have been installed, TruVision Navigator will begin its own installation process. Click Cancel to exit the installation.

Figure 16: InstallShield Wizard Dialog



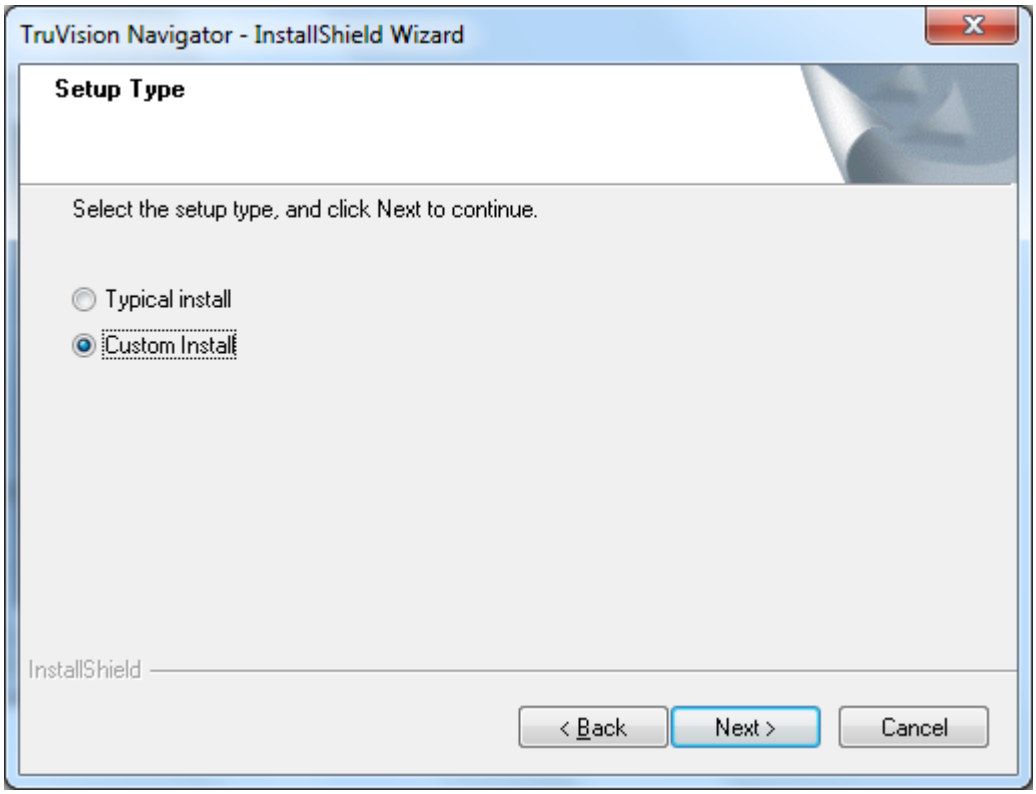
- The *Welcome Dialog* displays. Click Next to continue.

Figure 17: Welcome Dialog



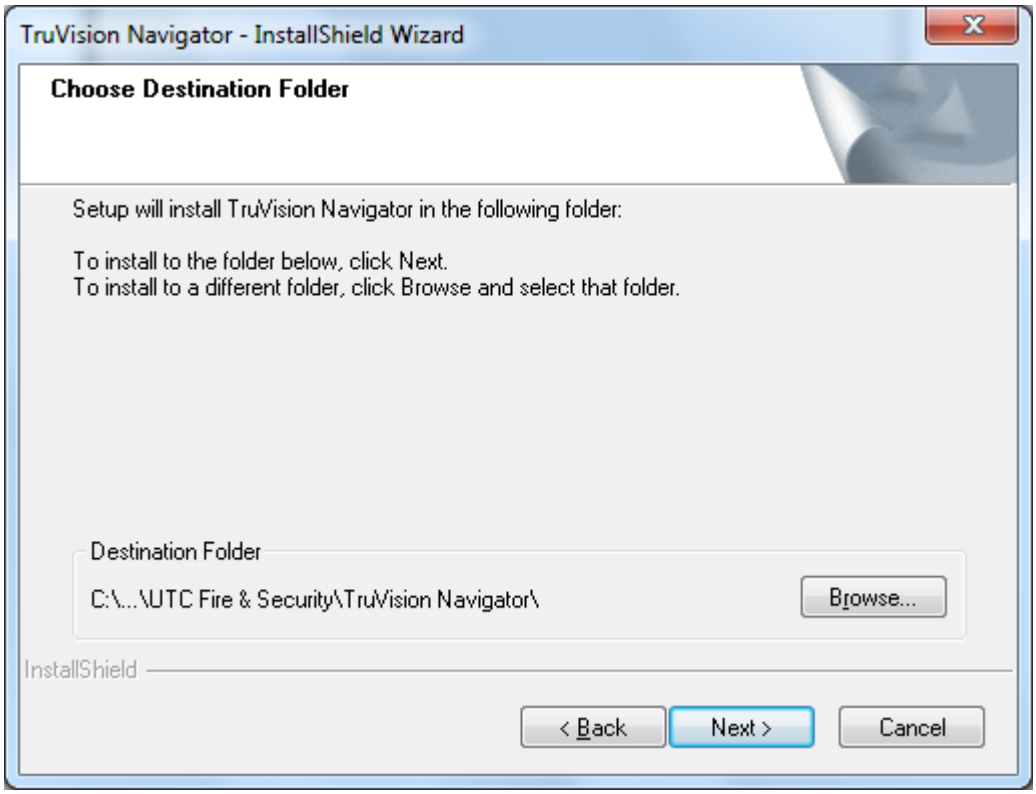
- The *Setup Type Dialog* displays and allows you to select a Typical or a Custom install. Custom installs simply allow you to make additional choices that are defaulted during a typical install. Select Custom and click Next to continue.

Figure 18: Setup Type Dialog



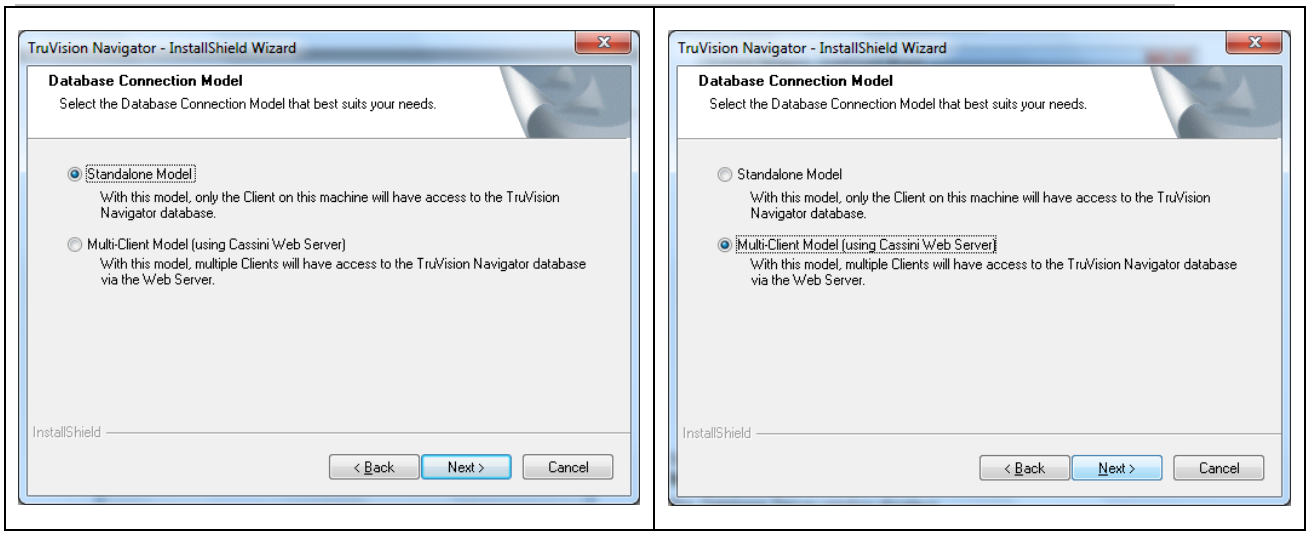
- The *Choose Destination Folder Dialog* displays and allows you to browse the destination for the application payload. Click Next to continue.

Figure 19: The Choose Destination Folder Dialog



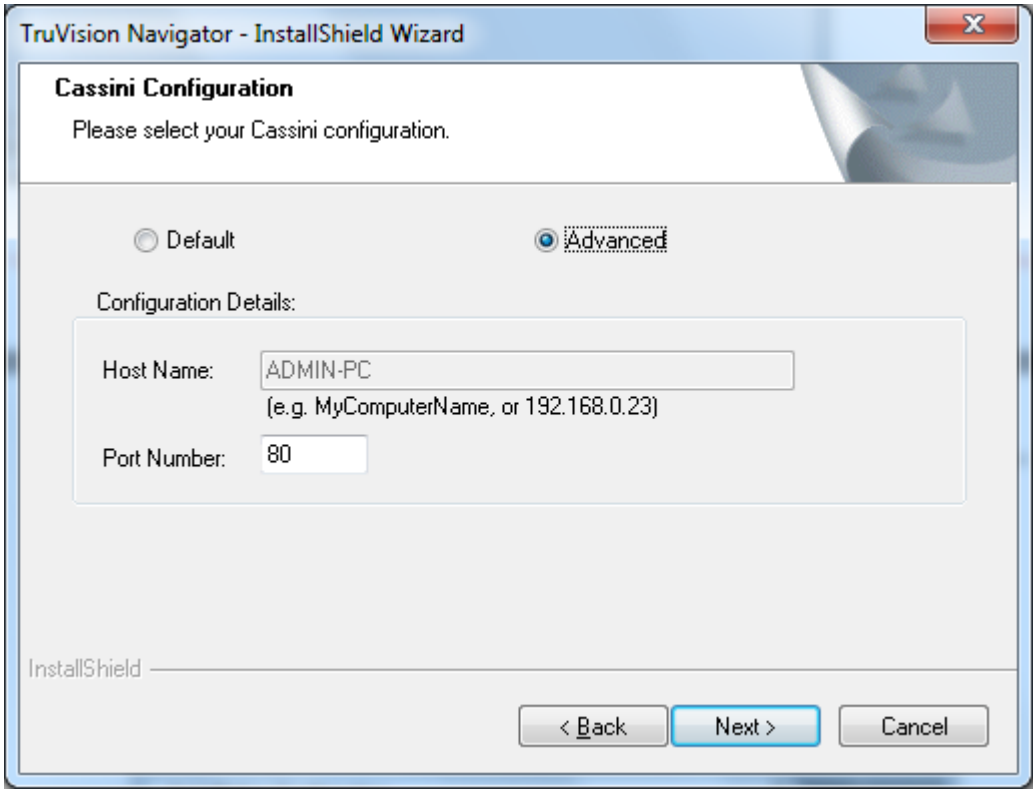
- The *Database Connection Model Dialog* displays and allows you to select either a Standalone or Multi-Client model for the installation. Select an option and click Next to continue.

Figure 20: The Database Connection Model Dialog



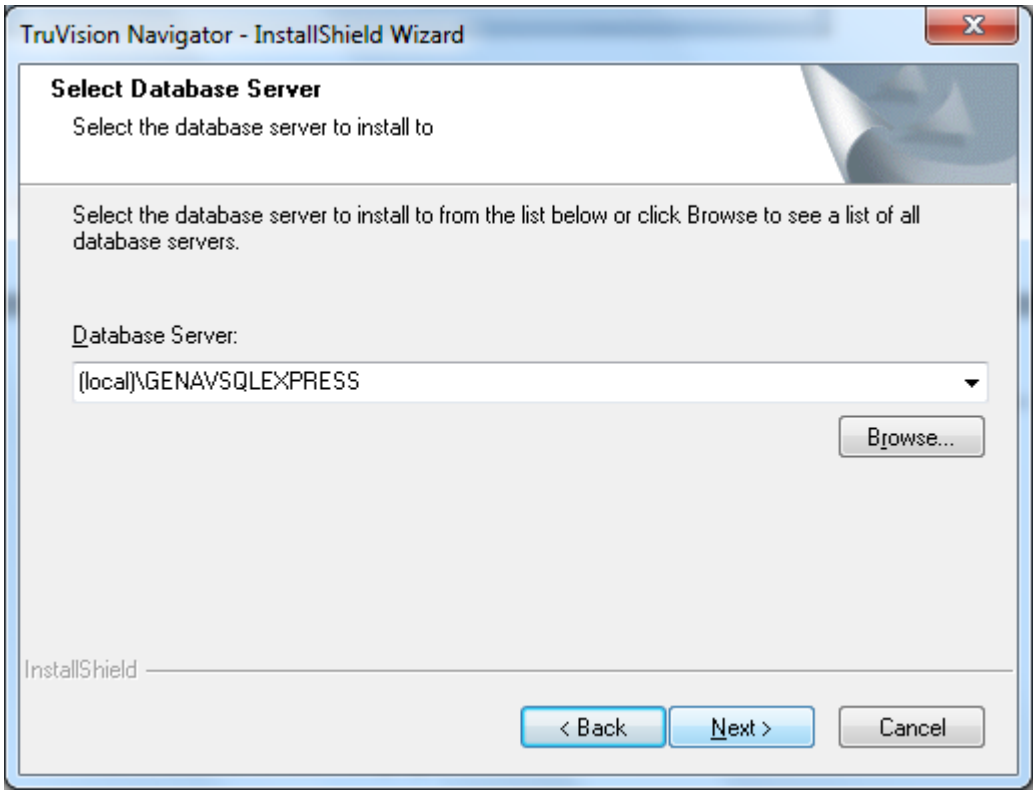
- If you selected Multi-Client model for the installation, you will be prompted to review the Web Service installation options for Cassini. Make your selections and click Next.

Figure 21: Cassini Configuration Dialog



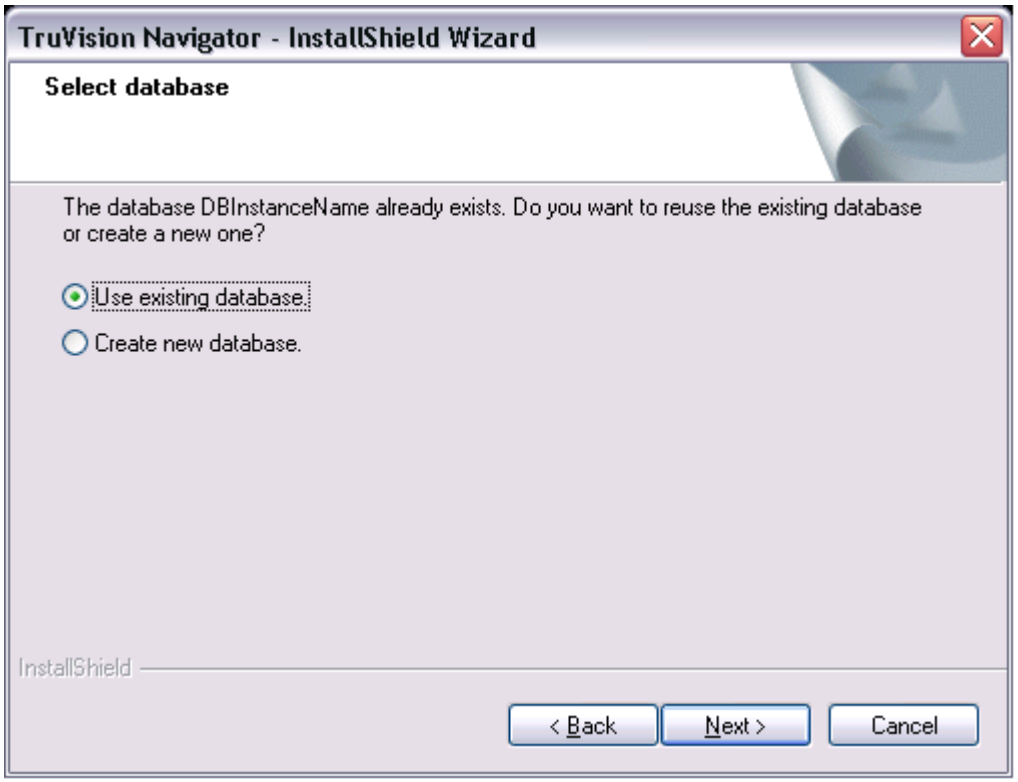
- The *Select Database Server Dialog* displays and provides advanced database configuration options as well as the ability to browse the location of where you want the database installed. Make your selection and click Next.

Figure 22: Select Database Server Dialog



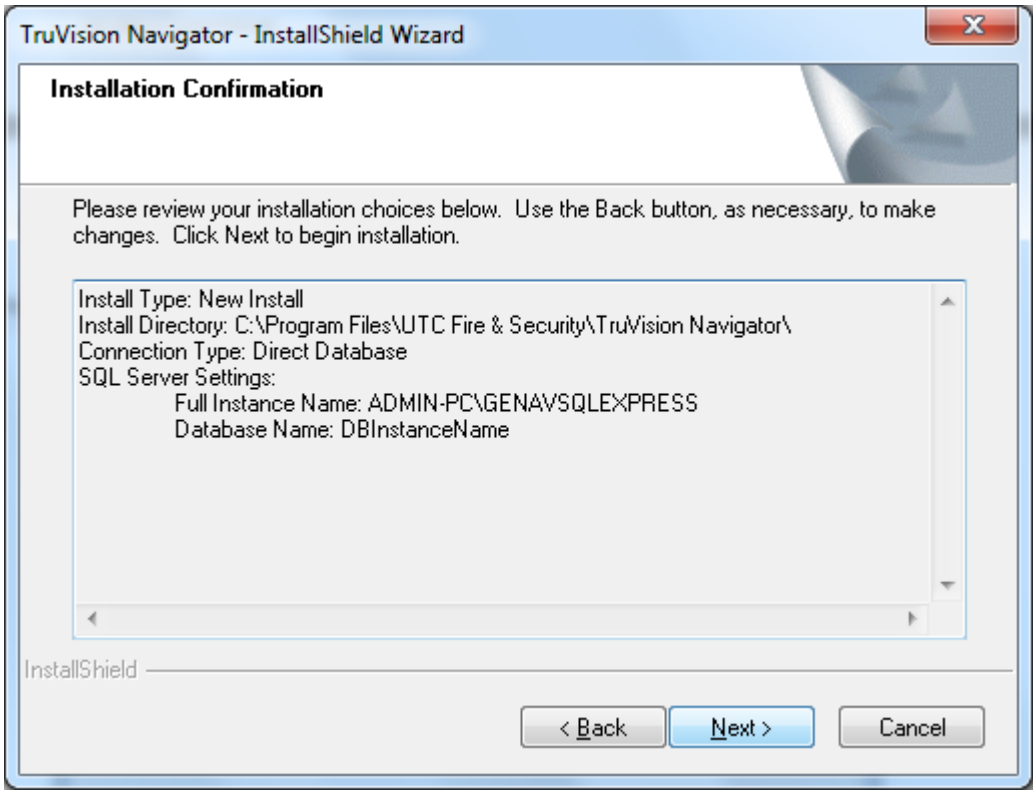
- If you had an existing Navigator database on the machine, the *Select Database Dialog* will allow you to either reuse that database or create a new one. Make your selections and click Next.

Figure 23: Select Database Dialog



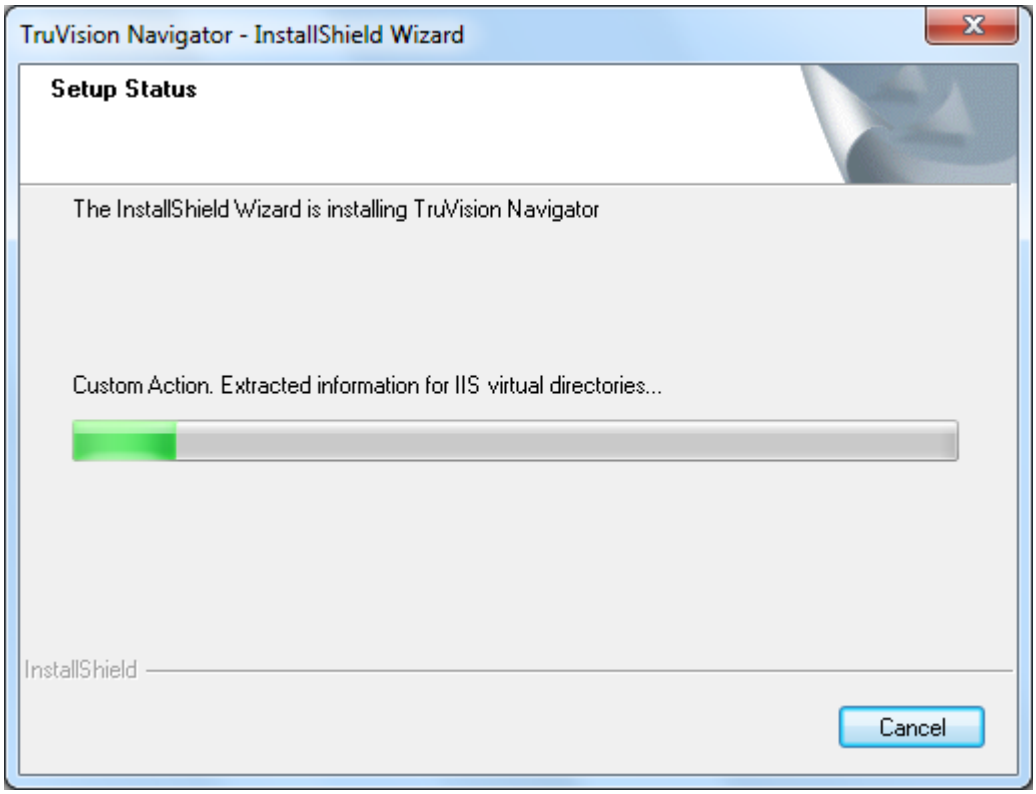
- The *Installation Confirmation Dialog* displays and allows you to review your installation choices to that point. Click Back to change choices or Next to continue. If you click Next, the installation process will begin.

Figure 24: Installation Confirmation Dialog



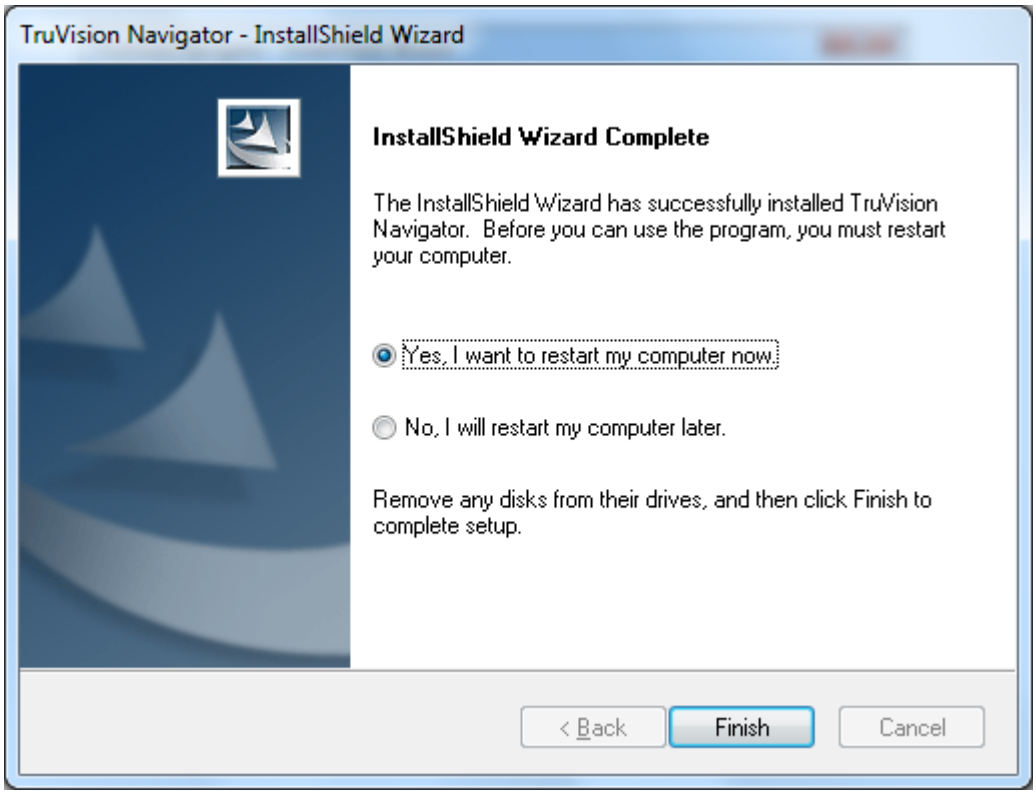
- The *Setup Status Dialog* displays giving you status on the installation process. Click Cancel to stop the installation.

Figure 25: Setup Status Dialog



- The *InstallShield Wizard Complete Dialog* displays prompting you to reboot your system. Click Yes and Finish. A TruVision Navigator icon will be placed on your desktop and in your Start Menu to access the application. Installation is now complete.

Figure 26: InstallShield Wizard Complete Dialog



Upgrade

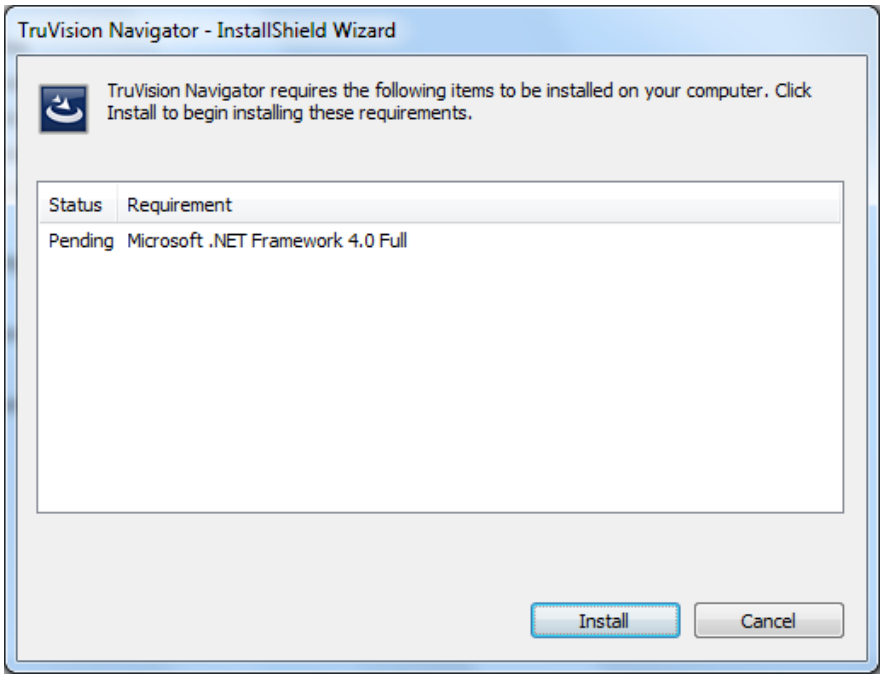
TruVision Navigator 4.0 offers upgrade paths from GE Nav v3.0 and GE Nav v3.1.

Note: You cannot use this upgrade procedure for GE Nav versions 2.0 or 2.1.

To upgrade from a previous version of the application, do the following:

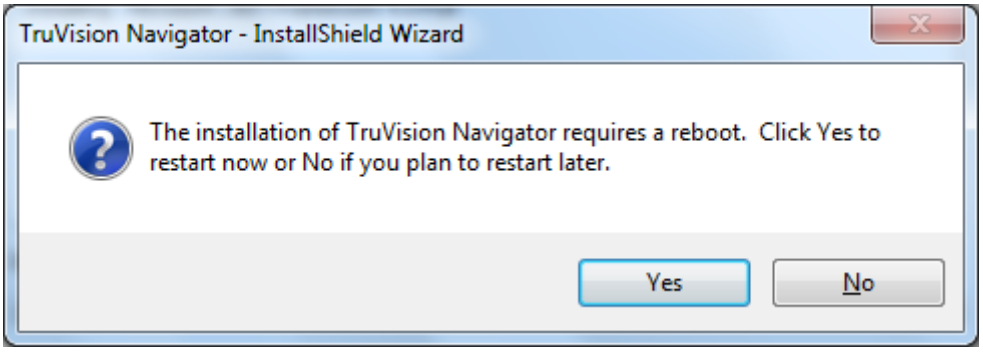
- Place the TruVision Navigator setup.exe on the desktop of the PC where the previous instance is installed. If it is a Multi-Client (Client/Server) installation, place it on the Server machine.
- Launch the InstallShield Wizard by double-clicking the TruVision Navigator setup.exe to begin the installation.
- The *Prerequisite* dialog displays and details what programs need to be installed on the PC for TruVision Navigator to run. Click Install and TruVision Navigator will install those for you.

Figure 27: Prerequisite Dialog



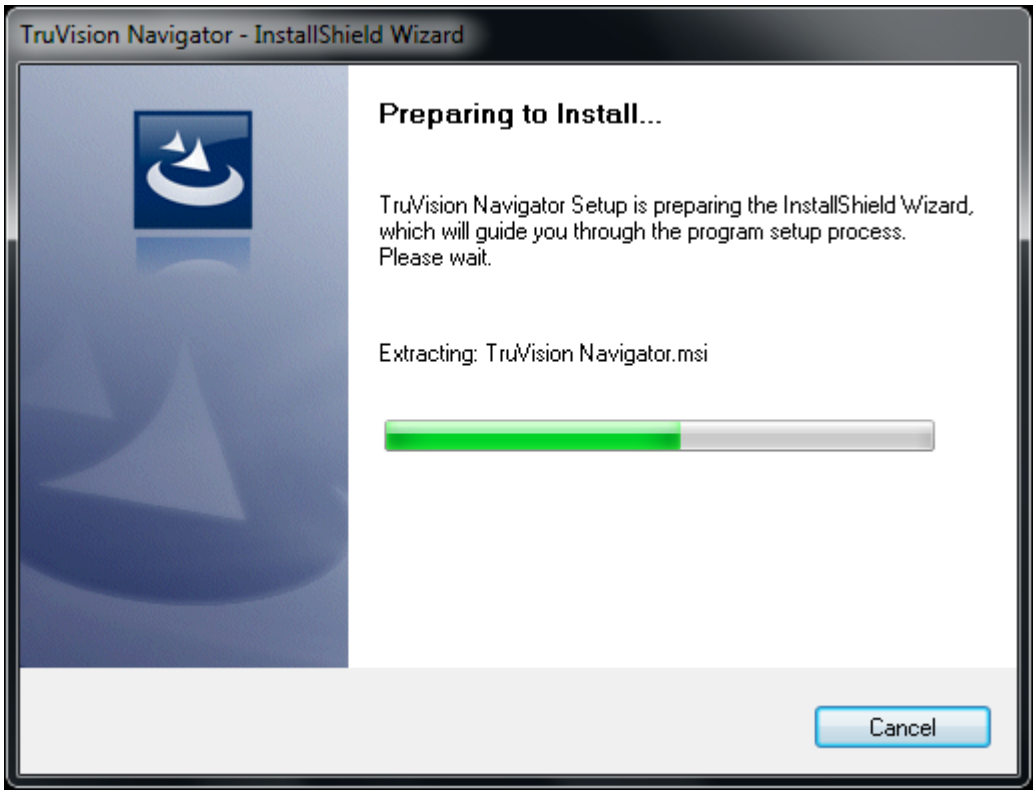
- Periodically, you may be prompted to reboot your PC for the prerequisite programs to take effect. The upgrade process will resume automatically after you login to the PC after the reboot.

Figure 28: Reboot Dialog



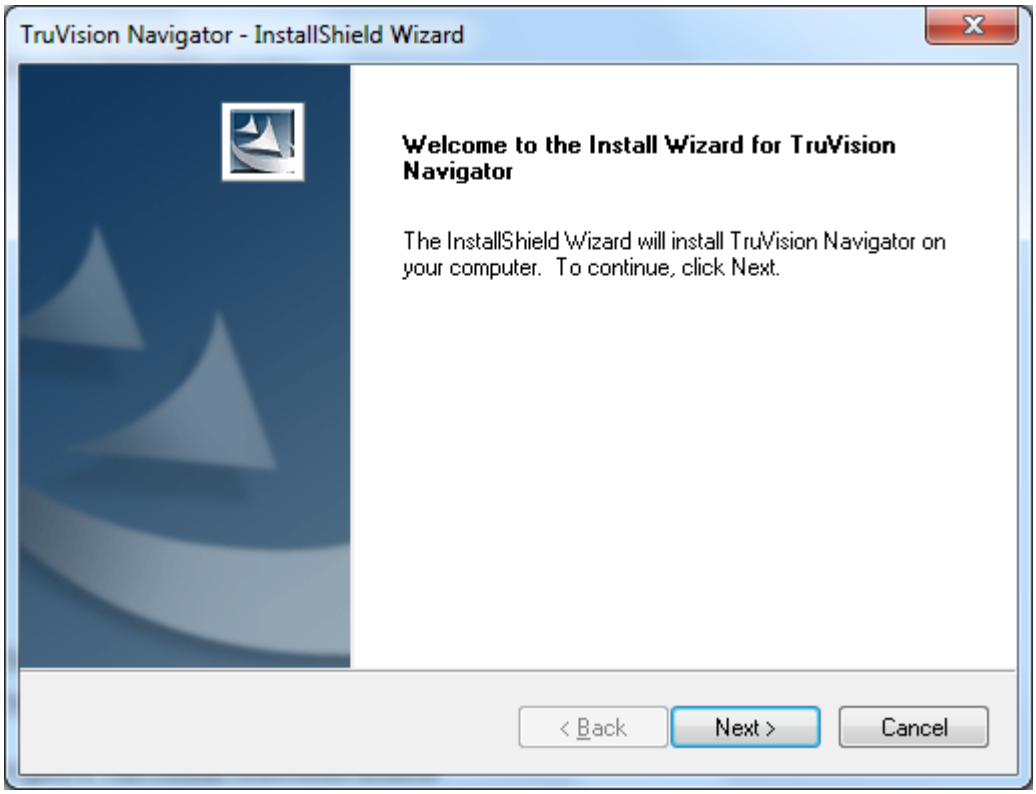
- Once the prerequisites have been installed, TruVision Navigator will begin its own upgrade process. Click Cancel to exit the upgrade.

Figure 29: InstallShield Wizard Dialog



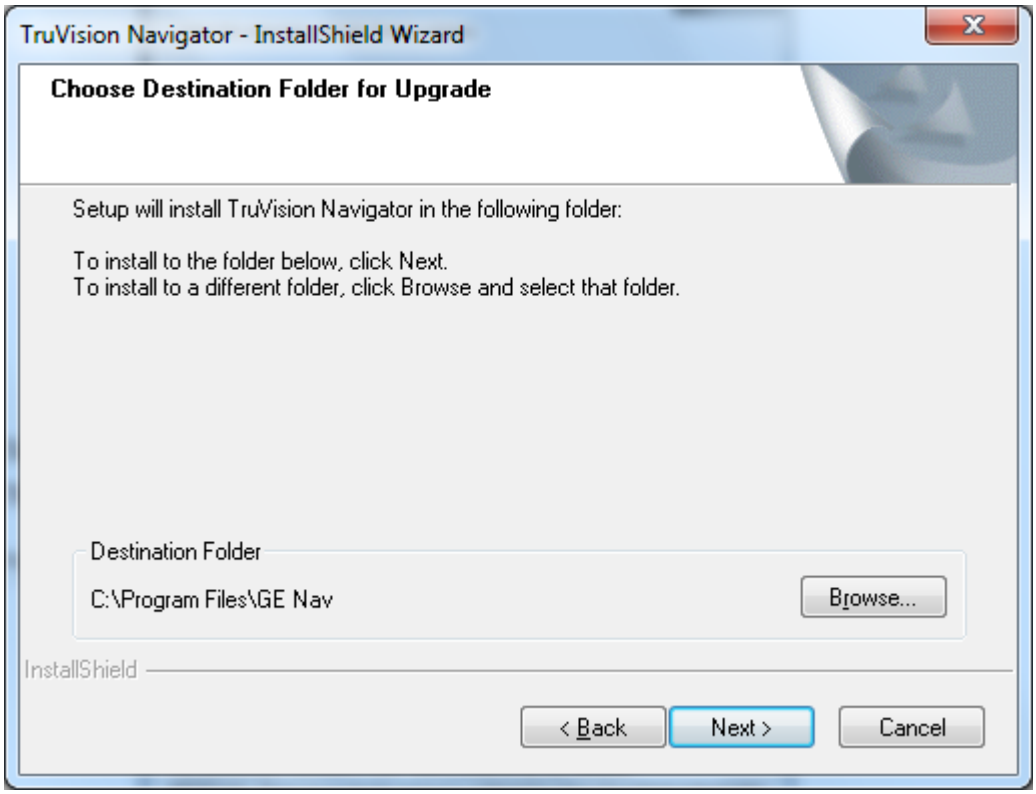
- The *Welcome Dialog* displays. Click Next to continue.

Figure 30: Welcome Dialog



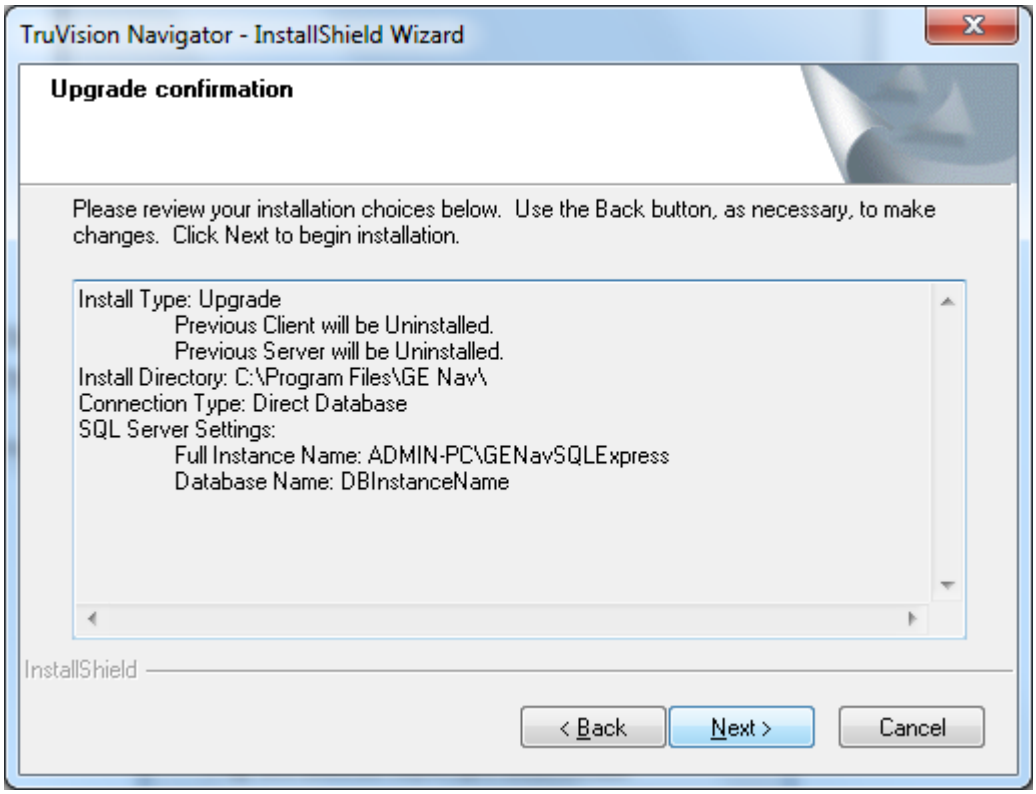
- The *Choose Destination Folder for Upgrade Dialog* displays and auto-detects the location of where the existing instance is located. This dialog allows you to change that destination for the application payload. Change it if required and click Next to continue.

Figure 31: The Choose Destination Folder for Upgrade Dialog



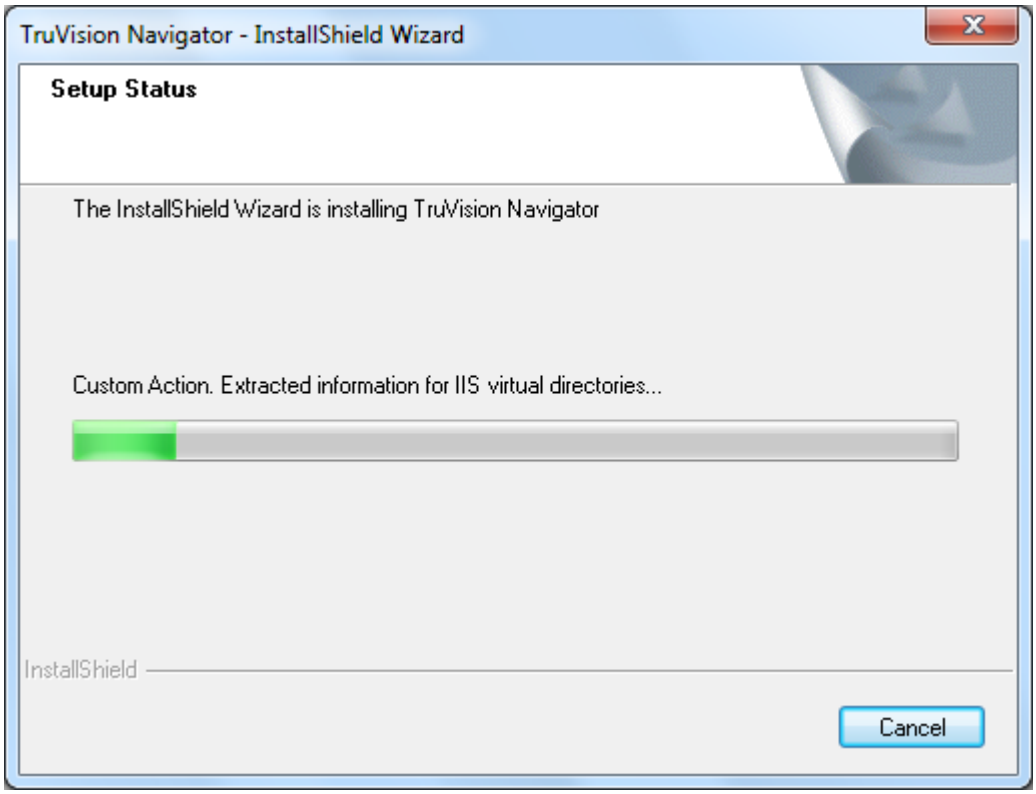
- The *Upgrade Confirmation Dialog* displays and allows you to review your upgrade choices to that point. Click Back to change choices or Next to continue. If you click Next, the upgrade process will begin.

Figure 32: Upgrade Confirmation Dialog



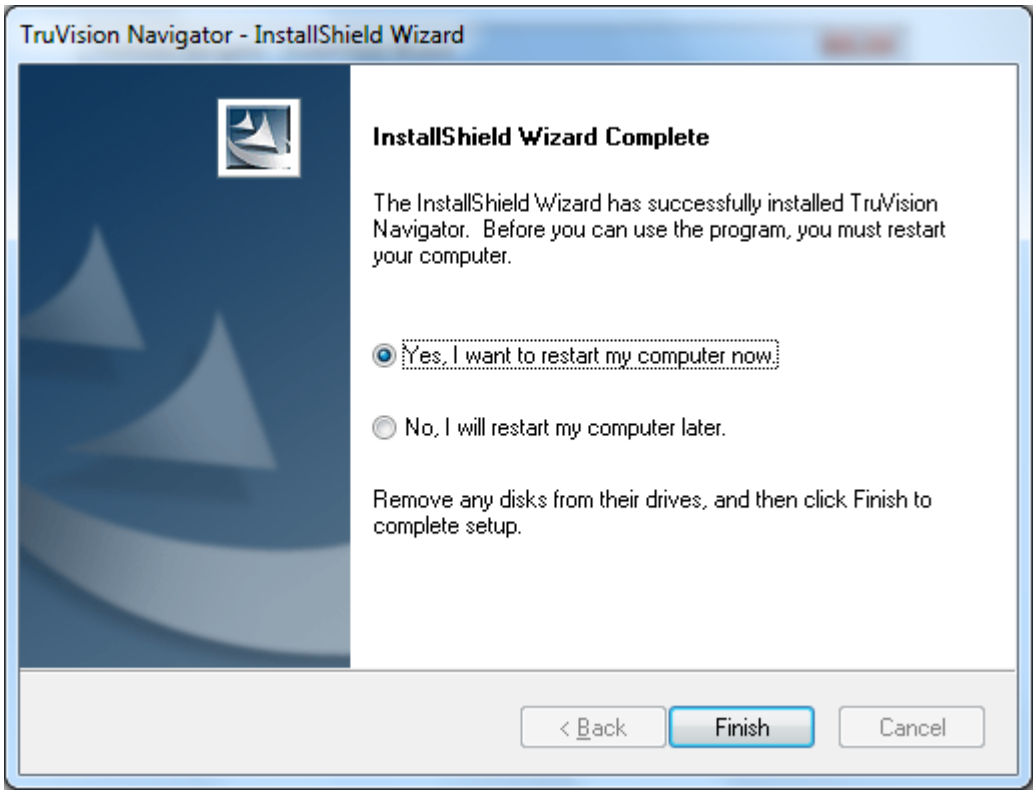
- The *Setup Status Dialog* displays giving you status on the upgrade process. Click Cancel to stop the upgrade.

Figure 33: Setup Status Dialog



- The *InstallShield Wizard Complete Dialog* displays prompting you to reboot your system. Click Yes and Finish. A new TruVision Navigator icon will be placed on your desktop and in your Start Menu to access the application. Upgrade is now complete. Remember to login in with your existing user credentials as this was an upgrade and not a new installation.

Figure 34: InstallShield Wizard Complete Dialog



Disable User Account Control (UAC)

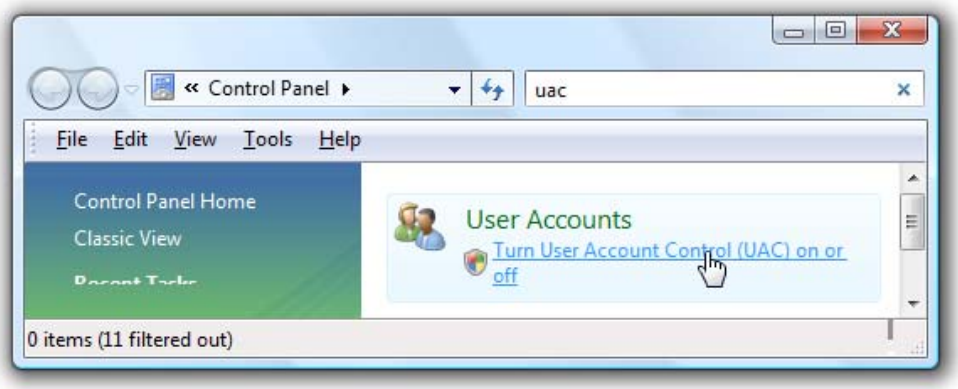
Microsoft implemented User Account Control (UAC) in Windows Vista and Windows 7 to help prevent unauthorized changes to your computer. It works by prompting you for permission when a task requires administrative rights, such as installing software or changing settings that affect other users.

When UAC is enabled on the PC with TruVision Navigator, you will experience issues with video rendering and general operation of the application. As a result, you will need to disable UAC on the PC where the application is located. You must have Admin rights on the PC to disable UAC. If you do not have Admin rights, contact your local Administrator to disable it for you.

To disable UAC for Windows Vista:

- Open up Control Panel, and type in “UAC” into the search box. You’ll see a link for “Turn User Account Control (UAC) on or off”.

Figure 35: Control Panel for UAC



- On the next screen you should uncheck the box for “Use User Account Control (UAC)”, and then click on the OK button.

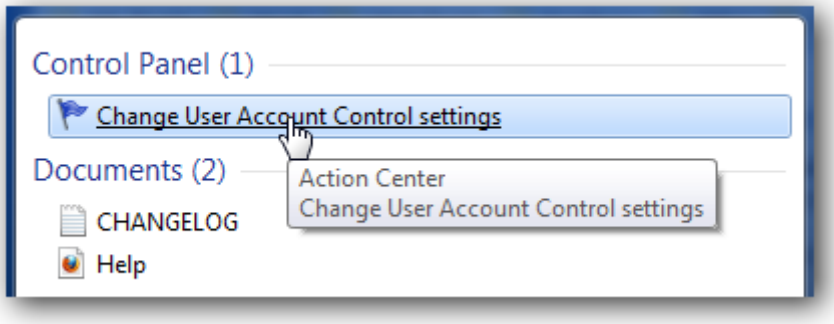
Figure 36: Turn off UAC

- Reboot your computer for the changes take effect.

To disable UAC for Windows 7:

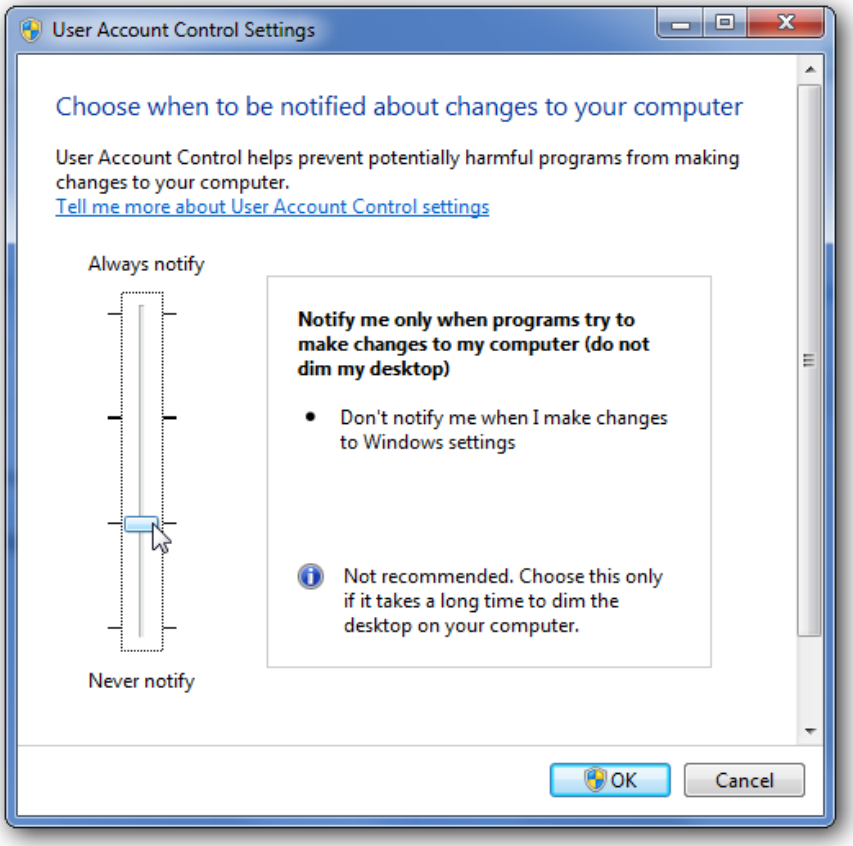
- Type UAC into the Start Menu or Control Panel search box and then click on Change User Account Control Settings.

Figure 37: Search for UAC



- Drag the slider down to Never Notify and UAC will be disabled.

Figure 38: Turn off UAC



Initial Login

After successful installation, launch TruVision Navigator using one of the following methods:

- Double-clicking on the TruVision Navigator icon on your desktop.
- Access the Start menu, All Programs, TruVision Navigator.

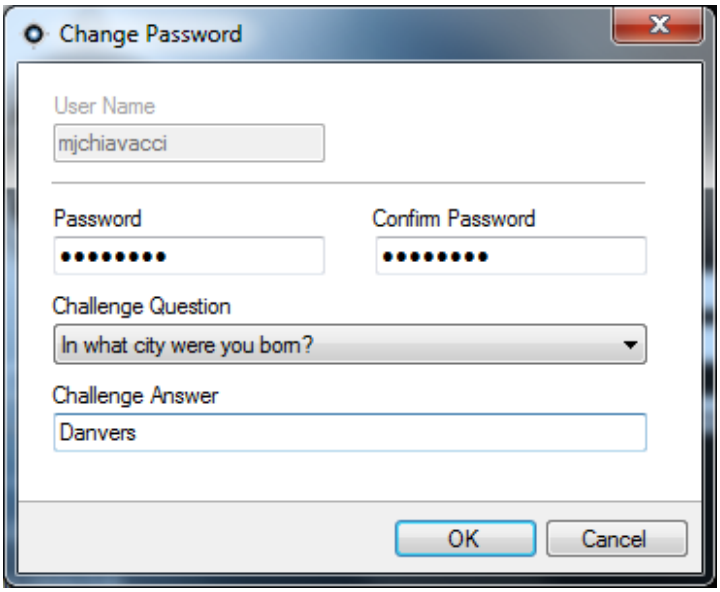
When TruVision Navigator launches, a Login dialog displays. Log in as the default Administrator using the following default credentials:

- Username = admin
- Password = admin

Figure 39: Login Dialog

After initial login, a window displays prompting you to change the default admin password which protects its security.

Figure 40: Change Password Dialog

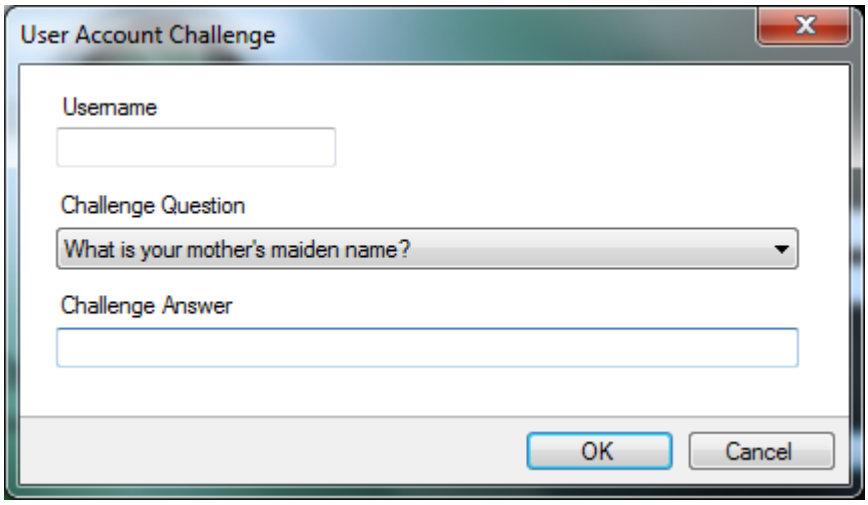


To change the password, do the following:

- Enter the new password in the *Password* field.
- Re-enter the password in the *Confirm Password* field.
- Select any one of the challenge questions from the drop-down list.
- Enter the answer to that challenge question in the *Challenge Answer* field.
- Click **OK**.

If you ever forget your password, simply click on the **Forgot**? button on the Login dialog. This will allow you to answer your challenge question, and if successful, change your password and re-enter the application without calling for any assistance.

Figure 41: User Account Challenge Dialog

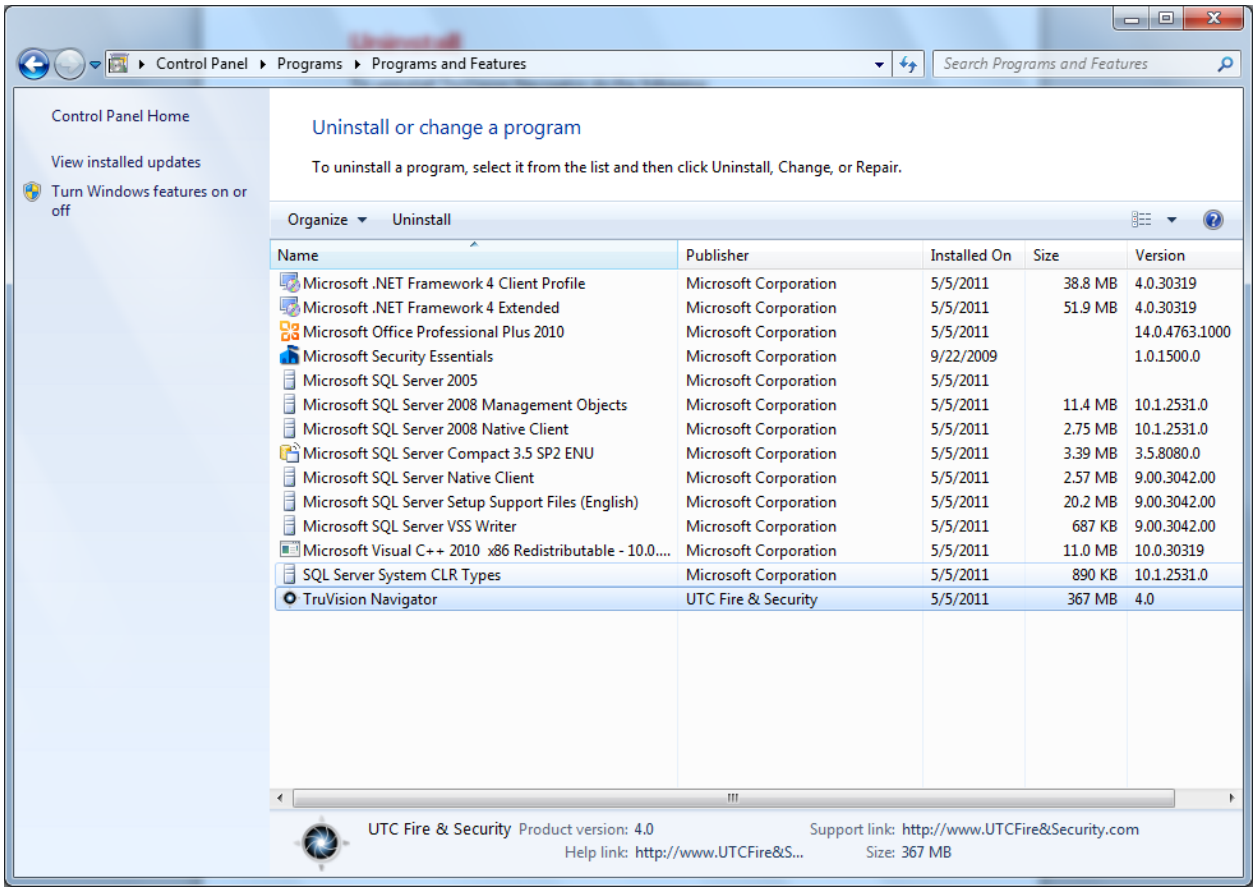


Uninstall

To uninstall TruVision Navigator do the following:

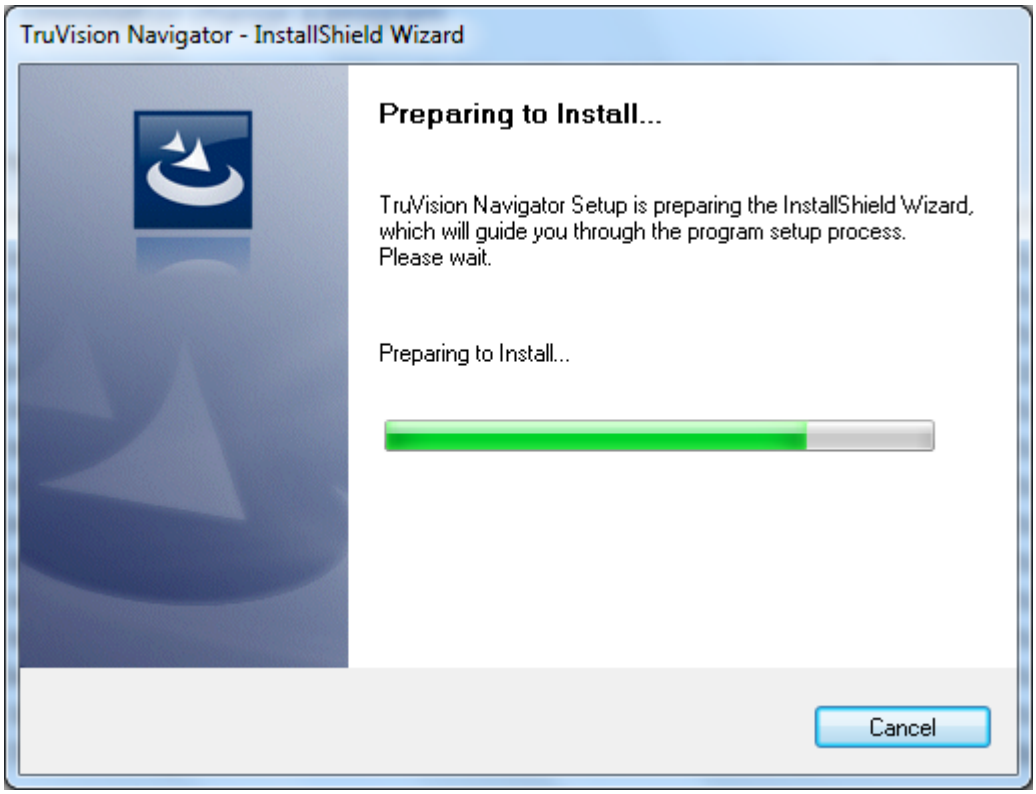
- Launch the Add/Remove Programs application from Windows Control Panel.
- Navigate to TruVision Navigator and click **Uninstall**.

Figure 42: Add or Remove Programs Dialog



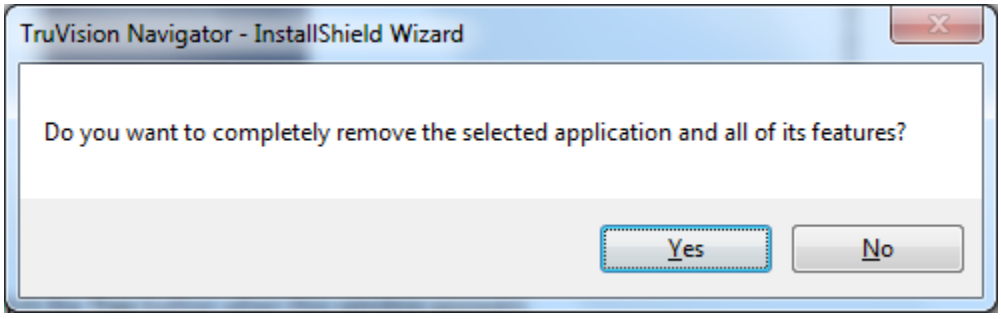
- The *InstallShield Dialog* displays and prepares to remove the application.

Figure 43: InstallShield Wizard Dialog



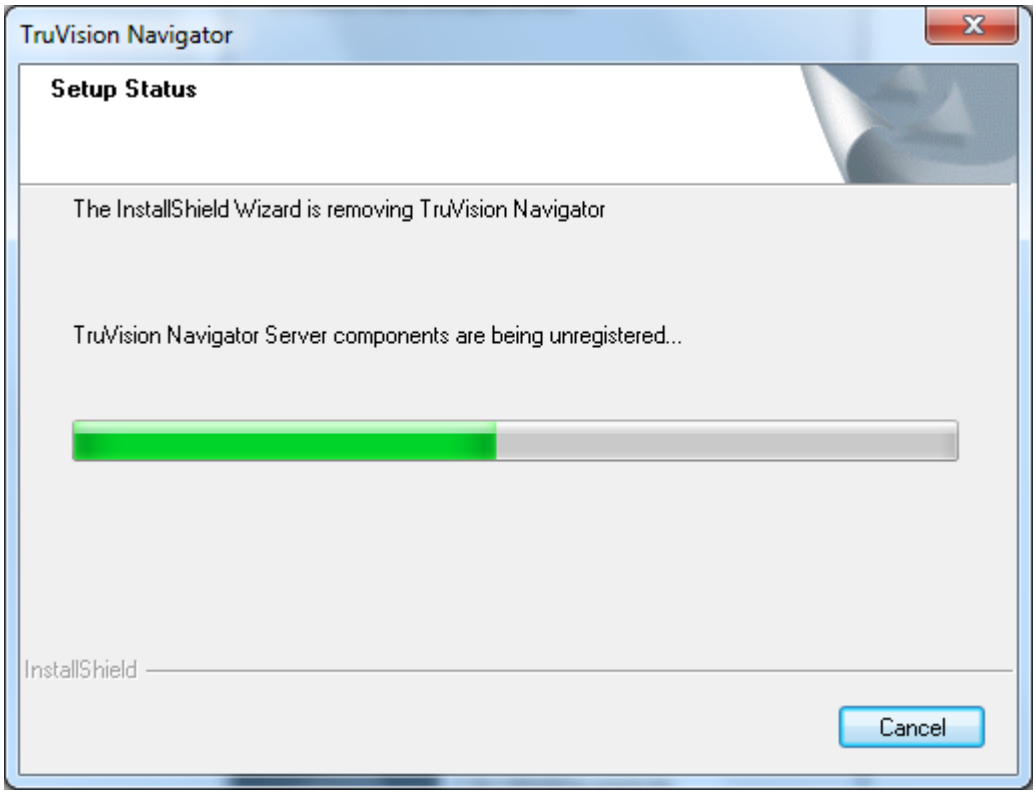
- Click **Yes** to confirm removal of the application.

Figure 44: Confirmation Dialog



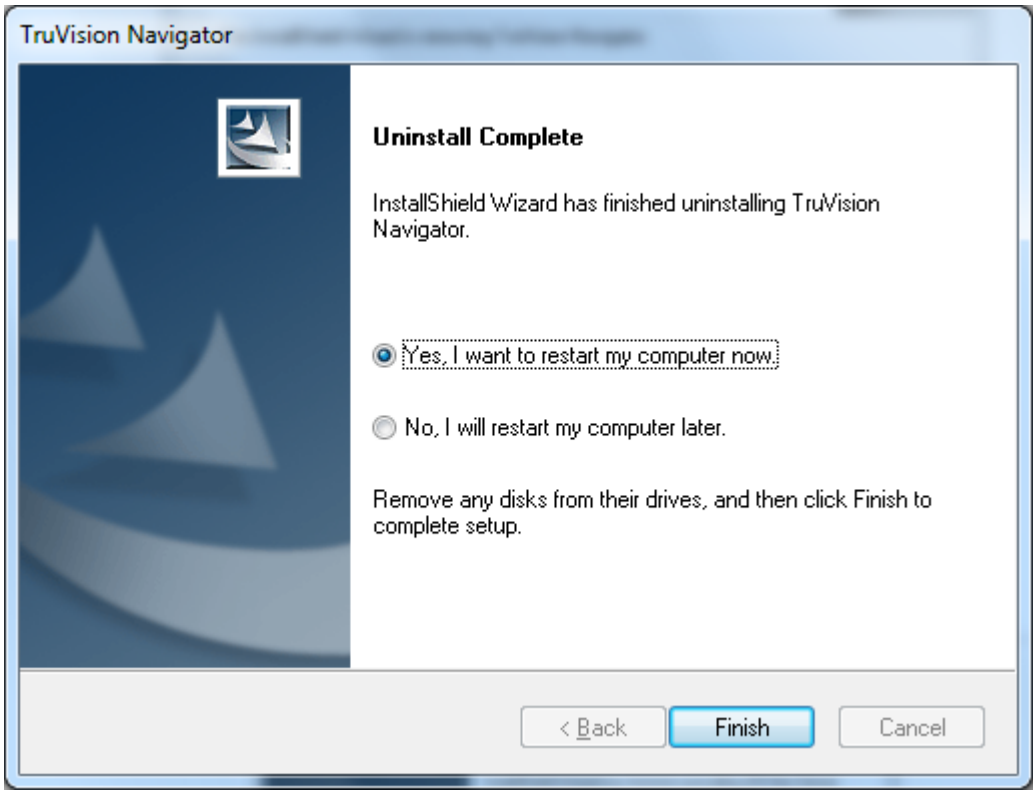
- The Status Dialog will provide updates on the uninstall progress.

Figure 45: Setup Status Dialog



- When complete, click Yes and **Finish** to restart your computer.

Figure 46: Uninstall Complete Dialog



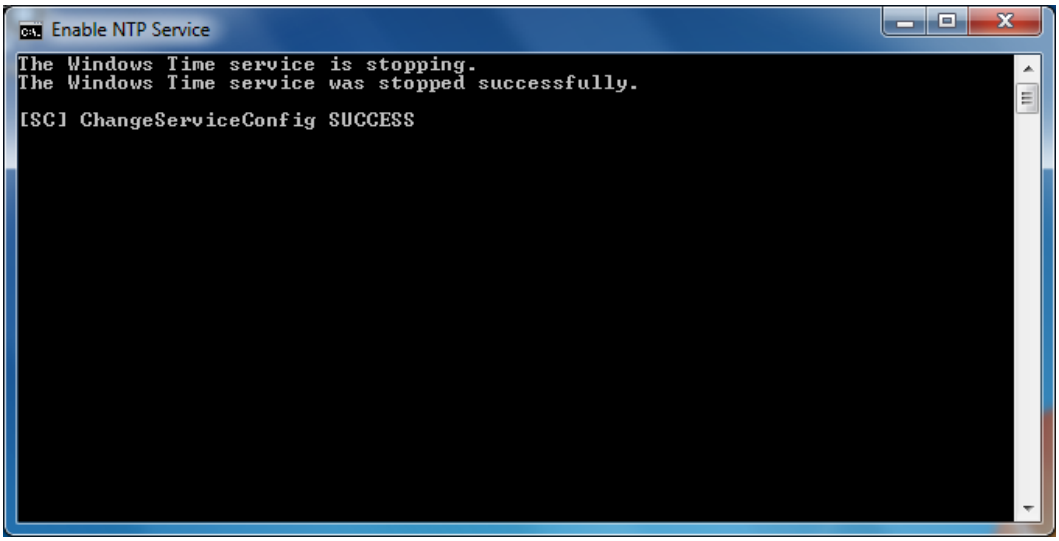
- This process will remove all TruVision Navigator files and logs from your system. No Registry edits are necessary to remove TruVision Navigator from a machine.

Network Time Protocol (NTP) Service

The TruVision Navigator Server has the ability to act as an NTP Service for devices on the network (you also have the flexibility to use other 3rd party NTP Services should you choose).

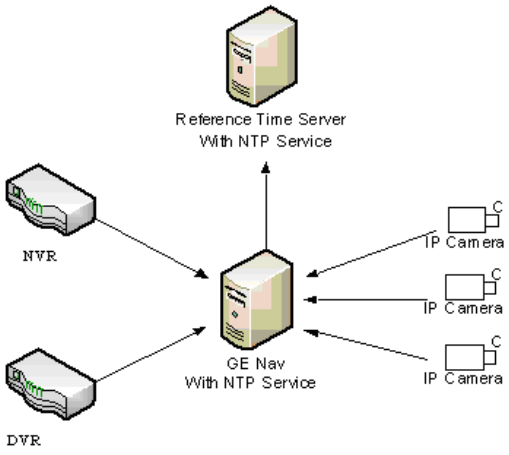
- Enable the NTP Service in TruVision Navigator by going to Start – All Programs – TruVision Navigator – Enable NTP Service.
- This will enable the NTP Service on the TruVision Navigator Server. You will need to configure the device's NTP Server field with the IP Address of the TruVision Navigator Server where this NTP Service is running.

Figure 47: Enable NTP Service Dialog



- If your system is closed (meaning no Internet access), the devices configured to point to the TruVision Navigator NTP Service will use that server machine's CMOS clock. Please ensure this clock is up to date.
- If your system is open (meaning it has Internet access), you can still have the devices point to the TruVision Navigator NTP Service for time sync AND have the TruVision Navigator NTP Service point externally to a time reference server to maintain that system time. This alleviates the maintenance of manually ensuring the time on the TruVision Navigator Server is up to date.

Figure 48: Open System NTP Diagram



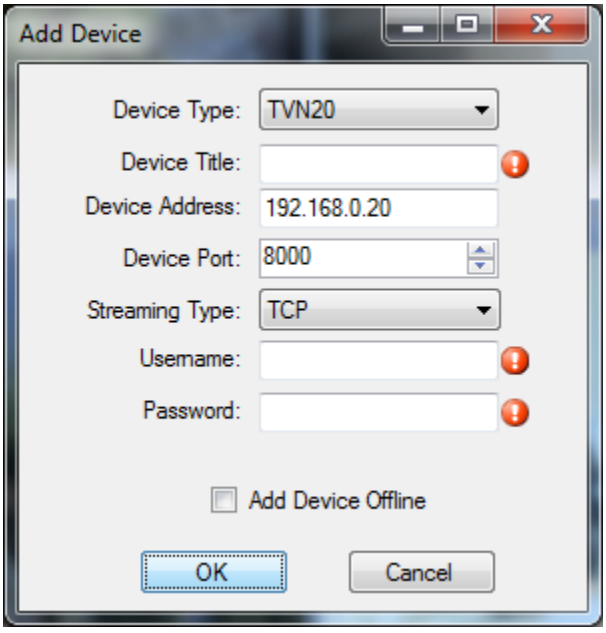
Chapter 3
Operation

Adding a Single Device

Add a single device to the Navigator by doing the following:

- Click the Add Device button in the Navigator. The *Add Device* dialog displays.

Figure 49: Add Device Dialog



- Select the appropriate *Device Type* from the drop-down menu.
- Enter a *Device Title*. Values are alphanumeric.
- Enter the device's static IP Address. You can also add a device using a Domain Name System (DNS) name. Simply place the DNS name in the IP Address field on the form.

- Enter the device's listen Port. This field is pre-populated with a default value based upon the type of device you selected. If you changed this port on the device, add that specific port in this field.
- Based on your device type, you may need to select a *Streaming Type*. For some devices, there is only one option for the Streaming Type so it is selected by default. The Streaming Types are defined as follows:
    - TCP - TCP is a reliable stream delivery service that guarantees delivery of a data stream sent from one host to another without duplication or losing data.
    - Reverse TCP - the application connects to the device and the device streams video back to the application over the existing connection. This option negates firewall issues on a WAN.
    - Reverse TCP I-Frame - this connection type is similar to the Reverse TCP except the device only sends I-Frames. This option is useful in limited bandwidth environments.
    - UDP - the application connects to the device and asks the device to stream video back to the application on a UDP address and port. For this option, the firewall needs to be configured to allow the device to stream to the application on that specific port.
    - Wavelet/Wavejet - This type is based upon Wavelet/Wavejet compression methodologies. This streaming type cannot be changed and is the default streaming type for the DVMRe and StoreSafe DVR lines.
- Enter the Username and Password. This field is only required if the device being added has been configured to require a username and password.
- Check the Add Device Offline checkbox if you wish to add the device to the Navigator when you know the device is currently offline.
- Click OK.

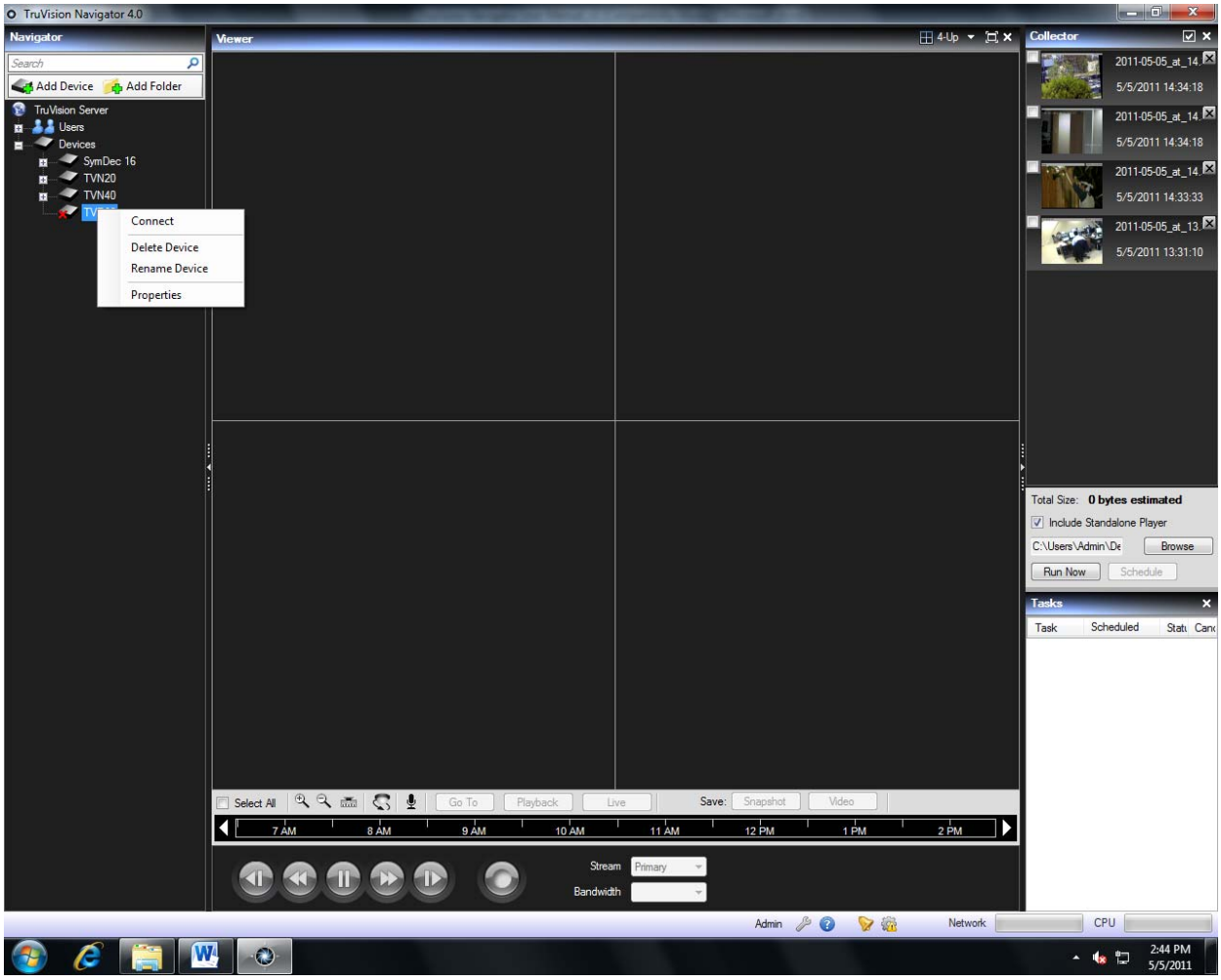
Note: After you enter the required information and click OK, fields highlighted with a red exclamation point indicate rejected values. Place your mouse pointer over the exclamation points for tips on why your values were invalid. All fields must be valid to successfully add a device.

Upon addition, you may see an error message stating that your device was added but it has unsupported firmware. However, you should still be able to view video. See the supported devices and firmware versions section of this document.

Your device should now appear under the Device node in the Navigator panel. Expand the device icon to view your cameras. If you chose to add the device offline via the Add Device Offline checkbox, your device will appear in the

Navigator with a red X on it. You can bring the device online by right-clicking on the device and selecting Connect. Upon successful connection, the Navigator will populate the respective cameras under the device.

Figure 50: Connect to an Off-line Device



If you have channels on a DVR that will not be used, you can mark them as such so they do not appear in the Navigator under the DVR. To do this:

- Right-click on the device and select Get Configuration. The Configuration dialog will display.
- Go to the Camera Tab, and for those specific cameras, uncheck the "Show camera in Navigator" checkbox.
- Click Save. This will hide the cameras in the Navigator.
- To show them again, simply check the same box in the configuration and click Save.

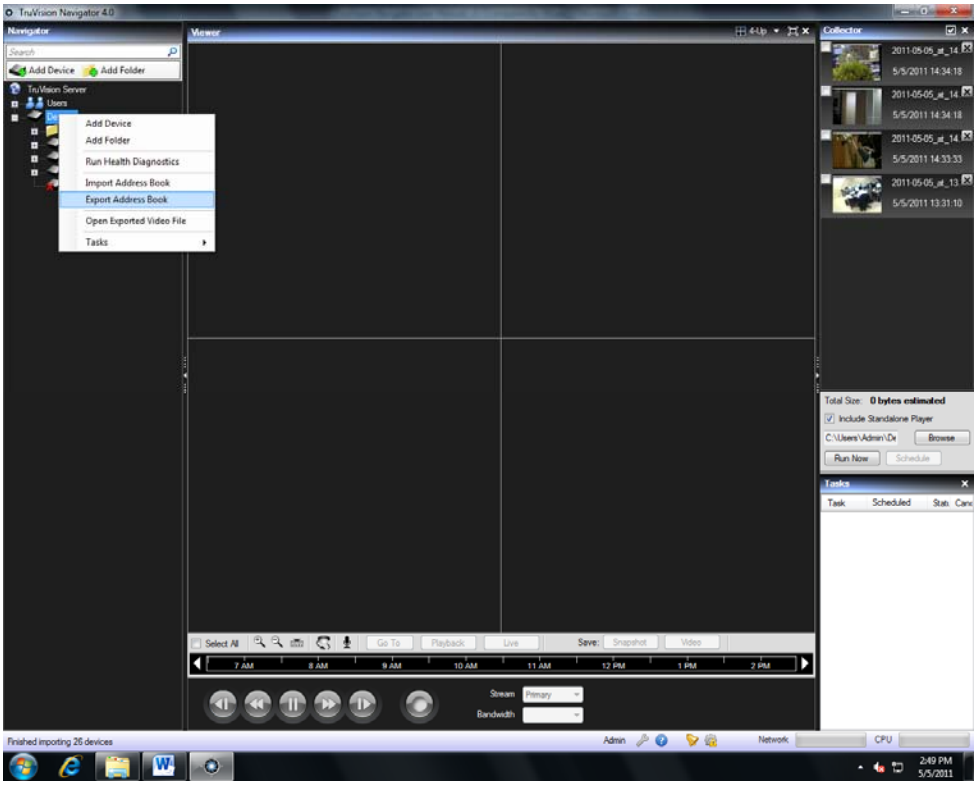
Export address book

TruVision Navigator allows address book imports from the following other applications – WaveReader, SymNav, and other TruVision Navigator instances.

Prior to performing an address book import into TruVision Navigator, you must first export the address book from the other respective application.

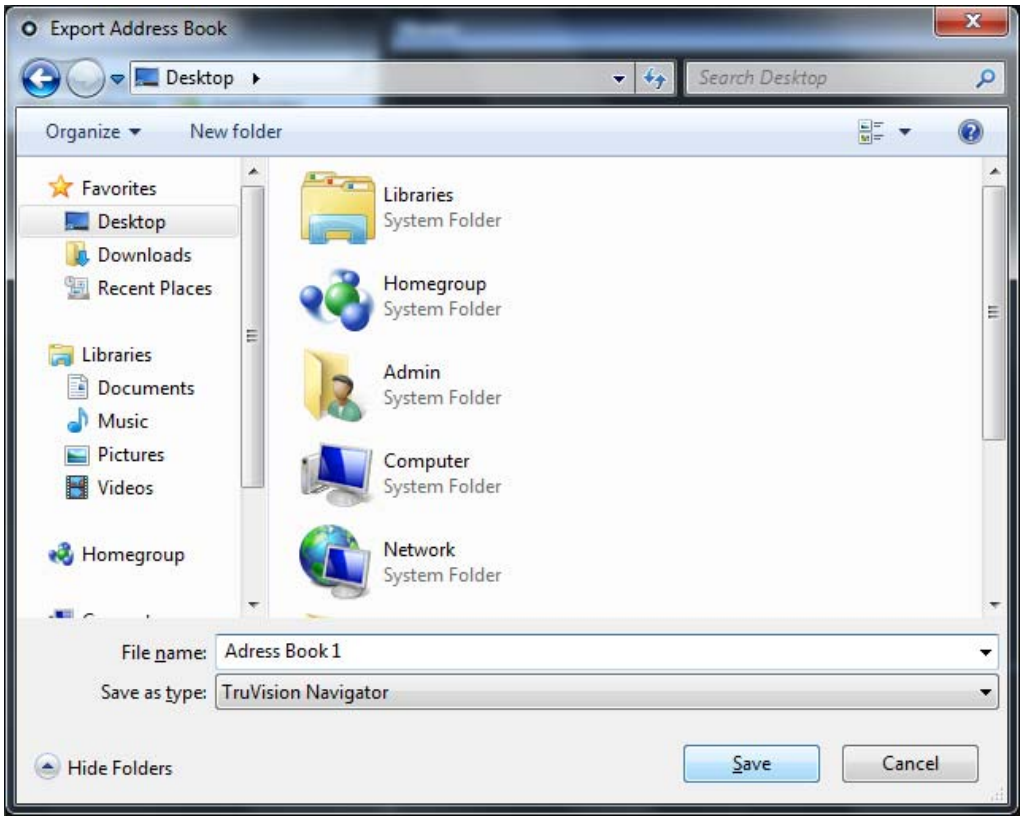
- To export an address book from WaveReader, use export Option 1 to export to a comma-delimited file. Save that (.txt) file to a location for later use.
- To export an address book from SymNav, use the Comma Delimited File option. Save that (.txt) file to a location for later use.
- To export an address book from TruVision Navigator, right-click on the Device node and select Export Address Book.

Figure 51: Export Address Book



- Save the address book (.csv format) to a specific location for later use.

Figure 52: Save Address Book

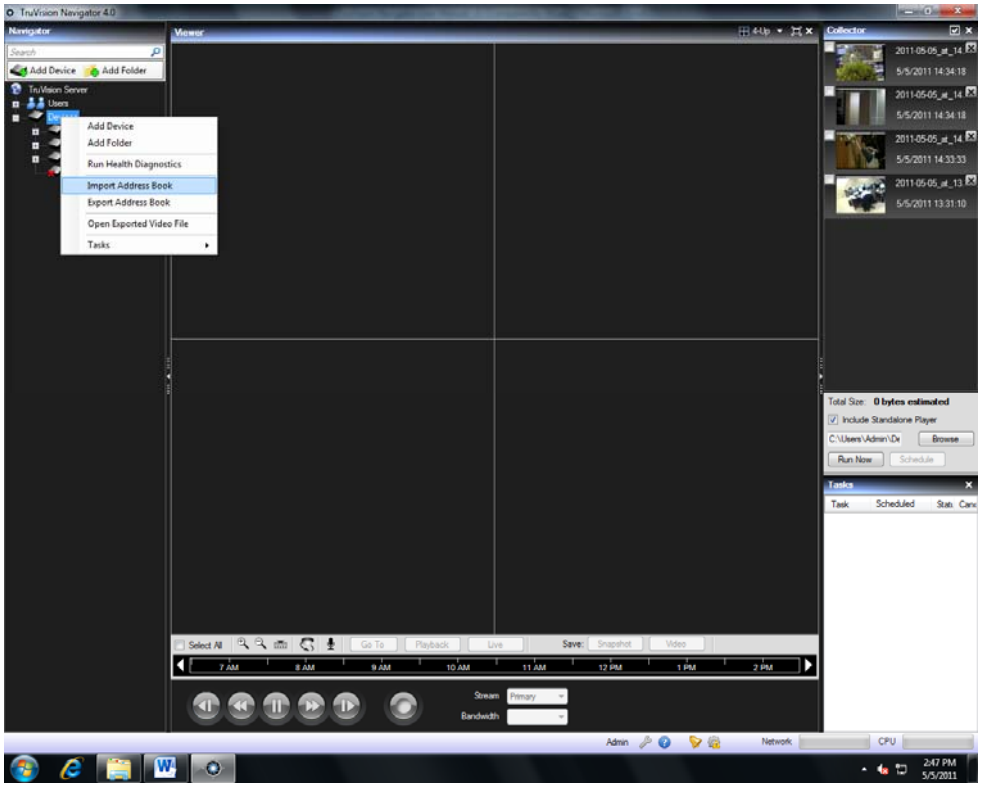


Import an address book

To import an address book from WaveReader, SymNav, or TruVision Navigator, do the following:

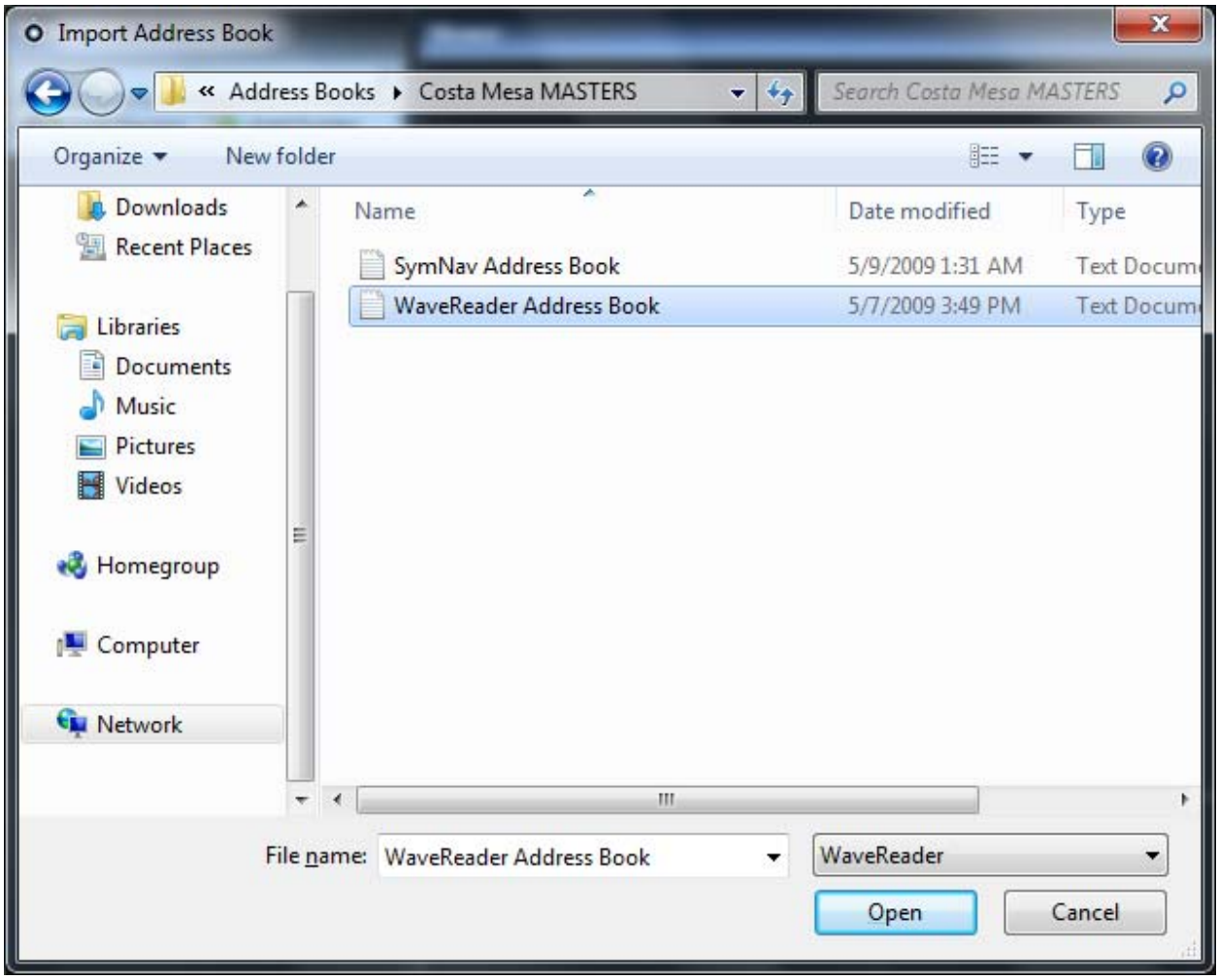
- Right-click on the Devices node in the Navigator and select Import Address Book.

Figure 53: Import Address Book



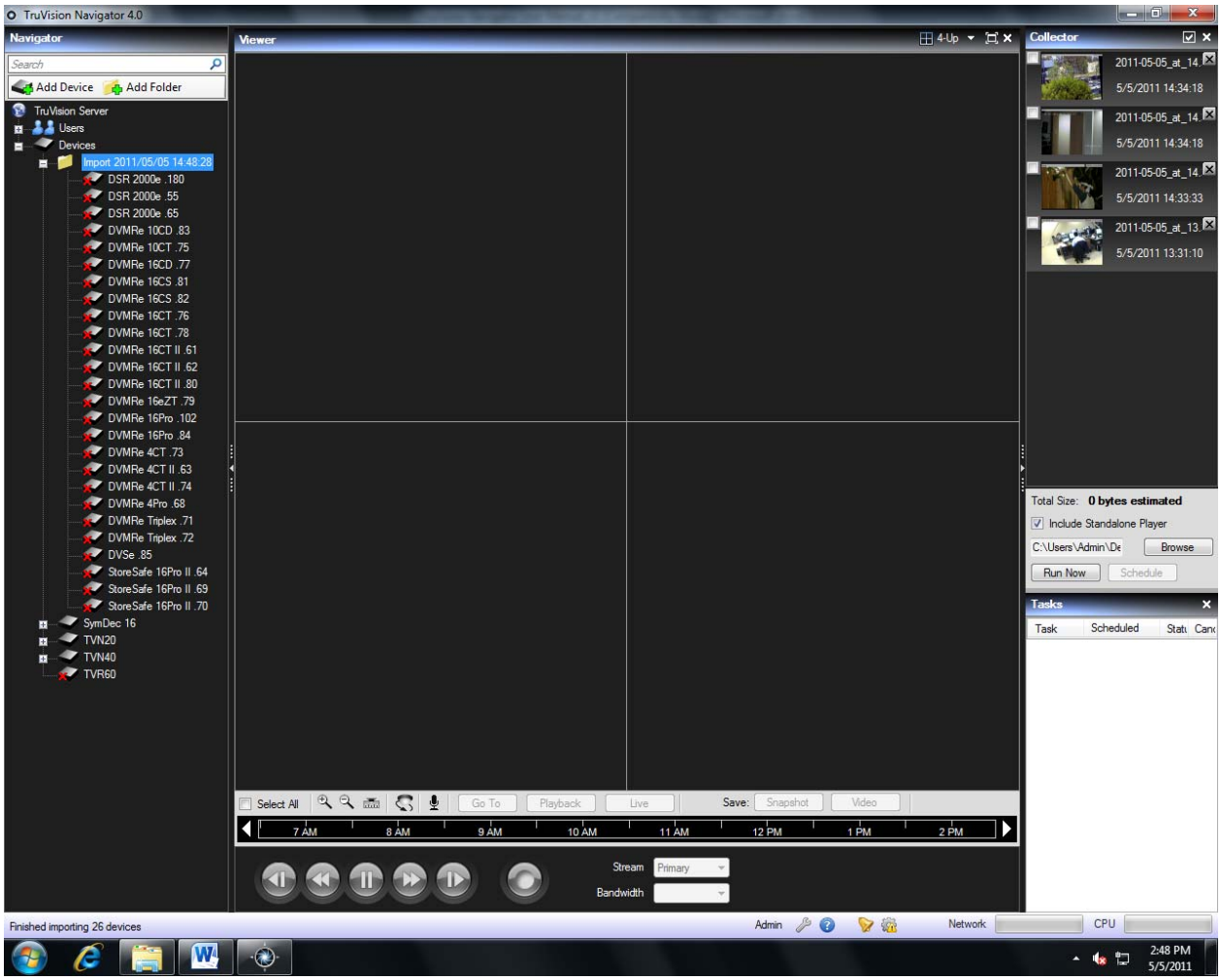
- Select WaveReader, SymNav, or TruVision Navigator from the drop-down menu above the Open button.
- Browse and locate the address book export file that you have saved.
- Click Open.

Figure 54: Browse for Address Book



- Your successfully imported devices are instantly placed by default in a newly created import folder with a time/ date stamp in the Navigator.
- These devices have been imported as off-line devices (signified by the red X on the device). To connect to an off-line device right-click on the device and select Connect.

Figure 55: Connect to offline devices



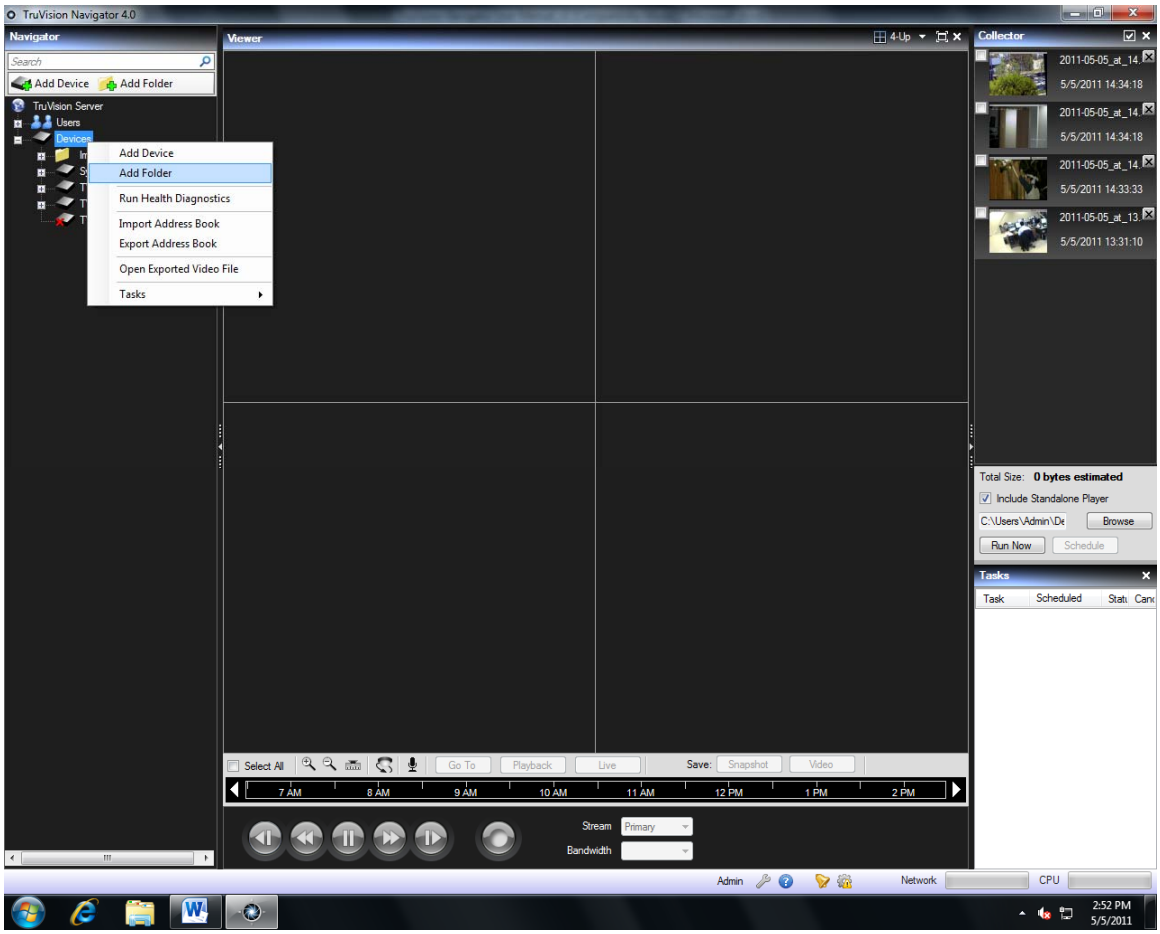
Organize the Navigator

The Navigator allows you to organize your devices in a logical manner. As systems get larger, this will enable you to find your devices and cameras more easily.

To organize your Navigator, do the following:

- In the Navigator, click the Add Folder button. This creates a new folder.
- Enter a name for the new folder and press Enter.
- To add a sub-folder within the previously created folder, right-click on the parent folder and select Add Folder from the context menu.

Figure 56: Navigator Folders



- Click and drag devices into folders or folders within folders until your organization is complete. Remember that cameras will always stay attached to their respective recording devices.

Another easy way to find any object (user, group, folder, device, or camera) in the Navigator is to use the Search at the top of the panel.

- Simply type any alphanumeric string into the Search field and press Enter. Focus will go instantly to the object that matches the string.
- Press Enter again to move to the next object that matches the string, and so on, until you have been to each object.
- Enter a different alphanumeric string to perform another search.

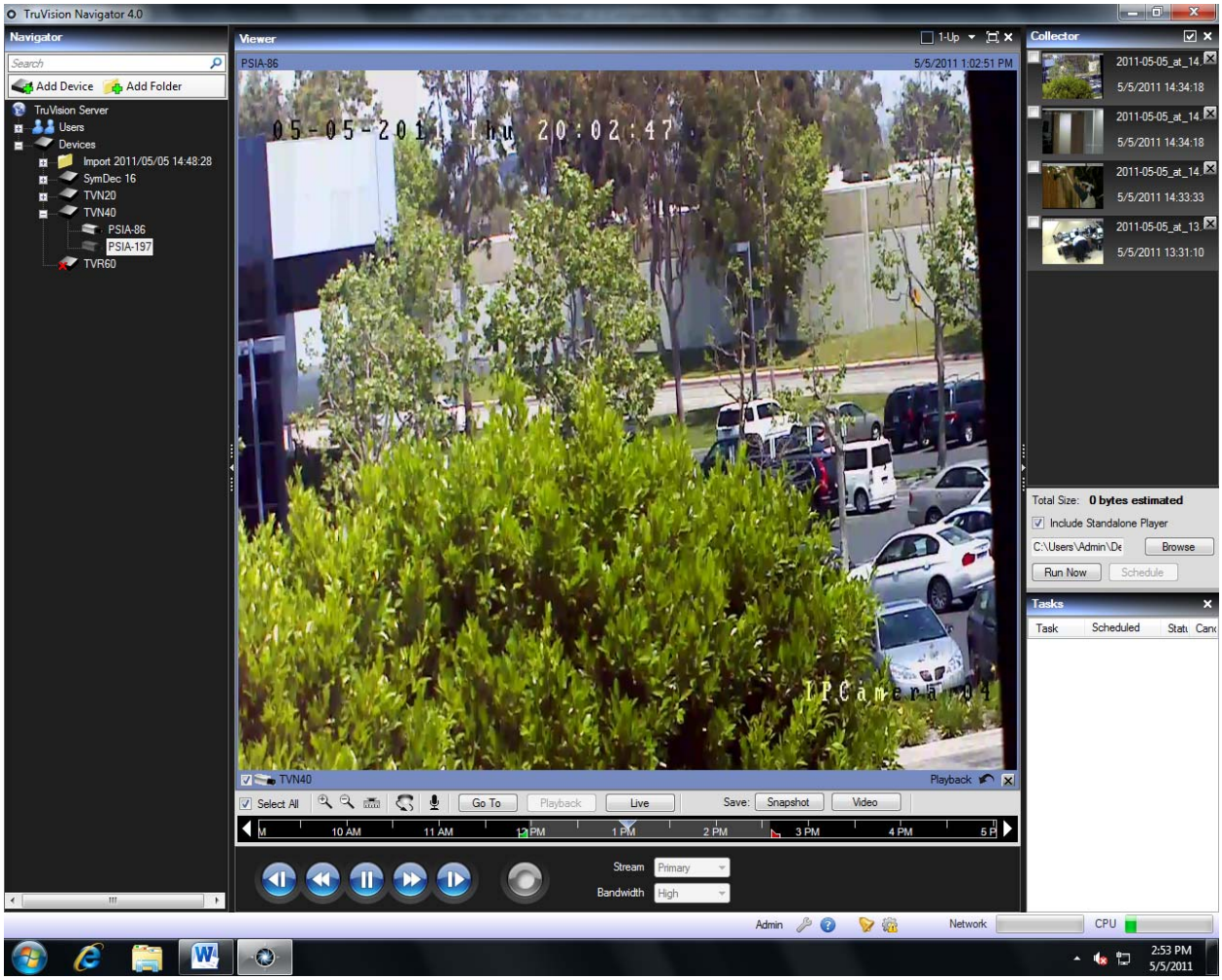
Find and export video

There are three ways to load video from the Navigator into the Viewer:

- Double-click on a specific camera to see it open in the Viewer.
- Drag n’ drop a specific camera to the Viewer.

- Drag n’ drop a specific device to the Viewer which will load all of the cameras applicable to that device.

Figure 57: Viewer Operations



By default, video will be loaded in the Viewer in Live mode. Video status (Live or Playback), camera type, and device name can be found in the video tile status bar (thick bar at the bottom of the video tile) along with the Instant Replay and Close Video Tile buttons.

To go from Live to Playback video, you must first select camera(s) in the Viewer by clicking on that video tile - a blue frame should surround the selected video tile.

If you want to select multiple video tiles, use the Select All check box in the Viewer toolbar or single-select each video via the Select check box on the video tile itself.

Once video tiles are selected, perform one of the following operations to retrieve Playback video (assuming there is video on the device for the specified time):

- Go To Search – click on the Go To button in the Viewer toolbar, enter a date and time, and click OK. Playback will start at the desired date and time.
- Playback Button – click on the Playback button in the Viewer toolbar to go back a user-defined period of time (the same time you set for Instant Replay - i.e. 5 minutes).
- Instant Replay Button - click on the Instant Replay button in the video tile status bar to go back a user-defined period of time (i.e. 5 minutes).
- Timeline - double-click on the Viewer timeline for a point-in-time in the past. Playback will start at the desired date and time.
- Playback Controls - use the playback controls (as devices permit) for Frame Advance, Fast Forward, Frame Reverse, Rewind, Pause, and Play to pinpoint the exact incident you want.

Once the video is in Playback, a blue seek triangle displays in the timeline indicating where the selected video is playing in time. Drag and drop the blue seek triangle backwards or forwards along the timeline to locate video.

Place your cursor over the blue seek triangle and green / red markers will display underneath. The green marker represents the beginning time and the red marker represents the ending time of the video segment you want to export. Slide both markers as appropriate to mark the video segment.

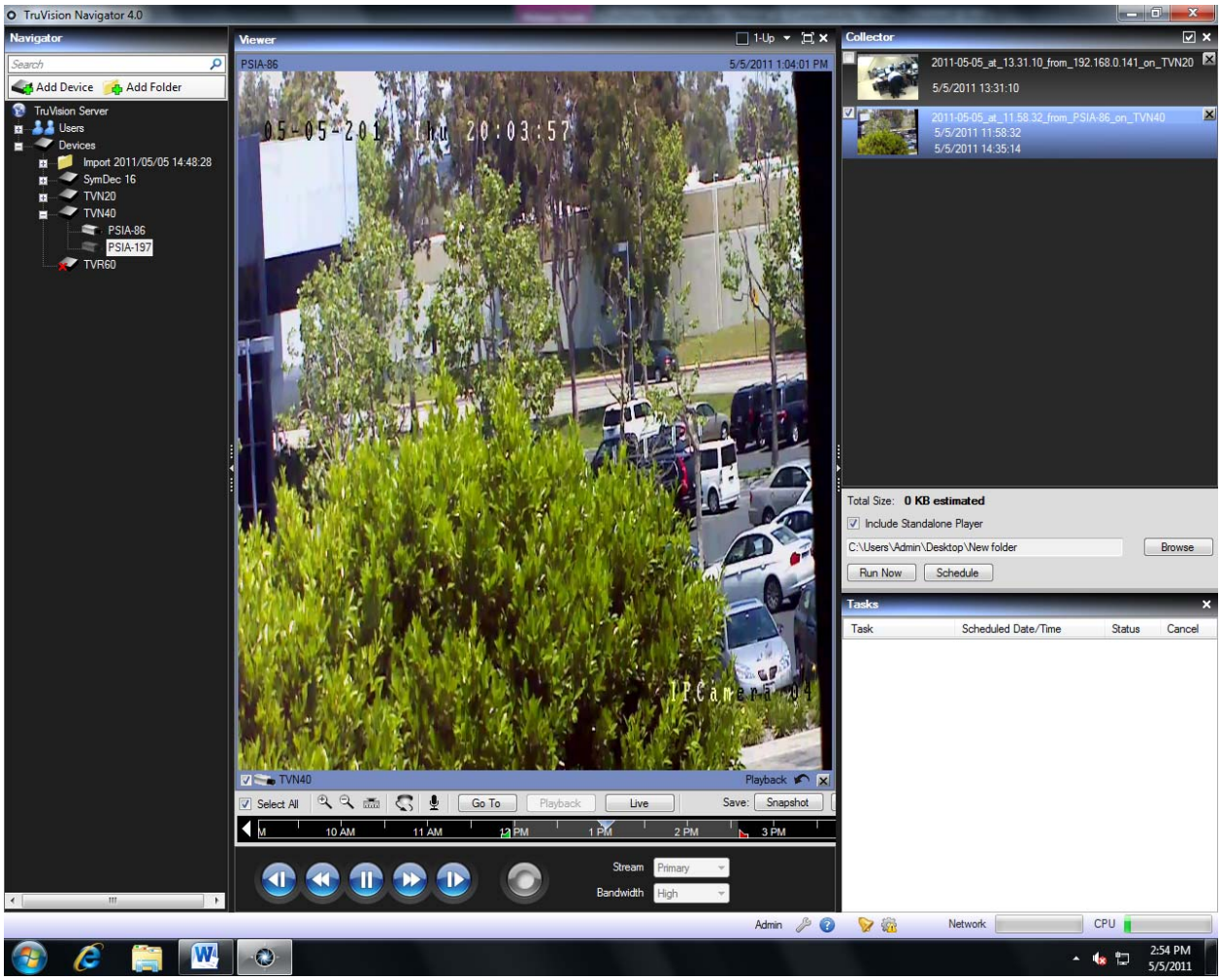
To move the video segment to the Collector for export, click the Video button in the Viewer toolbar. To move a snapshot to the Collector for export, click the Snapshot button in the toolbar.

Thumbnails for snapshots and video segments will be added to the Collector and readied for export.

- Snapshots display a start time as it is a single point in time.
- Video segments display a time range that corresponds to the time range you marked on the timeline.

Double-click a snapshot or video segment thumbnail to replay it in the Viewer and refine your time/date ranges.

Figure 58: Collector Panel



Export all collected video and snapshots to a specific location using the Collector.

To export video or snapshots, do the following:

- Access the Collector and select each thumbnail that you wish to export (you can use the select all/unselect all button in the Collector header bar for quick selections).You can also right- click on snapshots to print, email, or rename them.
- Check the Include Standalone Player checkbox. This ensures that the TruVision Navigator standalone player is included in your destination folder.
- Click Browse and specify a destination location for your export. This path will persist until you change it, so you do not have to repeatedly select the same destination folder.

Note: Make sure you have an appropriate amount of disk space at the destination location for the export. Use the Total Size estimation in the Collector as a guideline.

- To start the export process immediately, click the Export Now button. Your export task is automatically added to the Tasks panel. You can mouse over the status column in Tasks to get detailed progress of the export.
- To schedule the export process, click the Schedule button and specify a date/time when you want the export process to start. An export task is automatically added to Tasks. Refer to it for status.

Note: Your Local Scheduling Service must be running to execute these video export tasks. Refer to the Services dialog for status and actions on all Services.

When export tasks are complete, you can find exported video and snapshots at the location you specified. These files can now be reviewed, burned to media, or stored for later use.

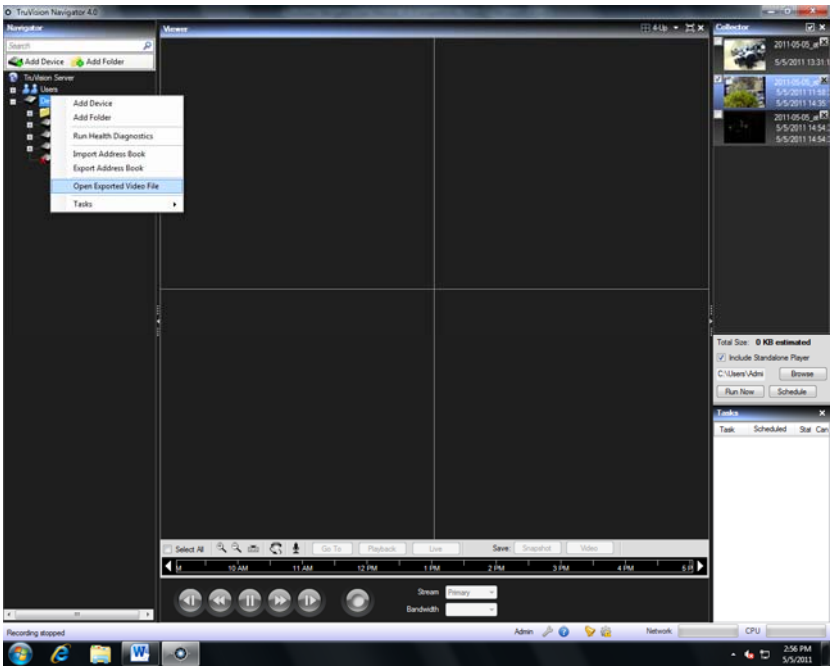
In addition, you can use the Local Record button to record live video directly to your machine. To create a local record video clip, do the following:

- Display and select a camera in the Viewer.
- Click on the red Local Record button (to the right of the playback controls) to begin recording. A thumbnail will display with a start time along with a red dot in the Collector.
- Click on the red Local Record button again to stop the recording to the machine. An end time for the thumbnail will automatically display in the Collector.
- Follow export operations as necessary to retrieve the local recording from the temp folder on the machine.

Finally, you have the ability to replay exported video files in the Viewer by doing the following:

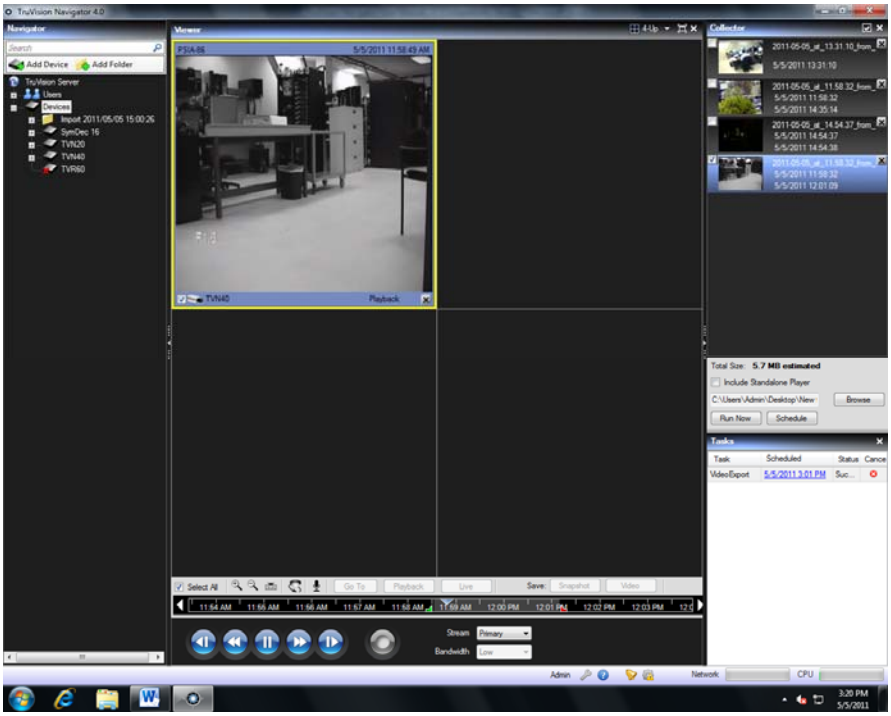
- Right-click on the Devices node in the Navigator and select Open Exported Video File.

Figure 59: Open Exported Video File



- The video file will play in the Viewer with a yellow boarder around it to signify playback of a local file. Use the playback controls to manipulate the video as needed.

Figure 60: Exported Video File playing in Viewer

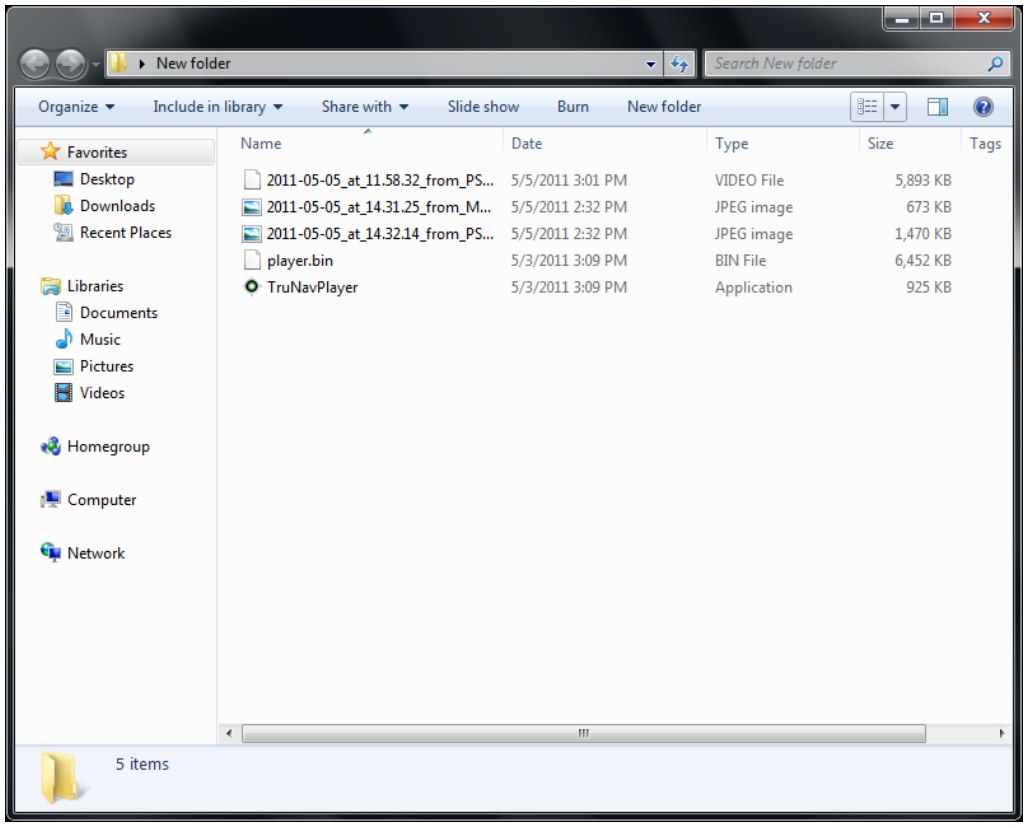


TruVision Navigator Player

The TruVision Navigator Player is a standalone player that can be used to replay any video clip that has been exported using TruVision Navigator. This player should be copied to media along with the video clips for authorities. It has a zero footprint – meaning it will launch from the media itself and does not require installation to a machine.

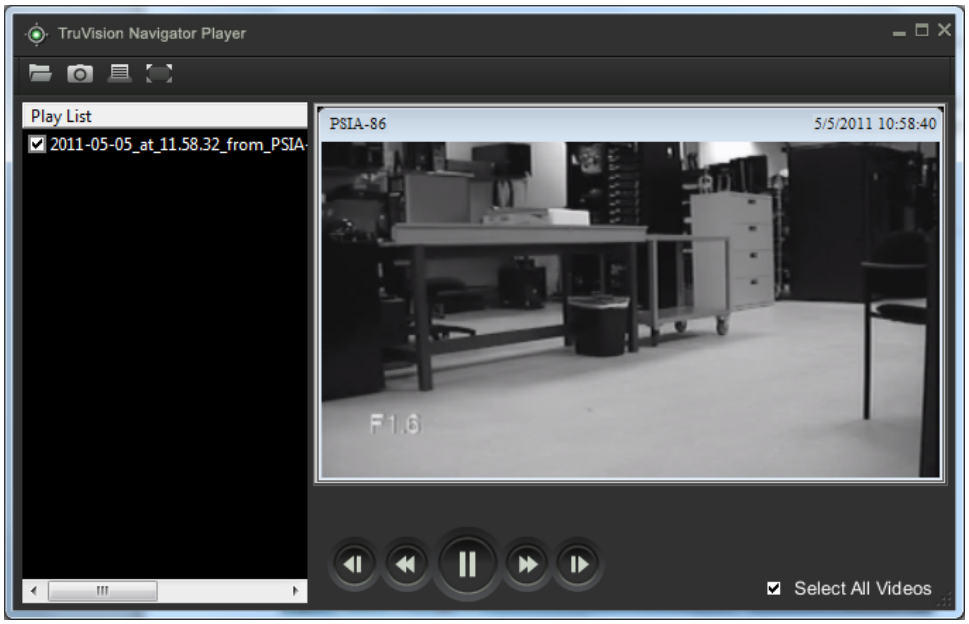
After exporting video clip(s) from the Collector to the user-defined location, you can launch the TruVision Navigator player by double-clicking the TruVision Navigator Player icon in the file folder where the video clips are located. **The player.bin file must be in the same directory as the TruVision Navigator Player.exe or the TruVision Navigator Player will not work.**

Figure 61: Video Export Location



Once launched, the TruVision Navigator Player will automatically sweep the directory and load the associated video clips in the *Play List* from that directory. By clicking the checkbox next to the clip in the Play List, the video will load in a tile (9-up maximum). Highlight the video tile and click the Play button to play the video.

Figure 62: TruVision Navigator Player Dialog



The features of the TruVision Navigator Player are:

- **Browse** – allows the user to browse for a specific video clip in another directory and load it into the Play List.
- **Snapshot** – allows the user to take a snapshot of the highlighted video tile.
- **Print** - allows the user to print a snapshot of the highlighted video tile.
- **Maximize Screen** – takes the TruVision Navigator Player full screen and hides the Play List and Tool Bar at the top of the application.
- **Playback Controls** – allows for FFWD, RWD, Play, Pause, Frame Reverse, and Frame Advance.
- **Timeline** – allows the user to jump ahead or back in time for a single selected video tile.
- **Audio** – allows the user to hear audio (if present) for only the selected video tile. If all video tiles are selected, no audio will play.
- **Select All Videos** – allows the user to select all video tiles. Once all video tiles are selected (white outline around the video tiles), the Playback Controls will affect all video tiles and not just a single one. However, each clip will begin at its own start time and end at its own end time. This holds true for the snapshot and print capability as well. The timeline will not appear when multiple video clips are selected.

- **Time/Date Stamp** – on playback, each video will have a time/date stamp on it for evidentiary purposes.

Double-click on any video tile to go full screen or use the maximize button in the Tool Bar.

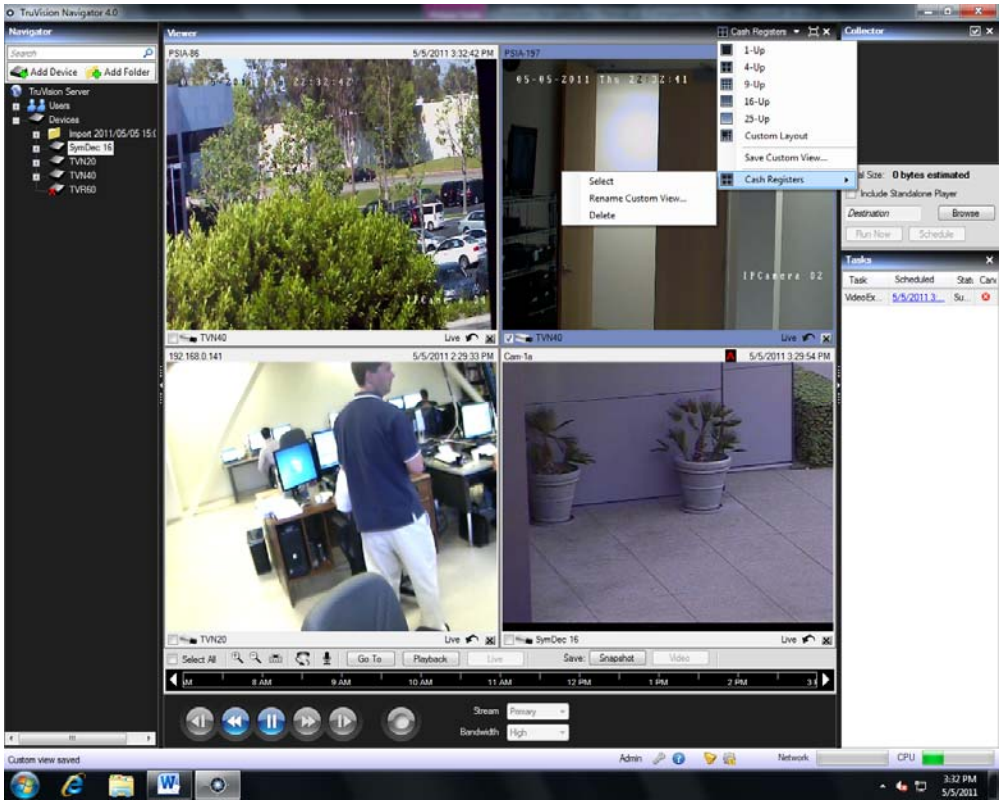
Double-click to go back again to the normal state.

When in Full Screen, right-click to hide/show the Playback Controls to expose only the video tiles and nothing else.

Views

The TruVision Navigator's Viewer panel allows you to manage cameras and camera views in different ways, as outlined below:

Figure 63: Viewer Panel



- Multi-site - The multi-site feature allows you to view video from multiple cameras from different devices simultaneously in the Viewer. TruVision Navigator can render Wavelet, Wavejet, MJPEG, MPEG4, and H.264 compression streams simultaneously, which allows you to mix and match the cameras from your many devices seamlessly.

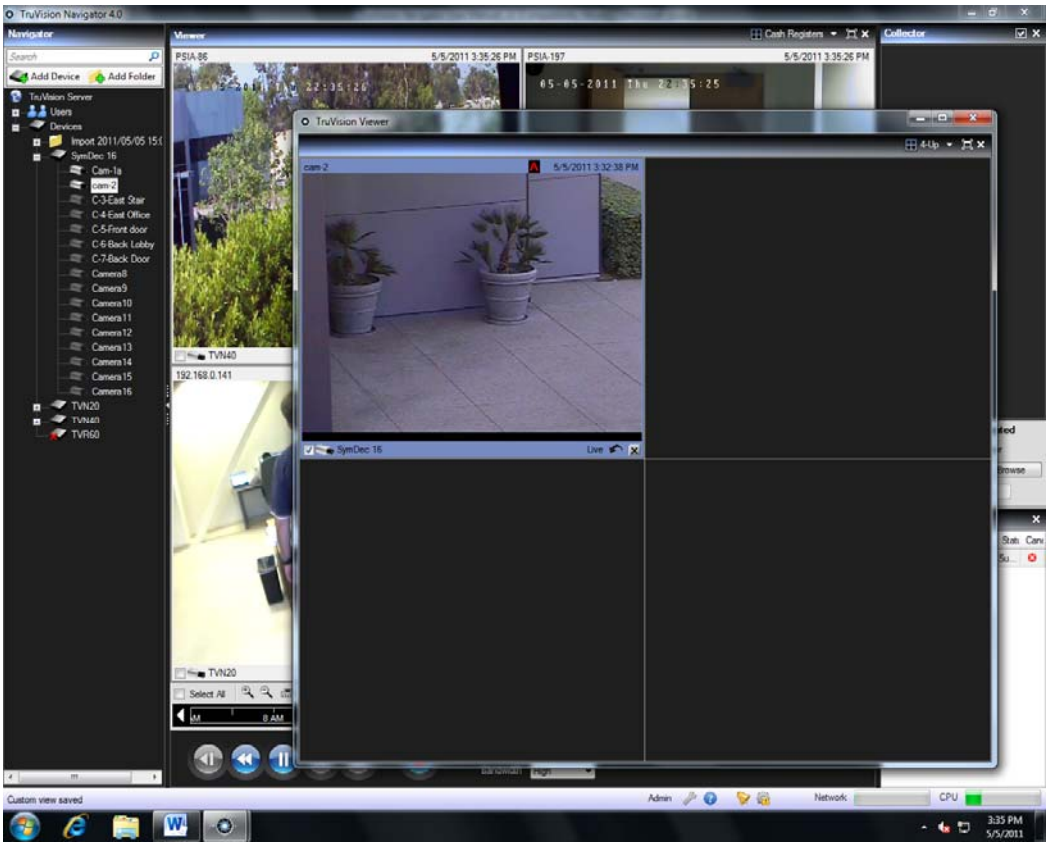
- Standard video tile layouts include 1x1, 2x2, 3x3, 4x4, and 5x5. You can also use the 8-up custom tile layout that features 1 large video tile surrounded by 7 smaller ones. When in a multi-up view (i.e. 4x4), you can double-click in a video tile to bring the video to full screen. Double-click in the video tile again to return to multi-up viewing.
- Maximize Viewer - If you would like to close all panels instantly except for video, use this option. Once all of the video is full screen, move your mouse to the top of the display to see the icons reappear - click the Maximize Viewer icon again to return to the previous layout.
- Close All Video - Select this option to close all video.
- Instant Replay - Click on the Instant Replay button on the video tile to go from Live to Playback by a user-defined and pre-configured period of time (i.e. 5 minutes) for quick viewing of an incident.
- Custom Views - Custom views allow you to define and save multi-site view templates for future use. You can create as many custom views as you want. Custom views are available by selecting the Custom View option in the Viewer header bar dropdown menu. To define a custom view, do the following:
    - Load all the cameras you want to include in the custom view in the Viewer.
    - Organize your cameras by dragging and dropping the video tile's status bar to other video tiles.
    - Click Custom View from the Viewer panel header bar dropdown menu.
    - Select Save Custom View.
    - Enter a title in the *Title* field.
    - Click OK.
    - Close all videos.
    - From the Viewer panel header bar dropdown menu, highlight the Custom View title in the menu and select.
    - The appropriate video tiles will populate per the arranged custom view.
- Detachable Viewers - From a single instance of TruVision Navigator, users have the ability to "detach" Viewers and move them to other (or the same) monitor(s). A maximum of 2 Viewers can be detached for a total of 75-up video tiles (2 detached and 1 core Viewer).
    - Detach a Viewer with a single left click and hold in the Viewer Header Bar and dragging the Viewer out of position (similar to

moving a Windows dialog). Once a Viewer is detached, another Viewer will fill its place behind it in the core user interface.

- Viewers must be expressly detached by the user – TruVision Navigator will not open Viewers automatically
- Detached Viewers have the same controls in the Header Bar of a core Viewer including: Tile Selection Dropdown, Custom Views, Maximize Video, and Close All Video
- Detached Viewers have 1 additional control in the Header Bar which is the Close Viewer icon (not the Close All Video button)

- Detached Viewer Interactions
  - In general, double-clicking on cameras will populate the core Viewer first.
  - If the core Viewer video tiles are full and there is no Detached Viewer open, the application will automatically size up the core Viewer video tiles (i.e. 4up to 9up), or prompt you to close a video tile (i.e. 25up maxed out) before a new one can be opened.
  - If the core Viewer video tiles are full and there is 1 Detached Viewer open, the video tiles will populate top to bottom, left to right as normal on the single detached Viewer, sizing up as appropriate and prompting you when full
  - If the core Viewer video tiles are full and there are 2 Detached Viewers, the video tiles populate top to bottom, left to right as normal on the first detached Viewer, sizing up as appropriate, and then populating the video tiles top to bottom, left to right as normal on the second detached Viewer, sizing up as appropriate and prompting when full
  - Drag n’ Drop devices or cameras - drag n’ drop a device or camera to any video tile in any Viewer – core or detached

Figure 64: A Detachable Viewer



PTZ control

TruVision Navigator has the ability to control PTZ cameras, go to, set, and name presets and go to and record tours. The tours functionality is only available for certain device types. See the device-specific chapters for the support for this feature.

First, the camera must be marked as a PTZ camera in its configuration as the camera does not identify itself as such to the device. To mark a camera as a PTZ:

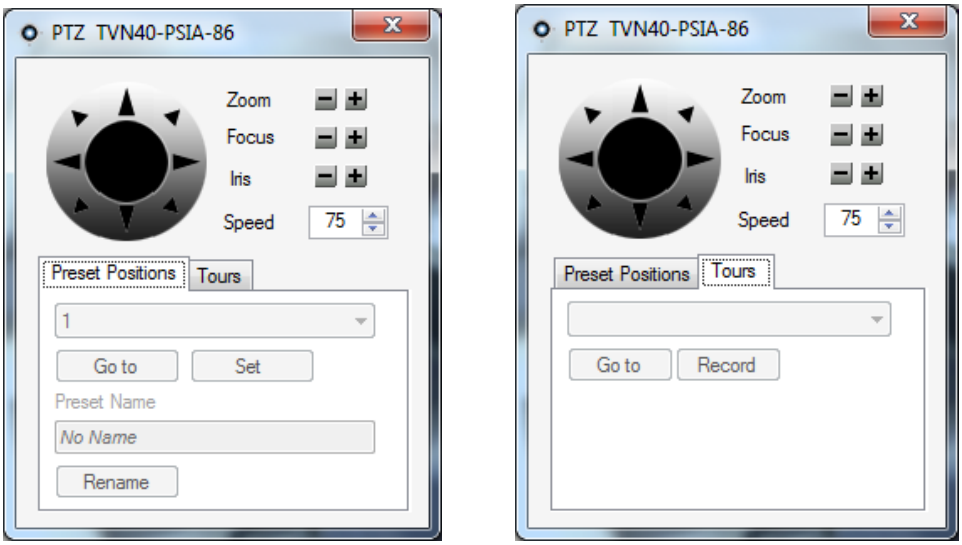
- Right-click on the camera and select Configure Camera.
- From the camera configuration dialog, check the PTZ Enabled checkbox, select a PTZ protocol, assign an address, and click Ok.
- Ensure the camera also has the appropriate address and protocol settings.
- Upon completion, you'll notice that the camera's icon in the Navigator changes from a fixed camera icon to a PTZ camera icon.

Once you have marked a camera as PTZ, you can now control it using the PTZ Controls or with mouse commands in the video tile.

To control a PTZ camera using the PTZ Controls:

- Load the PTZ Camera into the Viewer and select it.
- Click the PTZ icon on the Viewer toolbar and the PTZ dialog will open.
- Adjust the PTZ dialog to optimize video viewing.

Figure 65: PTZ controls



Use the controls to move the PTZ Cameras as well as zoom, focus, and iris. Set the speed to the appropriate level for your network and operations. You can also go to, name, and set presets and return cameras to tour (on certain devices). See the device-specific chapters for applicable functionality.

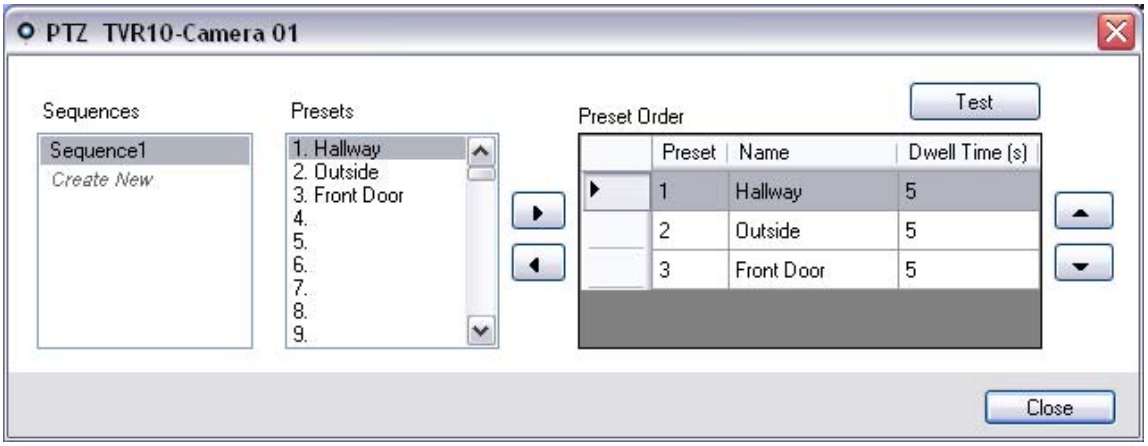
Note: PTZ control responsiveness will vary depending upon the frame rate, resolution, and quality of the video stream. D1/ 30FPS/Quality 9 will afford you the most responsive PTZ control over the network. Weigh PTZ control responsiveness with your storage requirements to find the best fit. You can also balance the PTZ speed setting with the stream configuration to find the best fit.

To control a PTZ camera using mouse commands within the video tile:

- Load the PTZ Camera into the Viewer and select it.
- Place your cursor in the center of the Viewing tile.
- Left-click and hold the mouse, then drag to the right-left-up-or down. Notice the further from center the cursor gets, the faster the camera will move.
- Right-click and hold the mouse, then drag up or down to zoom in and out with the camera.

Users also have the ability to link a PTZ camera's presets into a sequence based upon a specific order and dwell time. These sequences can be managed and tested by right-clicking on the PTZ camera in the Navigator and selecting Preset Sequences, Manage Sequences.

Figure 66: PTZ preset window

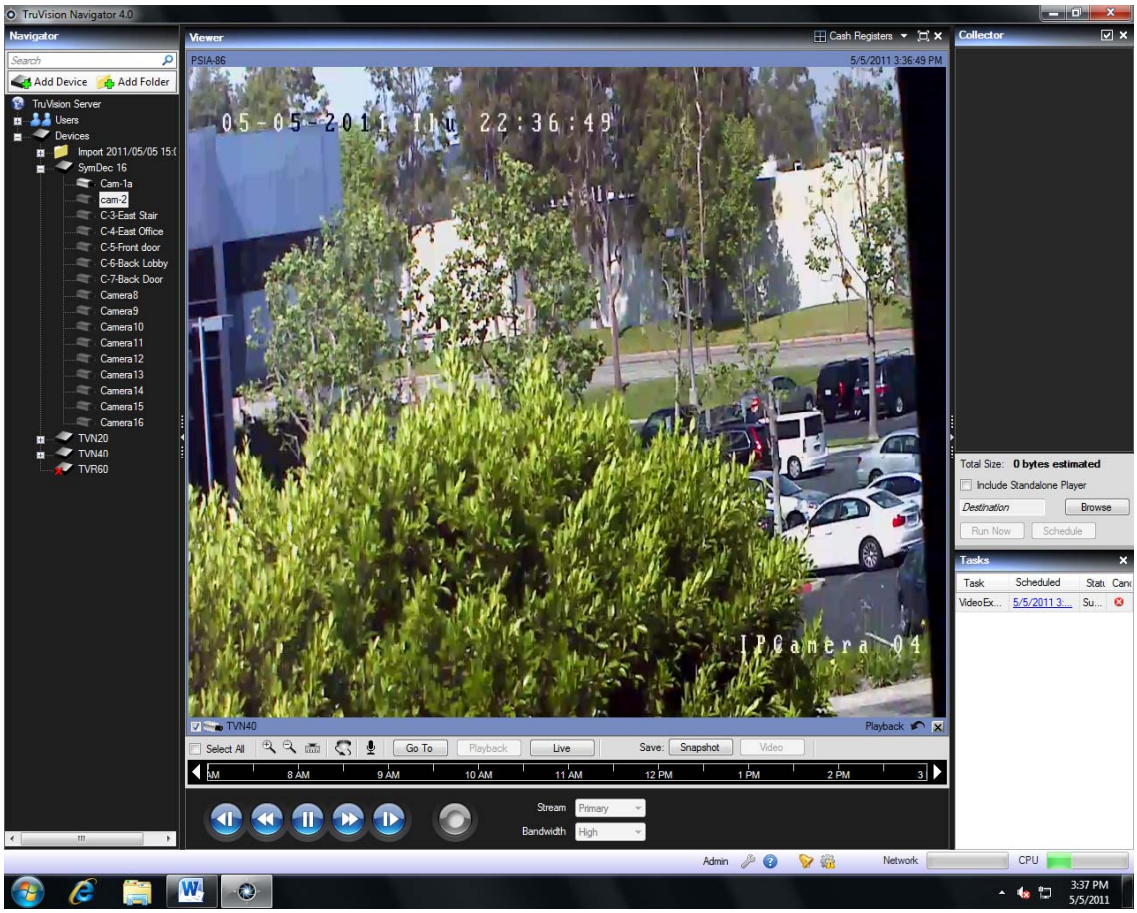


These sequences can be activated by right-clicking on the PTZ camera in the Navigator and selecting Preset Sequences, and then the name of the sequence that was created.

Digital Zoom

Digital zoom is a method of decreasing the apparent angle of view of an image. It is accomplished by cropping an image down to a centered area with the same aspect ratio as the original. TruVision Navigator has the ability to perform digital zoom with cameras, assuming the recording device offers that capability. See the device-specific chapters for the support for this feature.

Figure 67: Digital Zoom



To perform digital zoom:

- Load the video into the Viewer.
- Put the video in Playback mode for the time/date of the incident.

Using the PTZ Controls:

- Click the PTZ icon on the Viewer toolbar and the PTZ dialog will open.
- Use this dialog to perform digital zoom.

Using mouse commands within the video tile:

- Place your cursor in the center of the Viewing tile.
- Left-click and hold the mouse, then drag to the right-left-up-or down.
- Right-click and hold the mouse, then drag up or down to zoom in and out with the camera.

Configure a device

TruVision Navigator allows you to configure devices in several ways:

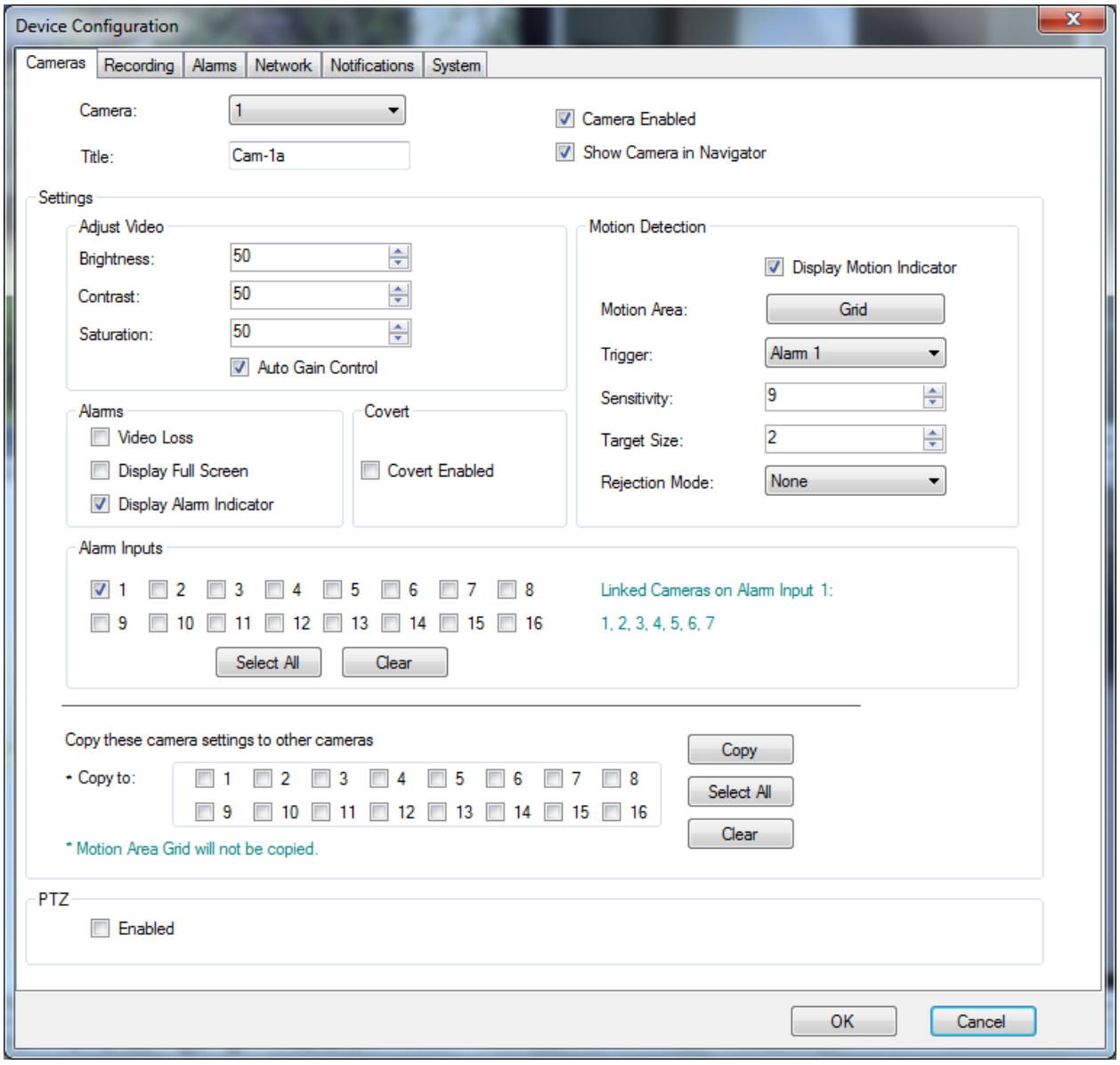
- Configure a single device
- Configure devices in bulk
- Save a configuration file for a device and push it to other like-devices at a later time

Some devices cannot be configured remotely via TruVision Navigator. See the device-specific chapters for more detail on this functionality.

To configure a single device:

- Right-click on the device in the Navigator and select Configure Device.
- The Device Configuration dialog will display.
- Navigate through the settings, make changes as appropriate, and either click Ok or Cancel. Ok will save the settings to the device and Cancel will abort the configurations you made.

Figure 68: Device Configuration Dialog

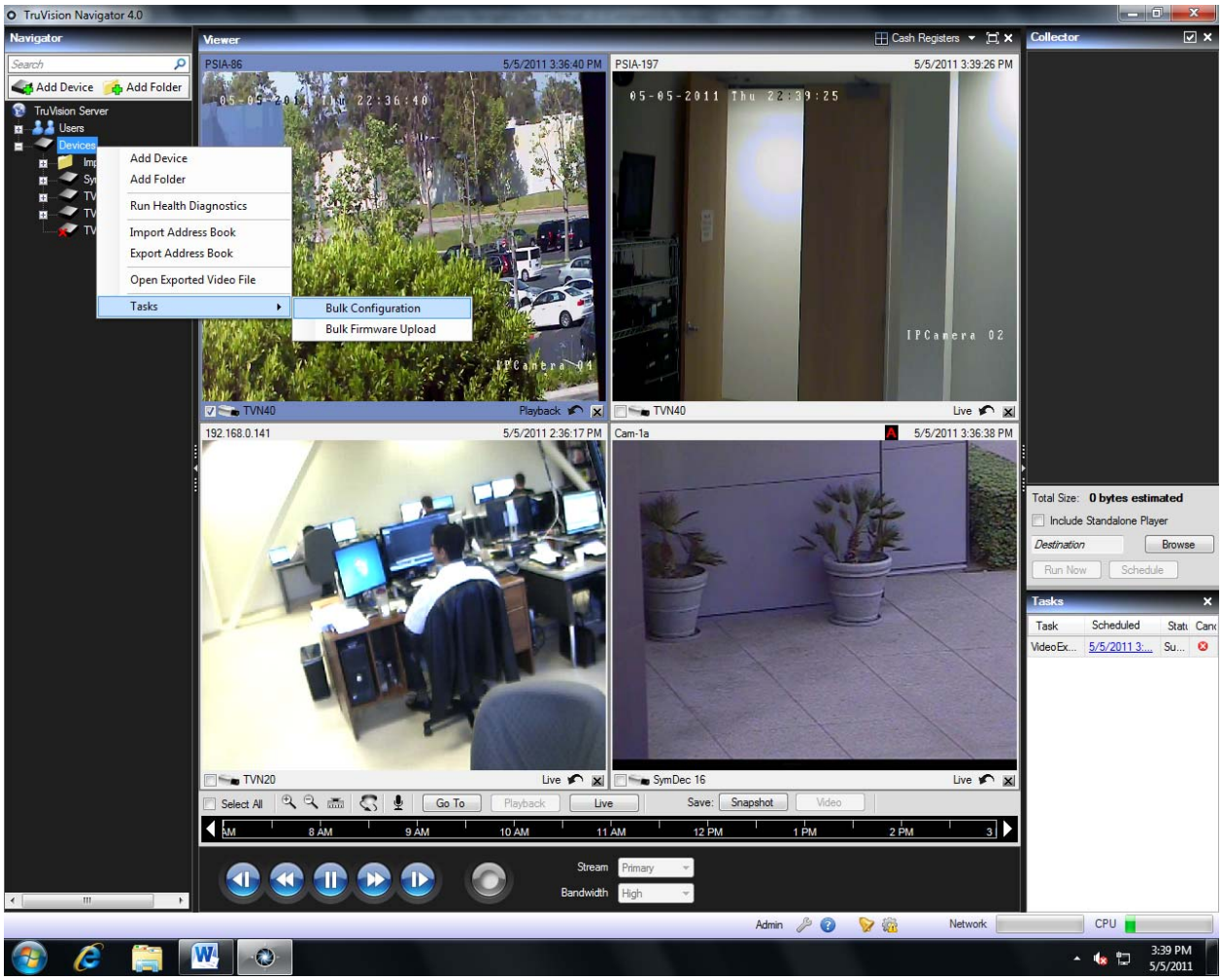


The bulk device configuration feature offers you an easy way to remotely update and maintain the configurations of devices in the system. This powerful capability allows you to push a single configuration parameter across all like-devices or as many configuration parameters as necessary across all like-devices. As with a single device configuration, this action can be performed immediately or on a schedule.

To configure like-devices in bulk:

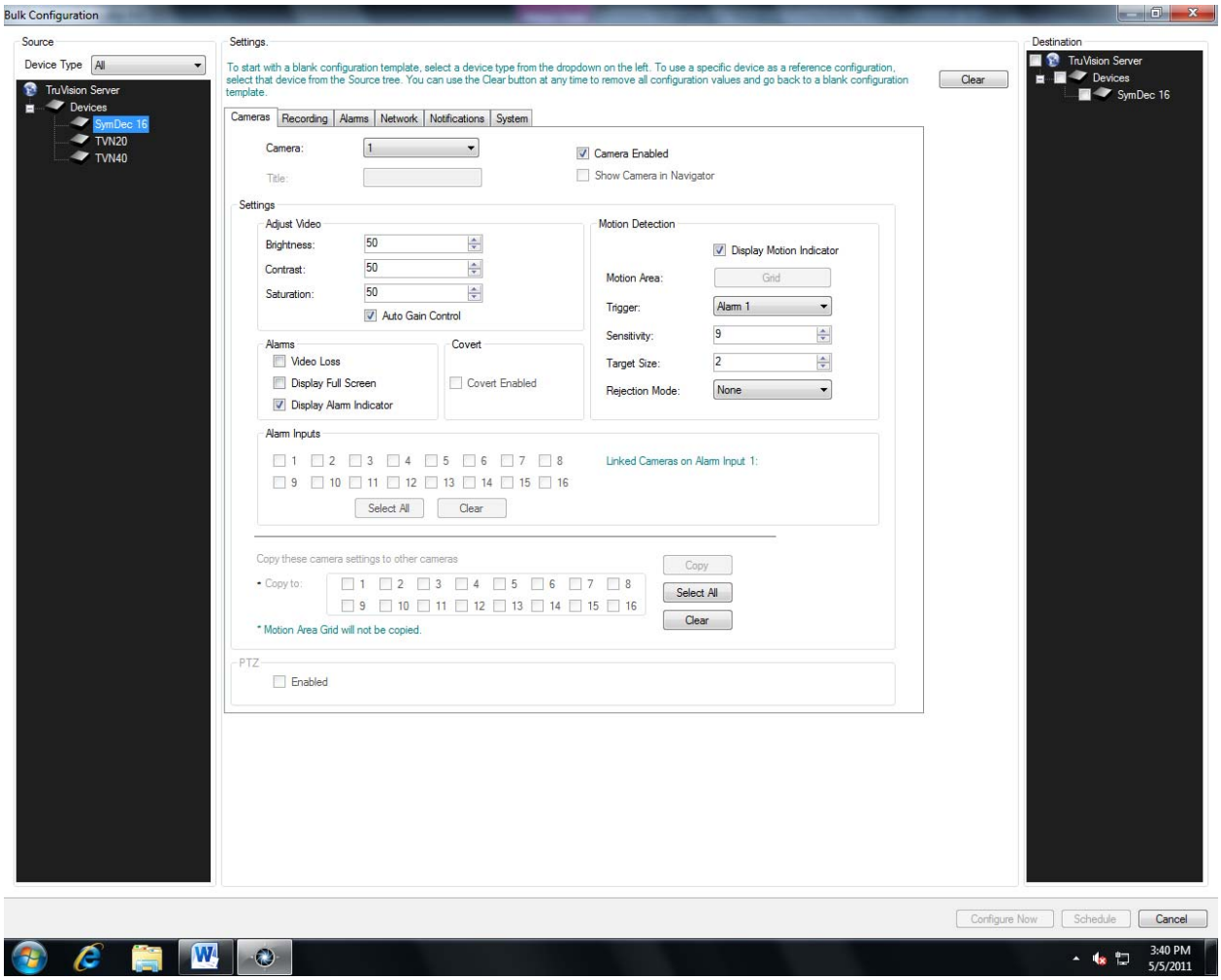
- Right-click on the Devices node in the Navigator and select Tasks, Bulk Configuration.

Figure 69: Bulk Configuration Access



- The Bulk Configuration dialog will appear.

Figure 70: Bulk Configuration



There are 3 sections in the Bulk Configuration dialog: Source, Settings, and Destination.

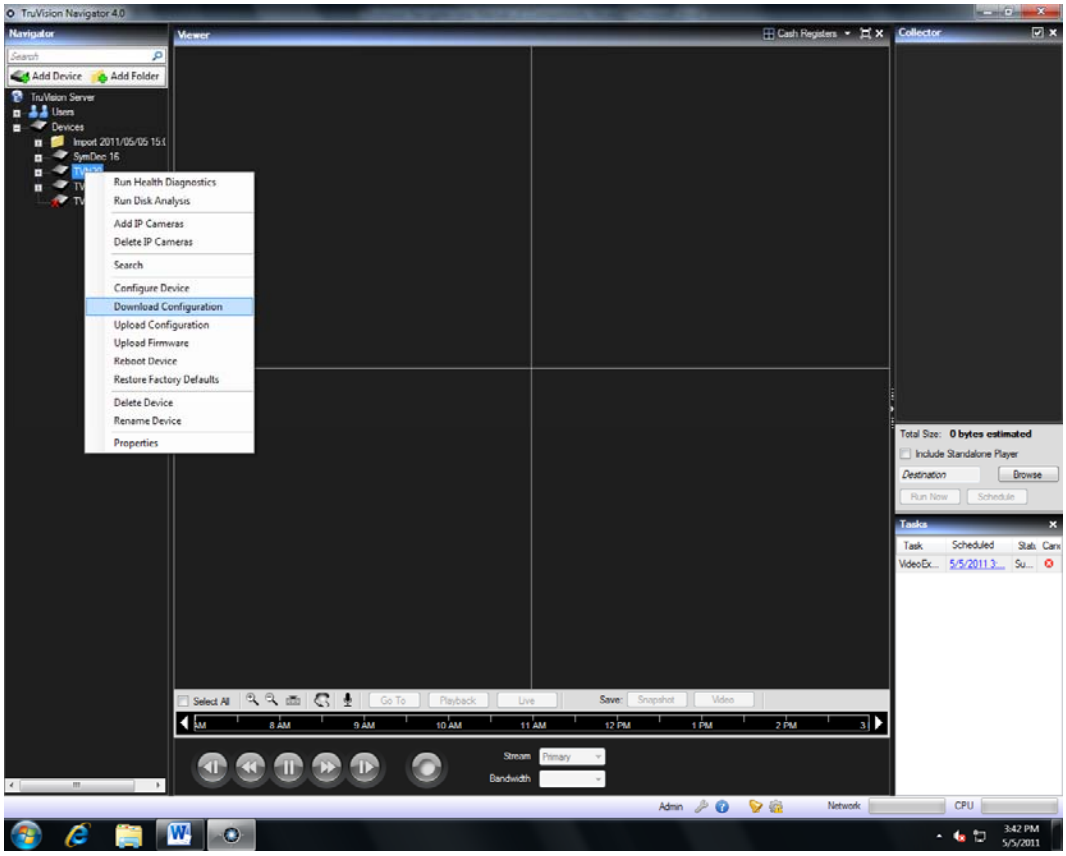
- **Source** - this is where you select the device type of the devices you want to configure. As you select different device types, the destination list will toggle in real-time to show the applicable like-devices in the system.
- **Settings** - initially, a generic configuration template will appear for that device type selected in the source. This generic template will show all of the necessary configurations for that device type but won't have any values populated in the fields. This allows users to simply pick and choose the exact configuration fields they want to update and push only those to the destination devices.
- **Destination** - if there is a source device that mirrors the exact configuration you want to copy, you can select that device in the source and it will load in settings. You can push this entire configuration to destination devices or change some configurations and then push it all to destination devices.

Upon initiation (now or on a schedule), a task will be created in the Tasks panel for each device that will have configurations made. Monitor progress of the configurations there.

Finally, TruVision Navigator offers the ability to download a configuration file from a device and upload it later to the same or other like-devices. To do this:

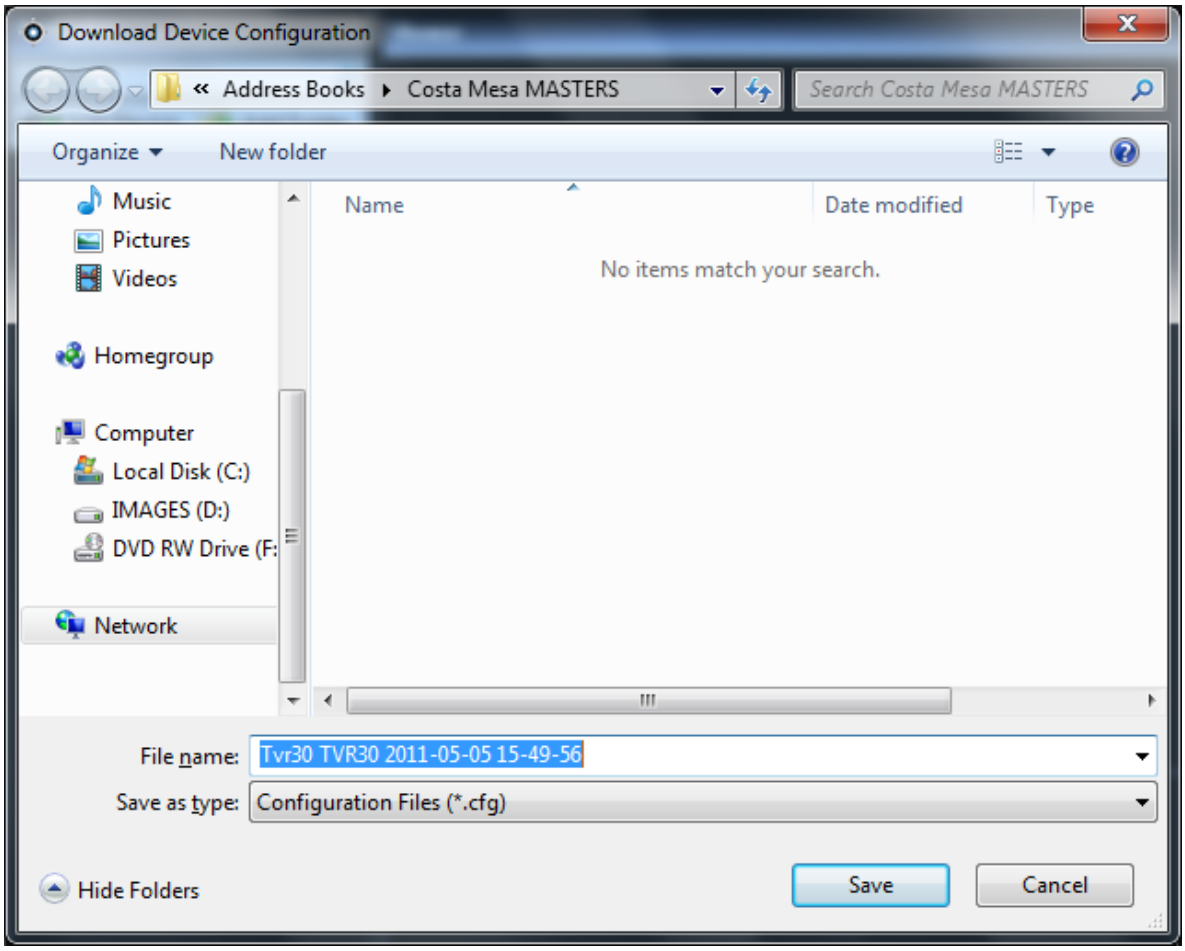
- Right-click on the specific device in the Navigator and select Download Configuration.

Figure 71: Download Configuration



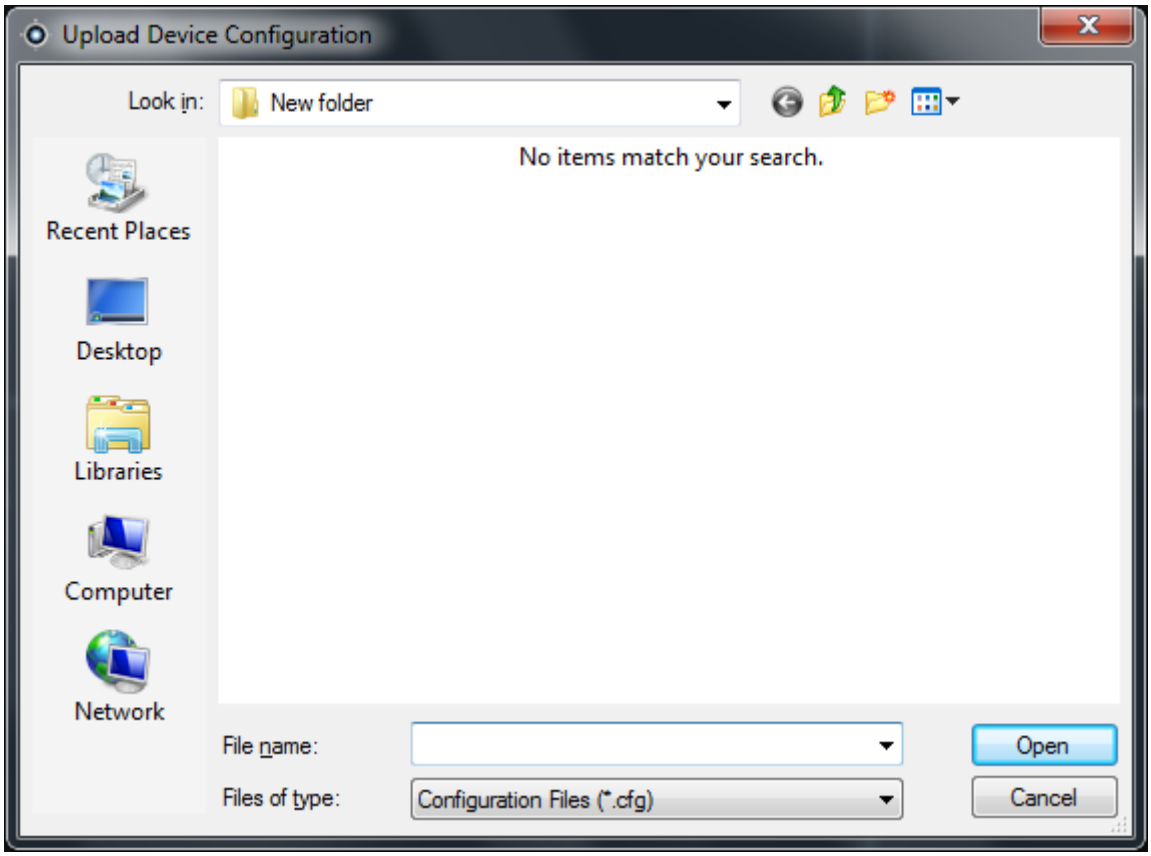
- The Download Device Configuration dialog will display and allow you to save the configuration file for that device to a location.

Figure 72: Download Device Configuration



- When you are ready, you can upload that device configuration to the same or like-device by right-clicking on the device in the Navigator and selecting Upload Configuration
- The Upload Device Configuration will display where you can browse for the configuration file and upload it to the device.

Figure 73: Upload Device Configuration

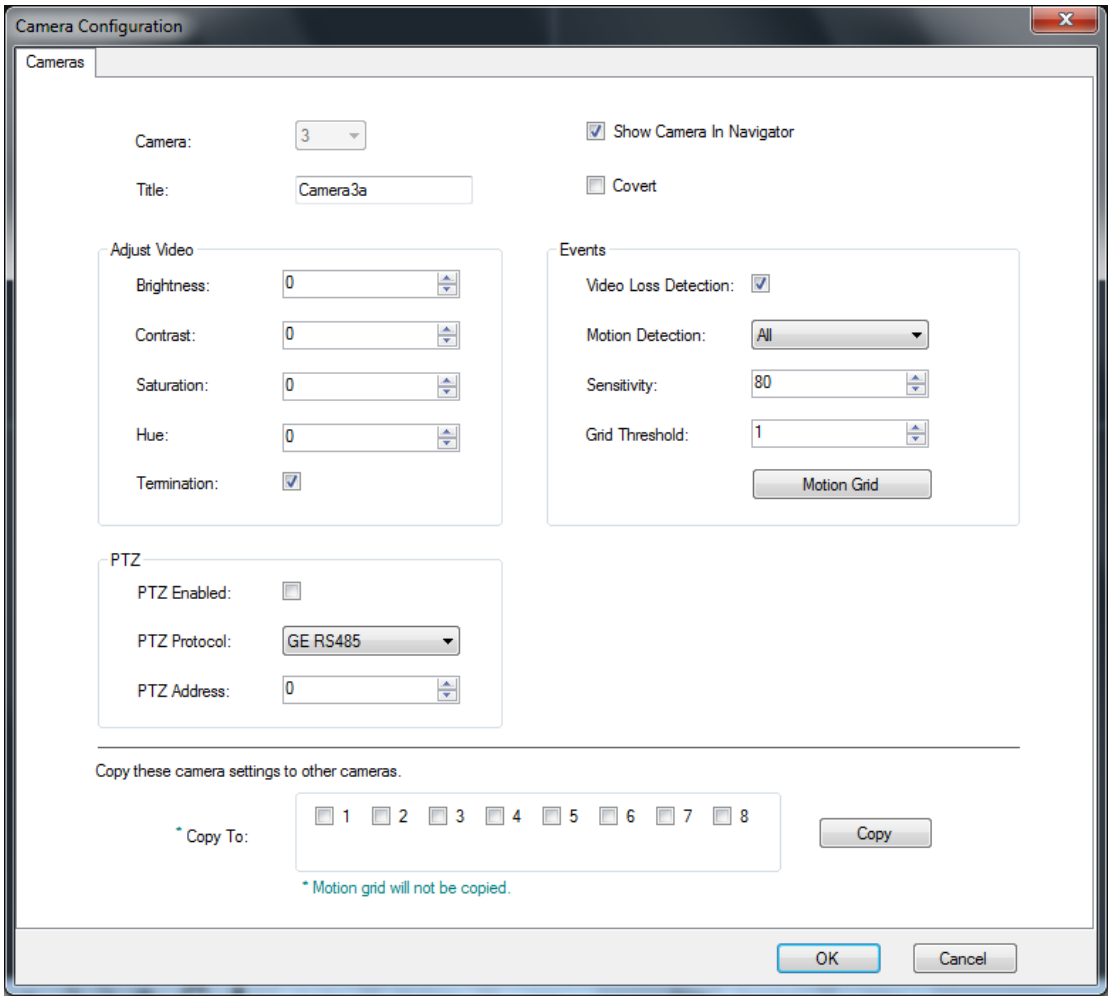


Configure a single camera

The steps required to modify a camera's configuration is similar to that of configuring a device. To change a specific camera's settings, do the following:

- Right-click on a camera in the Navigator and select Configure Camera.
- The Cameras Configuration dialog will open.

Figure 74: Camera configuration



- Navigate through the settings, make changes as appropriate, and either click Ok or Cancel. Ok will save the settings to the device and Cancel will abort the configurations you made.

Note: The trusted source for camera titles is the device itself. When adding a device for the first time, TruVision Navigator will not pull the device's configuration information at the time of connection. Therefore, the cameras under the device in the Navigator panel may display generic camera titles (Camera 1, Camera 2, Camera 3, etc.). Camera titles are updated in TruVision Navigator after you pull the device configuration for the first time. Afterwards, any changes to camera titles through TruVision Navigator will update both the Navigator and the device.

Single and Bi-directional Audio

Single-directional audio can be heard from devices in TruVision Navigator for both Live and Playback streams assuming several setup steps are completed.

At a high-level:

- The device must support audio (see the device-specific chapters for more detail on this functionality).
- The device needs to be configured for audio.
- A microphone needs to be added to the device to capture that audio.
- At the TruVision Navigator Client PC, speakers need to be attached and the volume control needs to be turned up.
- Load and select the video tiles in the Viewer to hear the audio.
- If multiple video tiles are selected, all of the audio will play.

Bi-directional audio can be used with devices in TruVision Navigator while viewing Live video assuming several setup steps are completed.

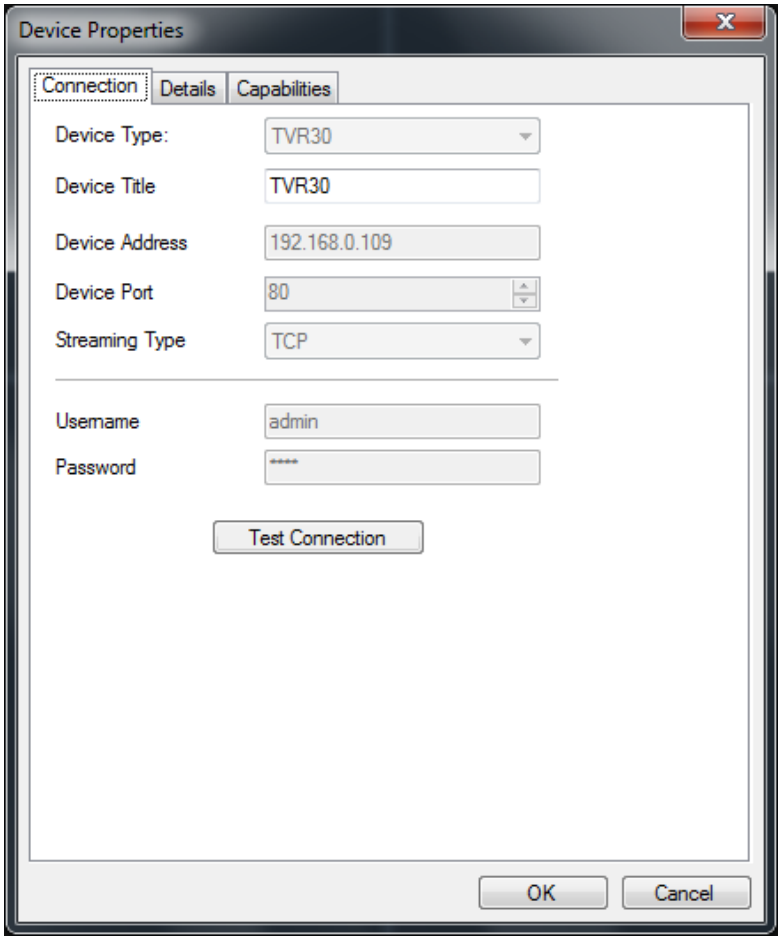
At a high-level:

- The device must support bi-directional audio (see the device-specific chapters for more detail on this functionality).
- The device needs to be configured for bi-directional audio and audio in / out needs to be enabled.
- At the device, speakers and microphones must be in place.
- At the TruVision Navigator Client PC, a microphone and speaker must be installed.
- Load video into the Viewer to monitor the live video.
- When you are ready to speak, select the video tile and single left-click and hold the bi-directional audio button on the Viewer toolbar.
- Speak into the microphone at the TruVision Navigator Client PC.
- When finished speaking, let go of the mouse to disable the bi-directional audio button.
- This process supports multi-selection of video tiles.

Device properties

Device properties consist of connection, details, and capability information. To review device properties, right-click on the device and select Properties.

Figure 75: Device Properties Dialog



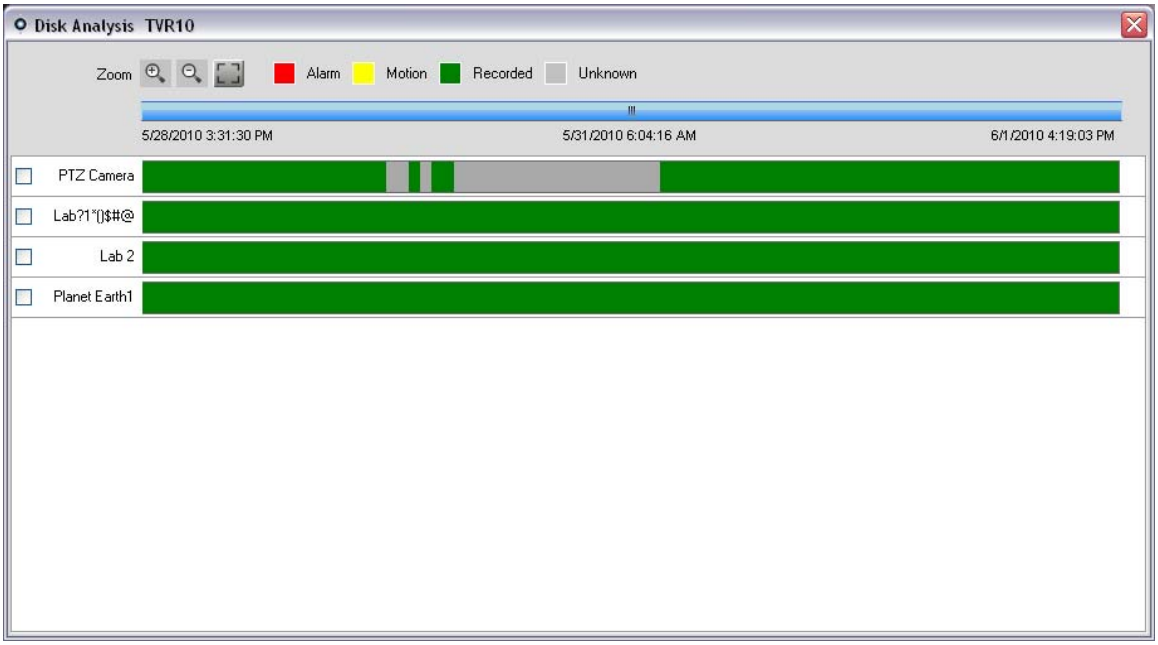
- The Connection tab shows all of the information previously entered when adding the device. Make changes as appropriate and click OK to save changes.
- The Details tab provides an area for you to enter any data you would like around a device to help facilitate management of the system. If the device was imported and data existed in the original WaveReader or SymNav address book, this data will appear in these fields. If the device was added manually, the fields will remain blank until you add data and click OK.
- The Capabilities tab shows you exactly what features the device supports.

Device disk analysis

TruVision Navigator features the ability to run a disk analysis on a device in order to get a broader sense of the different types of video data recorded to disk. This video data can include alarms, events, video loss, motion, and more.

- Right-click on the device in the Navigator and select Run Disk Analysis for the disk analysis dialog to appear.

Figure 76: Disk Analysis Dialog



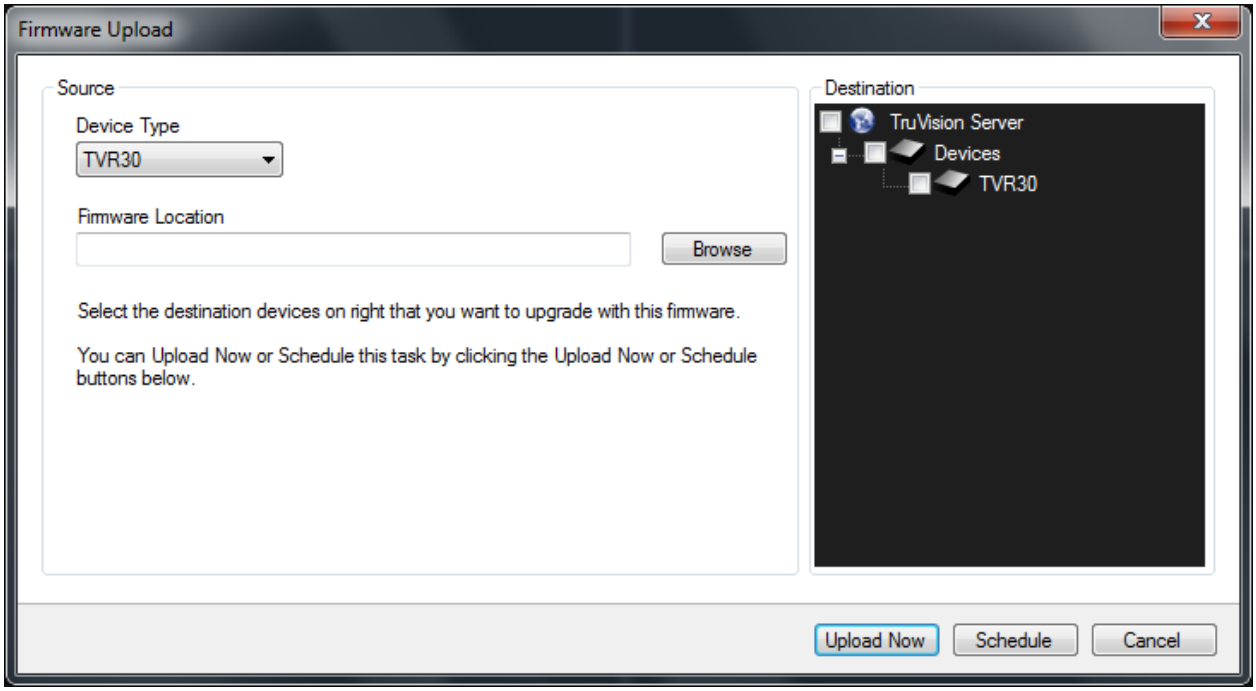
- From this dialog, you can zoom in and out on the timeline to view different levels of time granularity for the video (use the <Ctrl> key in conjunction with your mouse scroll wheel to zoom in and out more easily). The legend outlines the types of video by color (i.e. alarm is red).
- For periods marked as “Untagged”, the device may/may not have recorded video available. It was just not tagged with a specific type per its device configuration parameters.
- Double-click on colored areas in disk analysis, and the video will begin to play in the Viewer. By multi-selecting the checkboxes to the left of each camera name, you can achieve synchronous playback across those selected cameras.
- Once video is playing in the Viewer, you can manage and export it as normal. See the device-specific chapters for more detail on what types of video tagging are available per device.

Firmware upload

TruVision Navigator offers the ability to upload firmware to devices remotely. You can do this per device or in bulk-fashion across many like-devices.

- To upload firmware to device(s), either right-click on the device in the Navigator and select Upload Firmware or right-click on the Devices node in the Navigator and select Bulk Firmware Upload. The Firmware Upload dialog will appear.

Figure 77: Firmware Upload Dialog



- Select your source device type, browse for the applicable firmware, and select the destination device(s) for the firmware upload.
- Remember, TruVision Navigator does not do a file format check on the firmware file, so ensure it is the proper file for that device type. In addition, the firmware file must reside on the local machine. It cannot be accessed across network paths.
- Click on the Upload Now button or schedule the firmware upload for a future date/time via the Schedule button.
- Upon initiation of the upload, a task will be created for each individual device firmware upload in the Tasks panel. The status on each of those uploads can be tracked from there. The Status column will include values of Pending, In Progress, and Success or Failed. Place your mouse pointer over the status of each task to obtain more detailed information about progress. You can also watch the status of the firmware upgrade via the device's On-Screen-Display. Firmware uploads may take several minutes to complete.
- For any scheduled task that will take place in the future, you must ensure that the machine where the task was created is powered up and the Local Scheduling Service is running on that machine. The TruVision Navigator

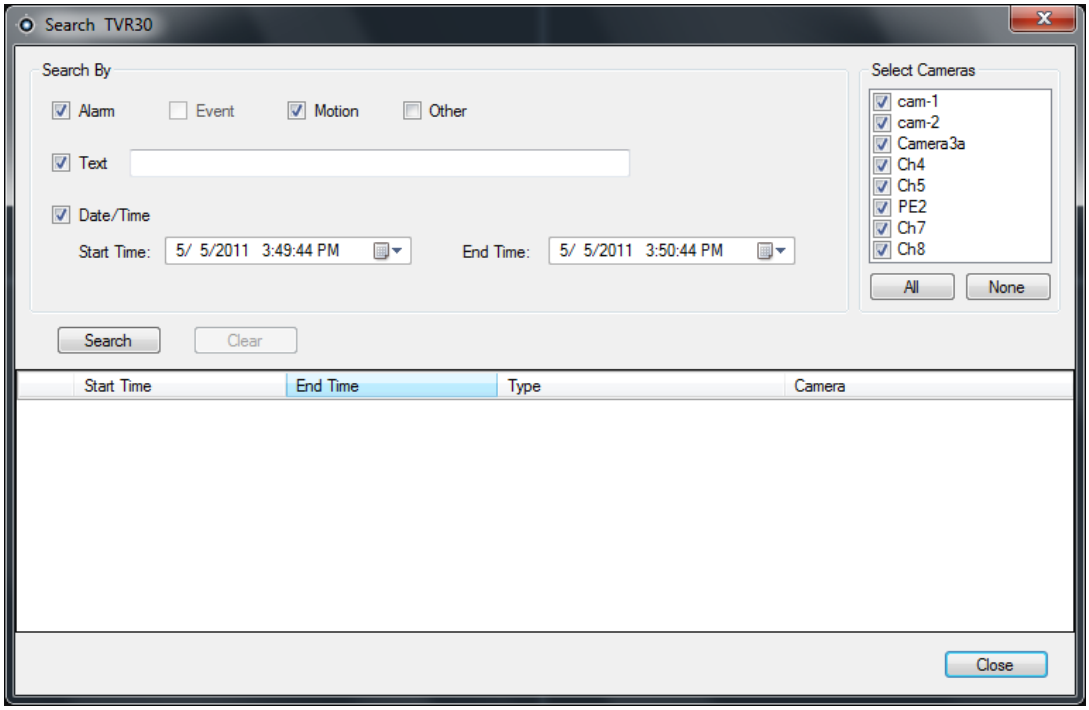
application itself can be closed but the machine and Local Scheduling Service must be running for the task to be initiated and completed.

Device or camera search

TruVision Navigator allows you to search supporting devices and cameras for alarms, events, motion, smart search, and point-of-sale text-related video.

- To begin a search, right-click on the device or camera and select Search. The Search dialog will display.

Figure 78: Search Dialog



- For those searches, the device must first be configured to tag the camera's video based upon those parameters (which must be available in the device). For instance, to be able to search a camera for motion in TruVision Navigator, the motion grid must be setup for that camera in the device and tagged for motion. This device setup can be done remotely via the configuration capability within TruVision Navigator or from the device itself.
- To search for video tagged with text, enter the text string you want to search for and click Search. Remember that for text searches, the device can be integrated with a ProBridge. The ProBridge acts as a bridge between the recording device and the Point-of-Sale (POS) device (i.e. a cash register or ATM). It essentially feeds the POS text data into the recording device where it is tagged to the applicable video.

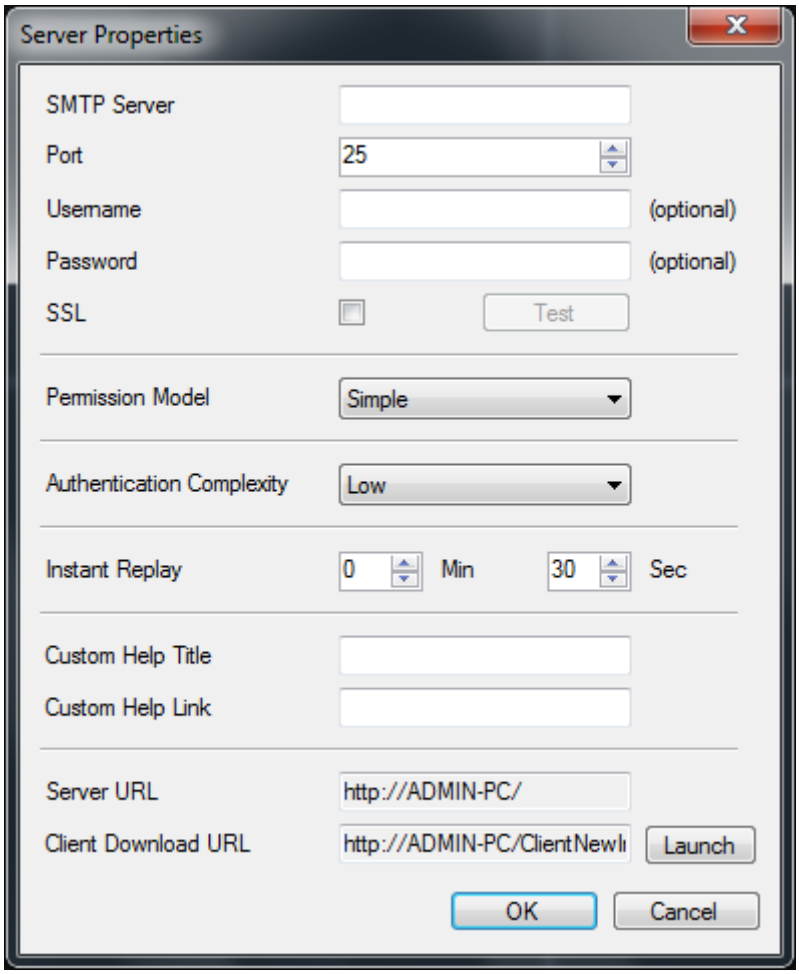
- To perform a camera search, right-click on the camera in the Navigator and select Search. The Search dialog will appear. From the search dialog, you can specify the video type and time/date range, and upon clicking Search, the results will appear in the table. Click the hyperlinked start times to review the video in the Viewer.
- Different devices support varying levels of camera search. See the device-specific chapters for more detail on what types of video data are available per device.

TruVision Navigator Server Setup

For both the Standalone and Multi-client installation models, you have the ability to configure the TruVision Navigator Server for specific features.

- To configure the TruVision Navigator Server, right-click on TruVision Navigator Server in the Navigator and select Properties. The Server Properties dialog will appear.

Figure 79: Server Properties Dialog



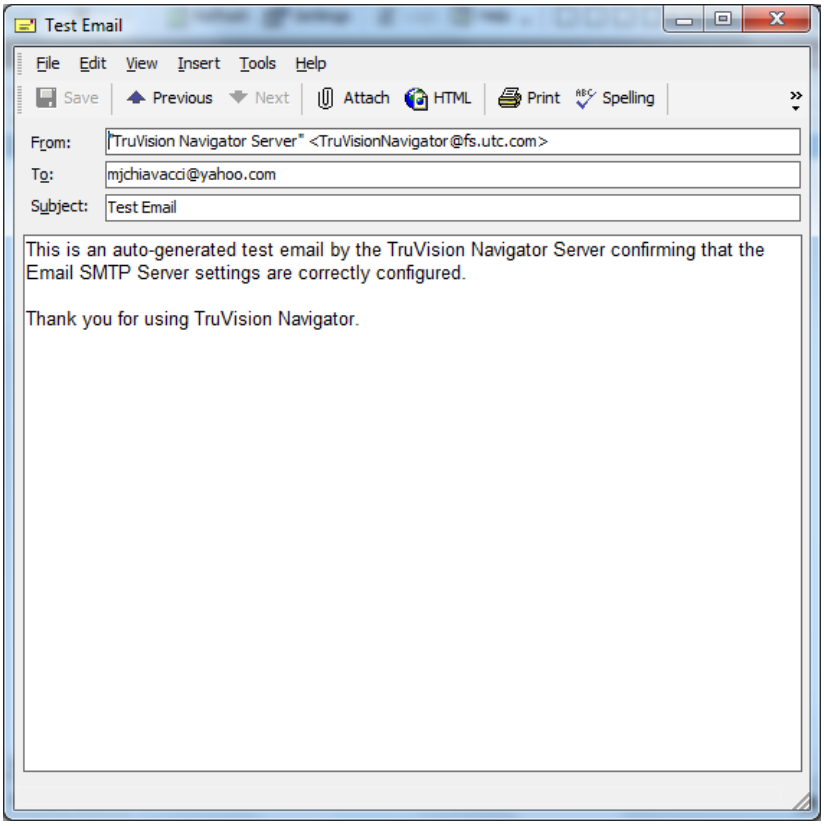
SMTP Setup

Simple Mail Transfer Protocol (SMTP) is a de facto standard for email transmissions across the Internet. TruVision Navigator Server can be configured to use an SMTP server to send automated email messages (with Client Download URL, Username, Password) to users when they are created in TruVision Navigator and when their login credentials (Username, Password) need to be reset in the system by an Administrator. If SMTP is not setup, this information will need to be delivered via an alternative method (i.e. phone or personal email).

- Enter the SMTP Server IP Address, the port, any username/password credentials that may be mandated by the SMTP server you are using, and SSL, if necessary. Test this setup by clicking Test and entering the email address of where you want the test message sent. Check the application status bar for feedback on the test. As well, check your email to ensure there is a test message from the TruVision Navigator Server confirming proper setup of the SMTP server.

- You should see an email like the one below. After several minutes, if you still have not received the message, check your Junk Mail folder to see if the email was classified and stored there.

Figure 80: SMTP Test Email



Permission Model

TruVision Navigator has two permission models – Simple or Advanced. The default for a new installation is the Simple model.

- Simple model - Administrators only have the ability to create, edit, and delete users and their corresponding permissions.
- Advanced model - Administrators have the ability to create, edit, and delete both users AND groups. Groups allow you to scale user permissions in your system across many users. For instance, many users can be placed into a single group, and that single group can be assigned permissions against the folders/ devices in the system. Without groups, the Administrator would have to permission each user against those same devices.
- To change your permission model from Simple to Advanced, select it from the Permission Model drop-down and click OK. Groups should now appear as a node in the Navigator panel. The table below outlines the

actual permissions that can be granted to users or groups within TruVision Navigator, the user interface impact of that permission, and the dependencies of specific permissions.

Table 7: Permission Matrix

Permission	User Interface Impact	Dependent Permissions
Configure Server	Enable/disable right-click options on TruVision Navigator Server node (i.e. Properties and Database Backup and Restore)	
Manage User Permissions	Show/Hide Users and/or Groups nodes in Navigator	
Manage Device Folders	Show/Hide Add Folder button and context menus in Navigator	
	Show/Hide Folder (folder may also be visible due to other permissions or parent/child permissions)	
	Show/Hide Address Book Import context menu for Devices node.	
Manage Devices	Show/Hide Add Device button and context menus (rename and delete) in Navigator	
	Show/Hide Folder (folder may also be visible due to other permissions or parent/child permissions)	
	Show/Hide Device (device may also be visible due to other permissions or parent/child permissions)	
	Show/Hide Camera (camera may also be visible due to other permissions)	
	Show/Hide Tasks (Firmware Upload and Configuration) context menus for Devices node.	
	Enable/Disable Device Properties (Connection, Details, Capabilities) dialog on device	
	Show/Hide Firmware Upload context menu for device	
	Show/Hide Tasks Panel (panel may also be visible due to other permissions)	
View Device Diagnostics	Show/Hide Run Health Diagnostics in Device node and specific device context menus in Navigator.	

	Show/Hide Folder (folder may also be visible due to other permissions or child permissions)	
	Show/Hide Device (device may also be visible due to other permissions or child permissions)	
View Notifications	Show/Hide Folder (folder may also be visible due to other permissions or child permissions)	
	Show/Hide Device (device may also be visible due to other permissions or child permissions)	
	Enable/Disable Notifier icon in application status bar.	
	Show/Hide Device Notification in Notifier dialog	
	Show/Hide Camera Notification in Notifier dialog for permissioned device	
Acknowledge Notifications	Show/Hide Acknowledge All button in Notifier dialog	
Watch Live Video	Show/Hide Folder (folder may also be visible due to other permissions or child permissions).	
	Show/Hide Device (device may also be visible due to other permissions or child permissions).	
	Show/Hide Camera (camera may also be visible due to other permissions).	
	Allow/Disallow Open Video from Camera (all methods: double-click and drag-n-drop in Navigator).	
Watch Playback Video	Show/Hide Folder (folder may also be visible due to other permissions or child permissions).	If you have Watch Playback Video, you will automatically receive Watch Live Video.
	Show/Hide Device (device may also be visible due to other permissions or child permissions).	
	Show/Hide Camera (camera may also be visible due to other permissions).	
	Enable/Disable Controller Playback controls including Go To, Playback, Live, double-click on timeline)	

	Enable/Disable notifications in Notifier dialog.	
	Show/Hide Device and Camera Search context menus	
Watch Video HBW	Enable/Disable Stream and Bandwidth menus in the Controller.	Requires at least one of the Watch Video permissions (Live or Playback).
Pan Tilt Zoom (PTZ)	Show/Hide PTZ palette control controls.	
	Show/Hide PTZ in-tile mouse controls.	
Export Video	Enable/Disable Local record button in Controller.	Requires both of the Watch Video permissions (Live and Playback).
	Enable/Disable Snapshot and Video buttons in the Controller.	
	Show/Hide Collector Panel.	
	Show/Hide Tasks Panel (panel may also be visible due to other permissions).	
View Disk Analysis	Show/Hide Disk Analysis context menu for device.	
	Show/Hide camera row in Disk Analysis dialog.	Requires both of the Watch Video permissions (Live and Playback).

Authentication Complexity

TruVision Navigator has three Authentication Complexity standards - Low, Medium, and High. The default for a new installation is Low.

- To change the Authentication Complexity, select a choice from the drop-down and click OK.
- All new users to the application will be required to meet the new Authentication Complexity standard. However, existing users of the application will not be prompted to change their credentials to meet the new standard once it is changed. Therefore, the Administrator must reset each of the existing user accounts for the standard to take effect. This

reset will only affect the password for that user – not the username. It is recommended to set the Authentication Complexity early before any users are created in the system to avoid having to do resets.

The table below outlines the components of each of these standards.

Table 8: Authentication Complexity

Authentication Complexity	Maximum login failure attempts	Username Complexity	Password Complexity	Password Reuse	Password Expiration
Low	n/a	At least 6 characters	At least 6 characters	n/a	n/a
Medium	3	At least 6 characters	At least 8 alphanumeric characters	n/a	n/a
High	3	At least 12 characters	At least 8 characters with at least: 1 Upper- case letter 1 lower-case letter 1 numeric 1 special character (~, !, @, #, $, %, ^, &, +, =)	Cannot use the last password	User must change password every 60 days

TruVision Navigator supports Instant Replay from the video tile itself via the Instant Replay icon. This affords an operator the ability, with one mouse click, to rewind selected video by a user-defined, pre-configured amount of time (99 minutes and 59 seconds maximum).To set your Instant Replay time, enter the minutes and seconds and click OK.

- Load video into the Viewer and mouse over the Instant Replay icon (arrow to the left of the close video icon) on the far right of the video tile status bar. Notice your pre-configured amount of time in the Tool Tip. Click on the icon to go back that amount of time with the selected video. See the specific device chapters for limitations on instant replay per device.

Custom Help

TruVision Navigator has Custom Help access that allows individual organizations to provide their own additional content to facilitate adoption of the software. This content is completely user-defined. TruVision Navigator simply provides a pathway for users to access it.

- To add a Custom Help link, enter the Custom Help title of the content that you want to expose to users. Next, enter the Custom Help link, which is the actual path to the content (users will not see what you enter in this field). Click OK.
- Open the Help dialog (Question Mark icon) from the application status bar and notice the Custom Help title there. Click on the link to access the content.

Server URL

For Multi-client installations (Client/Server), the Server URL is the network location of the TruVision Navigator Server. This is the URL that TruVision Navigator Clients use to communicate with the TruVision Navigator Server.

For Standalone installations (Direct Database Connection), this field will be disabled, as no other networked TruVision Navigator Clients can connect to this instance of the TruVision Navigator Server.

Client Download URL

For Multi-client installations (Client/Server), the Client Download URL is the network location of the TruVision Navigator Client software package. Administrators can deliver this URL to new users in order to download the Client software remotely from the TruVision Navigator Server. If SMTP (see below) is in use, this is done automatically for the Administrator during user setup.

For Standalone installations (Direct Database Connection), this field will be disabled, as no other networked TruVision Navigator clients can connect to this instance of the TruVision Navigator Server.

User Management & Client Software Delivery Overview

With Multi-client (Client/Server) installations of TruVision Navigator, PCs on the same network with the TruVision Navigator Server have the ability to download the TruVision Navigator Client. This alleviates the need for an Administrator to physically ship media or visit the PC’s site to install the client software.

Remember:

- Remote distribution of client software is NOT available for the Standalone (Direct Database Connection) installation option.
- The person installing the Client software must have Administrative rights on the machine to perform the Client installation.
- The mechanism for delivering the Client software is slightly different if you use the SMTP capability within TruVision Navigator. If you use the SMTP capability, the entire process of adding a user and distributing the Client software is automated. If you do not use the SMTP capability, there are several manual steps required to deliver the Client software as described below.

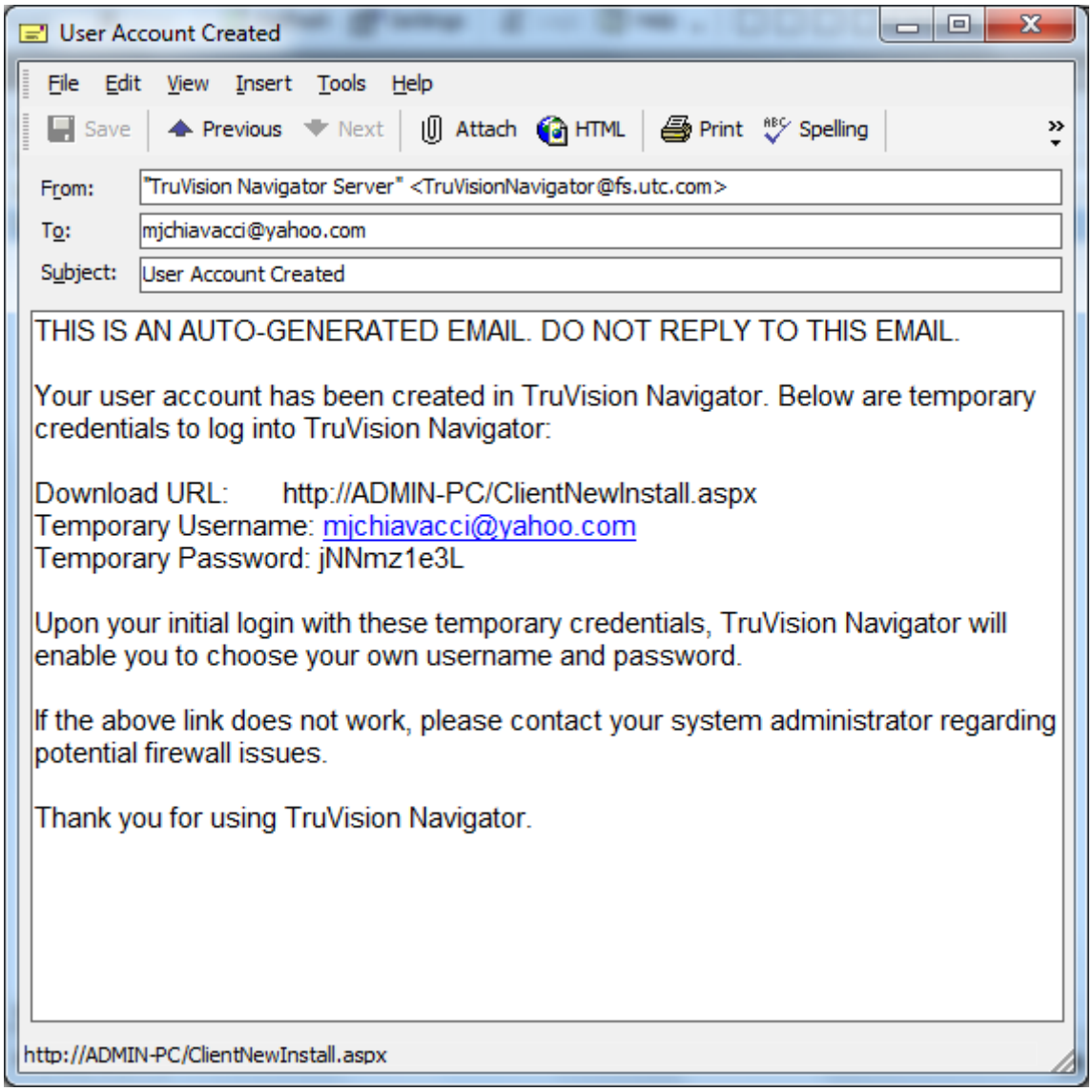
Fully Automated Client Software Delivery

TruVision Navigator can be configured to use an SMTP server to send automated email messages (with Client Download URL, username, and password) to new users or when an existing user's login credentials (username and password) need to be reset in the system by an Administrator.

Add User

- To distribute the client software remotely to a new user, you must first configure TruVision Navigator with an SMTP Server, add the new user, and permission the new user.
- To add a user, right-click on the Users node in the Navigator and select Add User. The Add User dialog will appear. Enter the user's First Name, Last Name, and Email Address (these fields are required while the Username, Password, and Confirm Password fields are disabled due to SMTP configuration) and click OK. The new user will be added under the Users node in the Navigator.
- At this time, TruVision Navigator generates the new user with a temporary username and password in the system and delivers an automated email to the SMTP server for the user, as shown below.

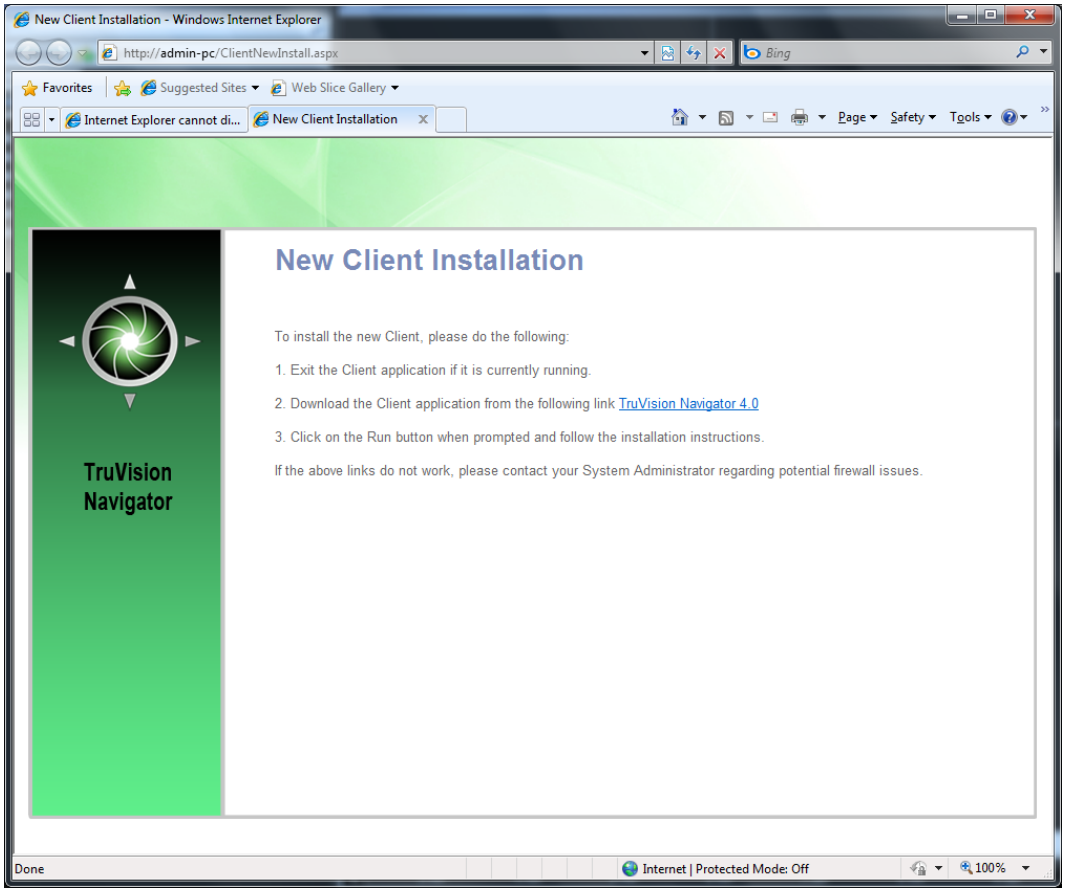
Figure 81: User Account Created Email



- The user can now click the download URL or cut/paste the string into a web browser. From the Client Installation page, follow the instructions to install the Client software.

Client Installation

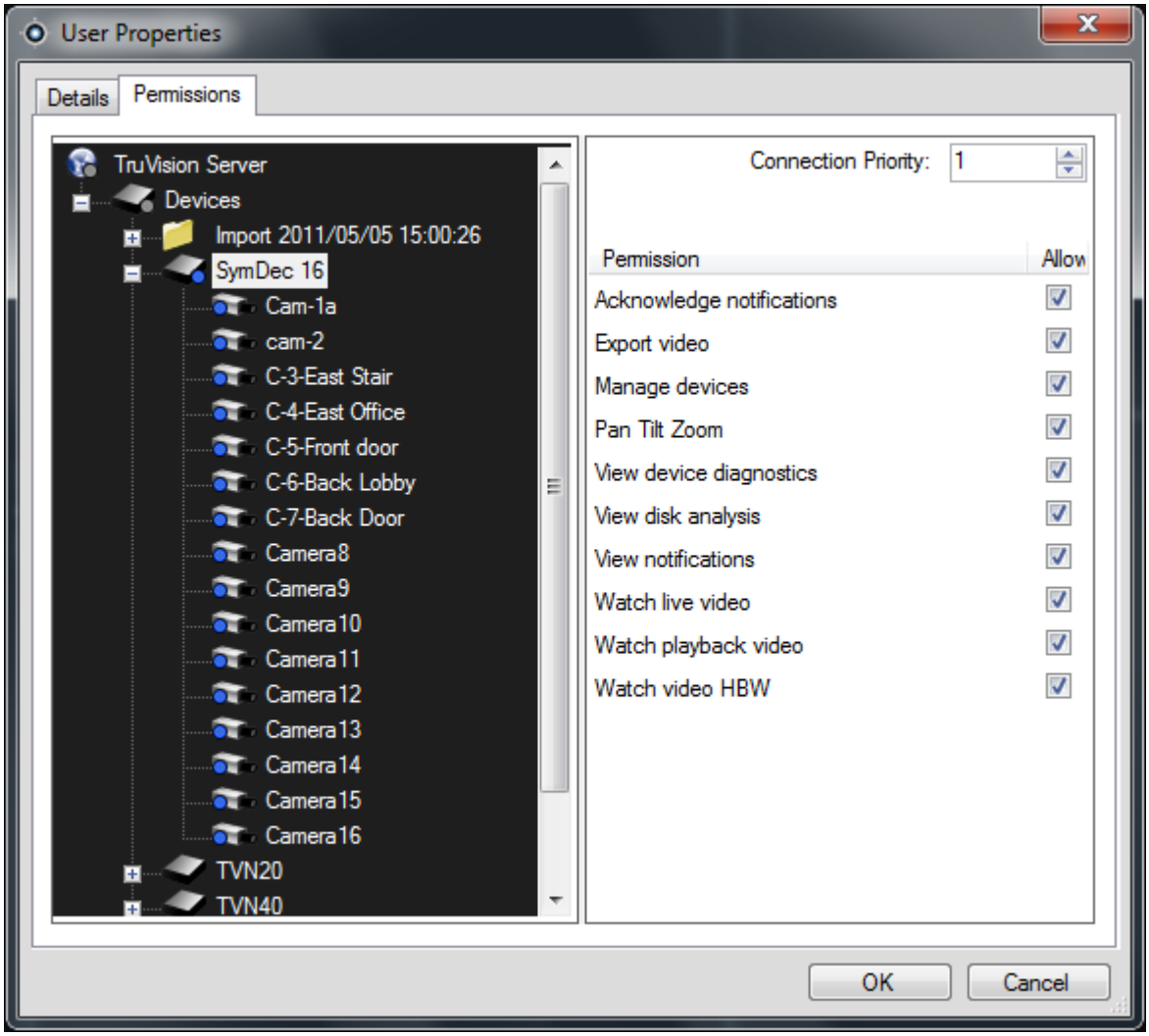
Figure 82: Client Installation Dialog



- When installation is complete and you have rebooted your machine, click on the TruVision Navigator icon on your desktop.
- Login to the application using the credentials from the email. You will be prompted to change those credentials upon initial successful login. You will also be prompted to provide a challenge question and response that, in the future, will allow you to reset your own password without Administrator assistance.
- Once inside the application, you should see all of the devices in the Navigator – per the permissions granted by the Administrator.
- Remember, when a new user is added to the system, that user does not have any permissions assigned, and therefore, will not be able to login to the application. You must assign user permissions before the user can login.

- To assign permissions to a user, right-click on the user in the Navigator and select Properties. The User Properties dialog will appear. Click on the Permissions Tab.

Figure 83: User Properties Dialog



- Highlight the TruVision Navigator Server node in the device tree and allow/deny the permissions for this user in the Permission section. If your Permission Model is set to Simple (only users), you will only see the Allow column. If your Permission Model is set to Advanced (both users and groups), you will see both the Allow and Deny columns.
- As you do this, the permissions you are granting will cascade down to all of the devices that you have listed under the TruVision Navigator Server. A blue breadcrumb will appear on all of the folders, devices, and cameras that the user has permissions.

- When assigning permissions, you have the ability to specify whether the permission is applied at the parent or child node. Granting permissions at a parent node will cascade those permissions down to the child nodes. For example, granting permissions at the TruVision Navigator Server level will cascade down over all folders, devices, and cameras beneath it. These are indicated with a blue breadcrumb. Conversely, granting permissions at the child node will not change permissions up at the parent node. In this case, the child node will show a blue breadcrumb and the parent will show a grey breadcrumb. The table below describes this feature in detail.

Table 9: Permission Breadcrumbs

Permission Breadcrumbs	Description
Blue	A blue breadcrumb indicates that there are express permissions granted on that node. These permissions are inherited by the children nodes underneath the parent node.
Grey	A grey breadcrumb indicates that there are express permissions assigned to a child of the parent node, but not at the parent node itself. This serves as a quick visual cue for the Administrator to find express permissions granted to a user on devices buried in the Permission Tree. If you continue to expand all of the grey breadcrumb nodes, you will eventually arrive at the camera or device with one or more express permissions, denoted by the blue breadcrumb.

Remember, permissions within TruVision Navigator can be as simple or as complex as you like. Very simply, an Administrator can grant permission to users across all devices in the system by applying those permissions at the TruVision Navigator Server node (parent) and let them cascade across all child nodes in the system.

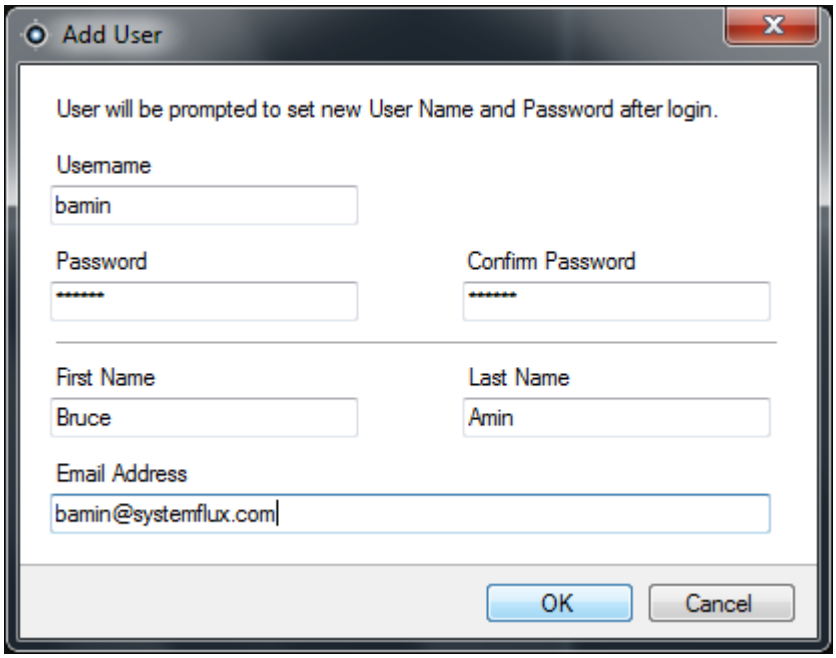
On the other hand, an Administrator can grant permission from the child nodes up for granularity and control within the system. Groups will also come into play to ease the task of permissions in the system.

Partially Automated Client Software Delivery

Remember that the process for delivering the client software is slightly different whether you choose to use SMTP or not. If you do NOT have access to SMTP, you can still deliver the client software remotely. However, there are a few additional steps you must engage in around delivering the Client Download URL and login credentials to the user.

- First, validate that there is no SMTP configuration in TruVision Navigator by right-clicking on the TruVision Navigator Server node and select Properties. Ensure that the SMTP Server IP Address is empty.
- Second, when adding a user, the Administrator will have to generate a username and password for the user, himself.

Figure 84: Add User Dialog



- Third, the Administrator has to deliver the user's login credentials and Client Download URL to the user via phone or through private email. You can cut and paste the Client Download URL from the TruVision Navigator Server Properties dialog. Remember to assign the user's permissions or he/she will not be able to login.

If you do not want to use the remote software distribution feature, you can physically load the Client software on PCs by doing the following:

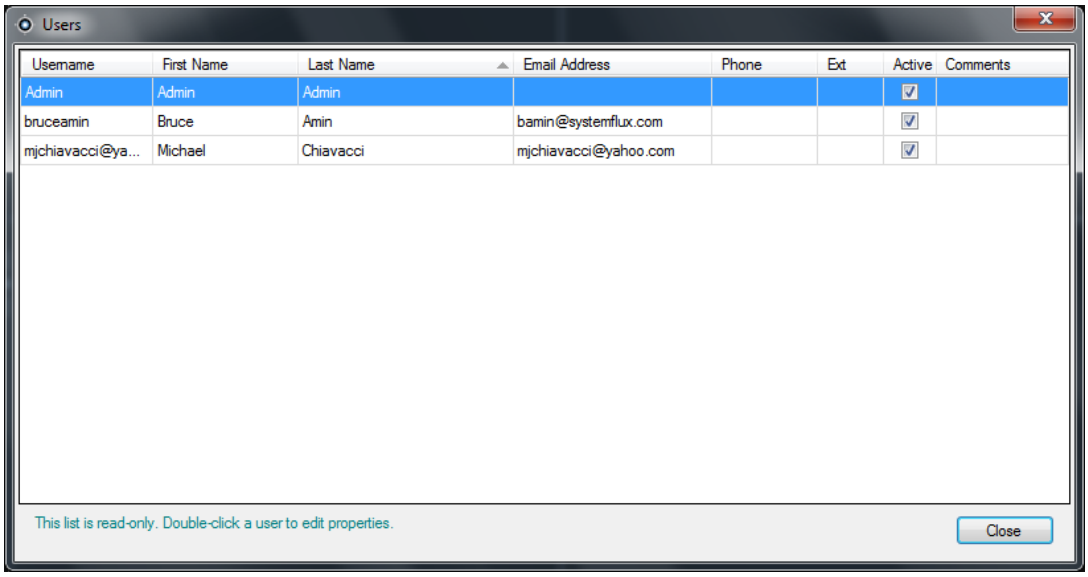
- Download the ClientInstall.exe from the Client Installation web page and place it on a thumb drive or other media.
- Physically deliver the .exe file to the specific PC.
- Run the ClientInstall.exe and follow the installation prompts (the ClientInstall.exe file is preconfigured to point to the server that it was obtained from).
- Login with the credentials for that user.

Inactivate a user

For whatever reason, an Administrator may want to inactivate a user from the system. TruVision Navigator does not delete users from the database. The user is simply placed in an Inactive status and all rights to the system are revoked.

- To make a user inactive, right-click on the user under the Users node in the Navigator and select Inactivate User. Click Yes when prompted with "Are you sure you want to inactivate this user?"
- Inactive users will be removed from the Users node in the Navigator unless you right-click on the Users node and select Include Inactive Users. The Inactive User icon is shaded grey while the Active User icon is shaded blue.
- To view all users in the database (active or inactive) in a list, right-click on the Users node and select Show User List. The Users dialog will appear. All of the columns in this dialog are sortable so you can find users quickly. Double-click on any user row to view that user's properties dialog.

Figure 85: Users List Dialog



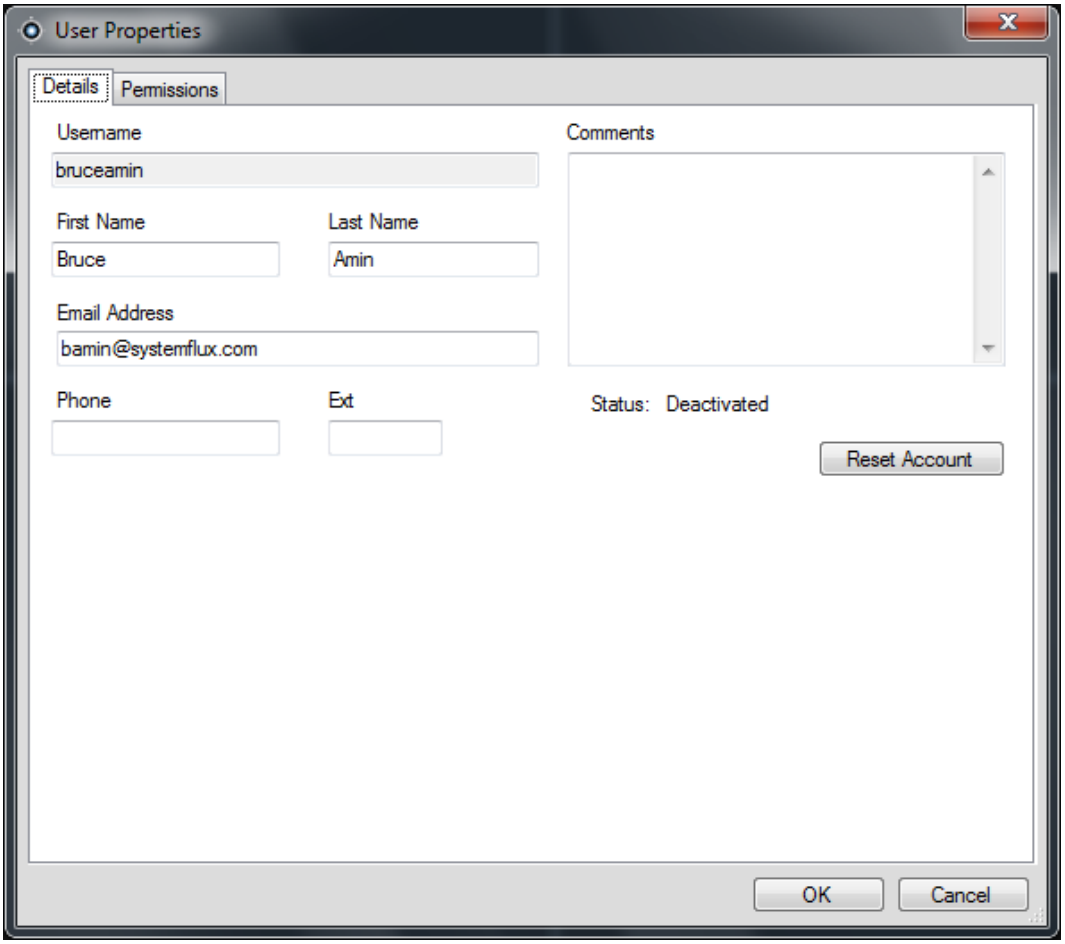
Restore an inactive user

When an Administrator needs to restore an inactive user in the system:

- Right-click on the inactive user under the Users node in the Navigator and select Activate User.
- You can also right-click on the inactive user under the Users node in the Navigator and select Properties and use the Reset Account button on the Details Tab.

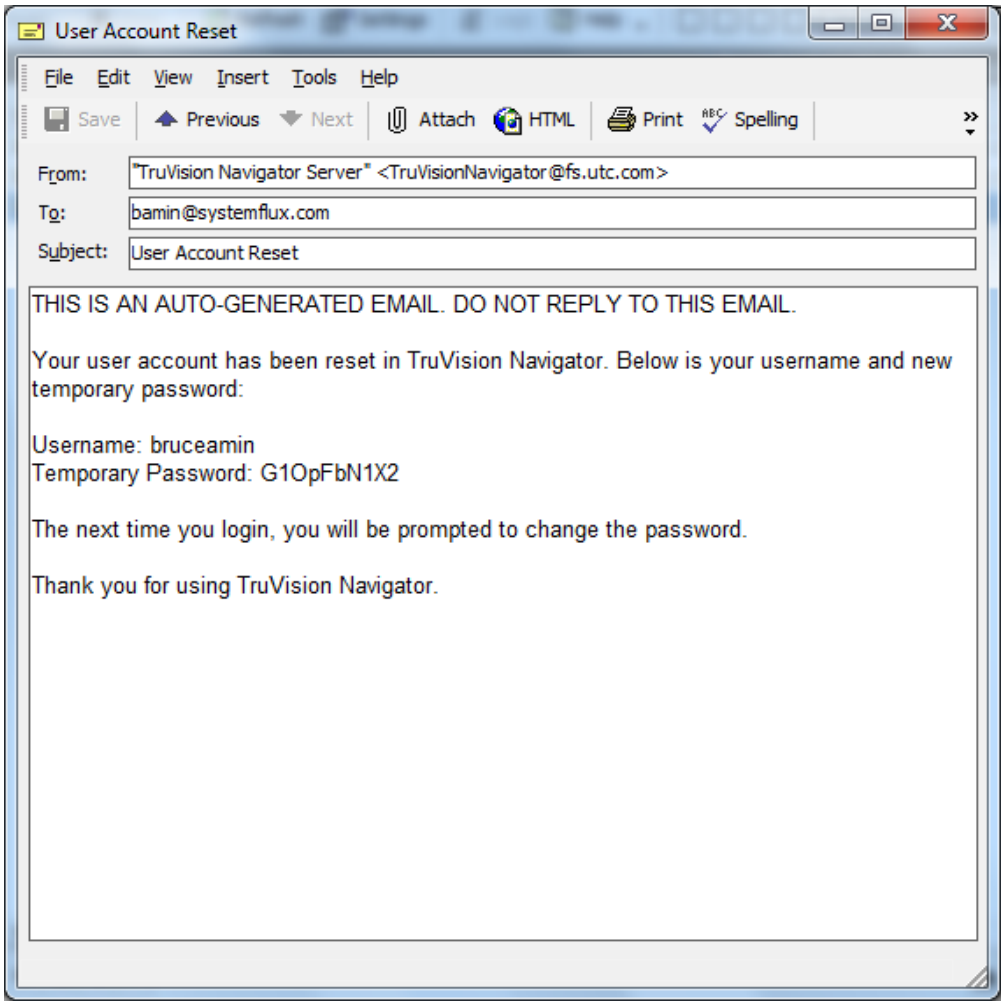
- Finally, you can launch the user list and double-click on the user for the Properties dialog to appear, and again use the Reset Account button.

Figure 86: User Properties Dialog



- If SMTP is in use, the user will get an email automatically sent to him with his temporary password for login. The user will be prompted to change this password upon initial login.

Figure 87: User Account Reset Email



- If SMTP is not in use, the Administrator will have to provide the user a new temporary password at the Change Password dialog. These temporary credentials will need to be delivered to the user via phone or the Administrator's personally generated email.

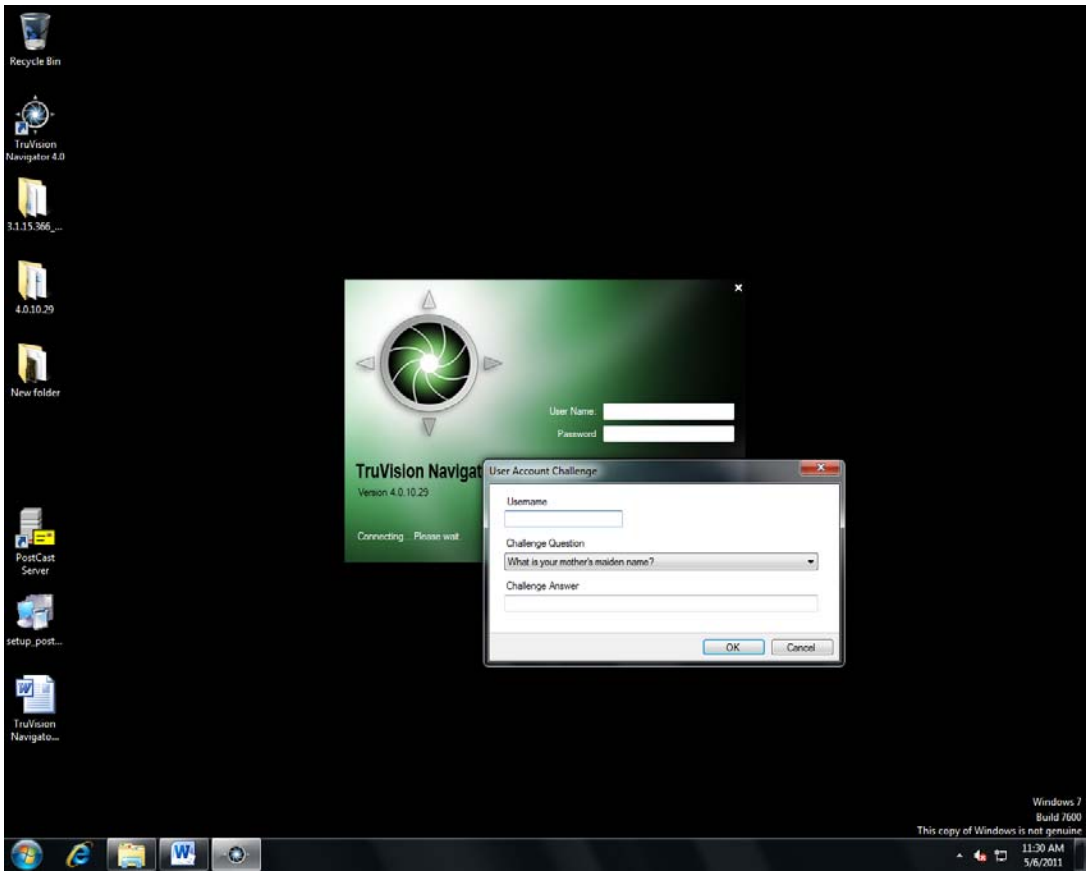
Figure 88: Change Password Dialog

Reset a user after lockout

If a user forgets his or her username or password and challenge question, that user can be locked out of the system. If a user has been locked out for login failures, they can unlock themselves by answering their challenge question via the Login form's Challenge Dialog.

If a user cannot remember his/her challenge question, a call to the Administrator is necessary to reset the account. Follow the same instructions for restoring an inactive user.

Figure 89: User Account Challenge Dialog

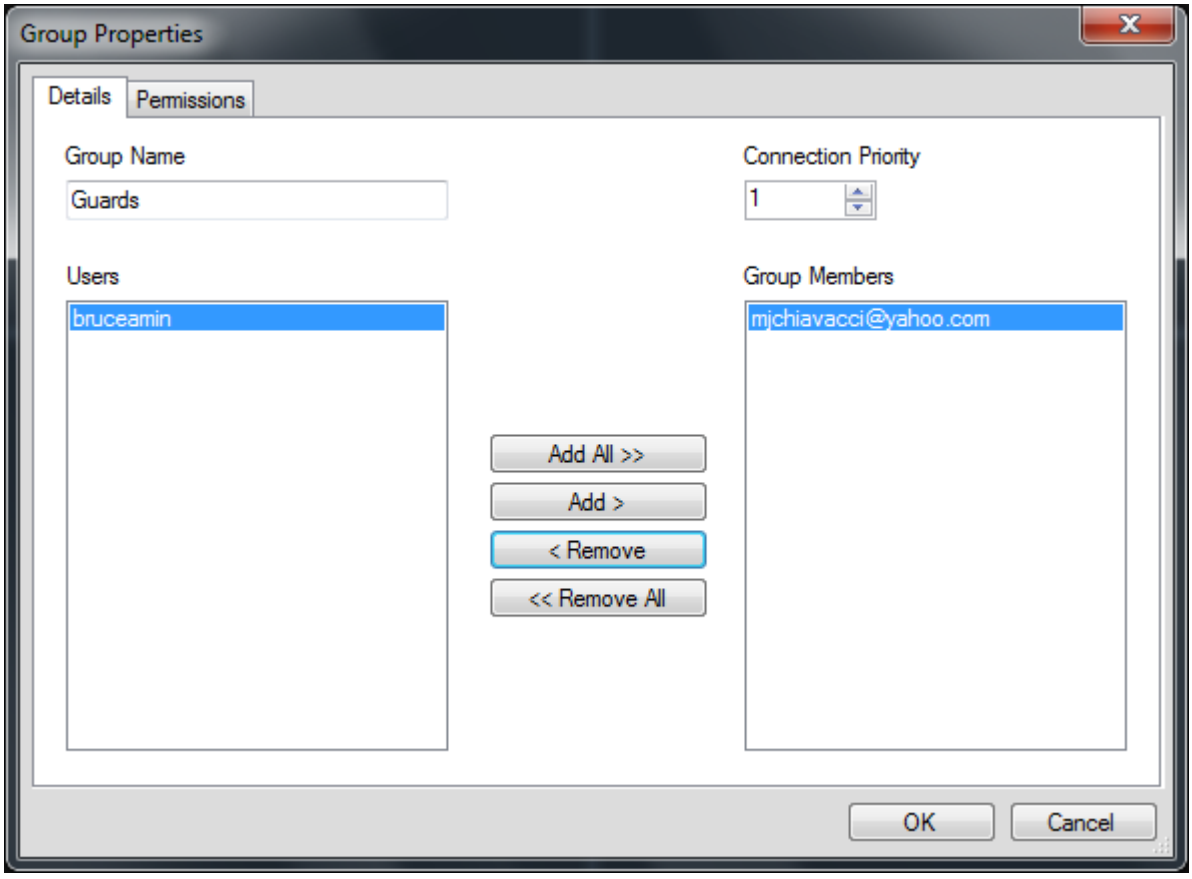


Group management

The Advanced Permission Model (on the TruVision Navigator Server Properties dialog) allows you to utilize groups within TruVision Navigator. Groups allow you to scale user permissions in your system across many users. For instance, many users can be placed into a single group, and that single group can be assigned permissions against the folders/ devices in the system. Without groups, the Administrator would have to permission each user against those same devices.

- Before you create a group, right-click on the TruVision Navigator Server node in the Navigator and select Properties. The Properties dialog will appear. Ensure the Permission Model is set to Advanced.
- Now, right-click on the Groups node in the Navigator and select Add Group. Provide a name for the group on the Add Group dialog and click OK.
- Right-click on the name of the group under the Groups node in the Navigator and select Properties. The Group Properties dialog will appear.

Figure 90: Group Properties Dialog



- On the Details Tab, you can change the group name, add users to the group, and set the group's Connection Priority. On the Permission Tab, you can permission the group as appropriate.
- On the Permissions Tab, you can assign permissions to the group across the devices in your system. Remember, these group permissions will affect all of the specific users that are members of the group.

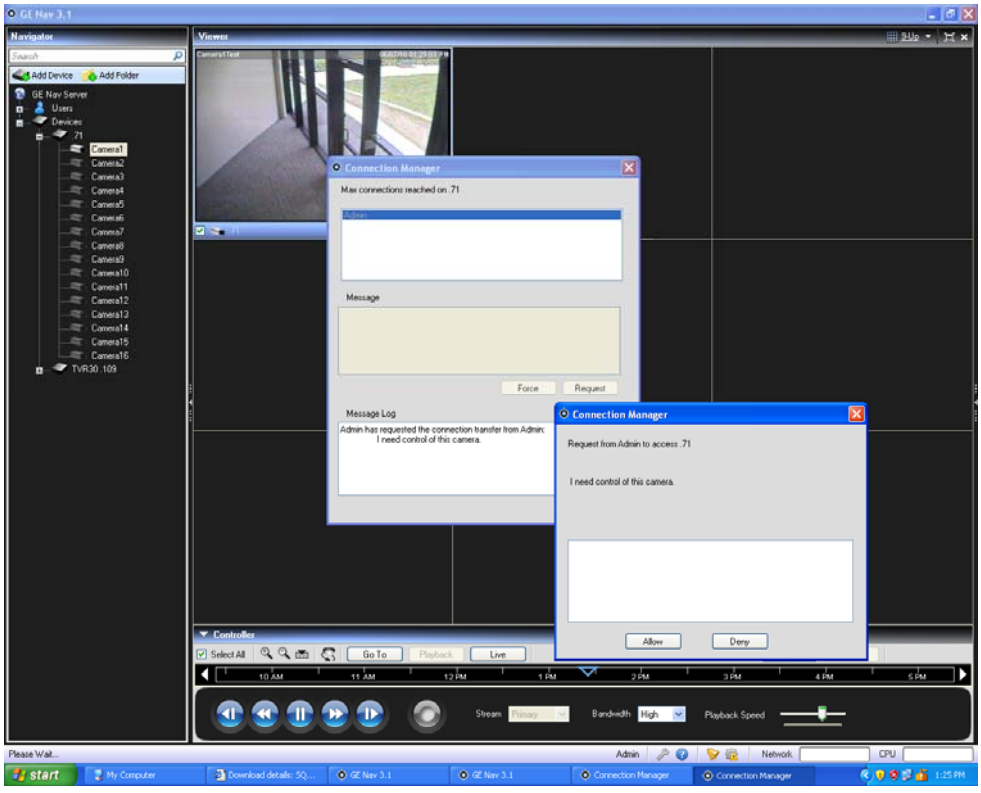
Connection priority

When it comes to connection levels, there are only a limited number of Live and Playback connections available depending on the device. TruVision Navigator automatically connects and disconnects to devices and manages those connection levels for you depending on the tasks that you wish to accomplish.

To do this, TruVision Navigator has a Connection Manager that manages connection levels to devices as well as the Connection Priority of the user requesting such connections. The Connection Priority range that you can set is from 1 to 1,000, with 1 being the top priority and 1,000 being the lowest priority.

When two users are in conflict for the same connection to the device, the user who requests it first will get that connection. Once the device has reached its connection limits, the Connection Manager will begin to broker the connection pool based upon the Connection Priority. Now when the next user requests a connection from the device, the Connection Manager will allow the higher priority user the chance to either request or force the lower priority user off of the connection. This is done via the Connection Manager chat dialog which automatically displays when conflicts occur.

Figure 91: Connection Manager Chat Dialog

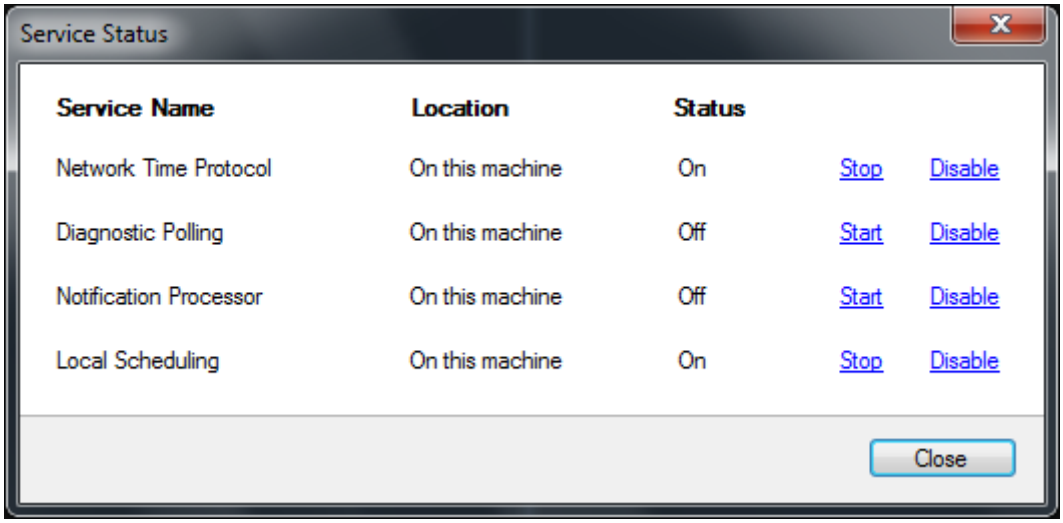


Services

There are 4 TruVision Navigator services that can be enabled to perform tasks for users. After services are configured, they allow activities to take place without the user being present. As long as the service is running on the machine, the tasks will be executed. TruVision Navigator does not need to be open.

Users can manage their services from this dialog which is launched from the gear icon in the application status bar. If an exclamation point appears over this icon, it means that at least one of the services is not running.

Figure 92: Service Status Dialog



Network Time Protocol – this server-side service can be used to distribute time to devices on the network. You must configure the device's NTP to point to the IP Address of where this NTP service is running (i.e. its location).

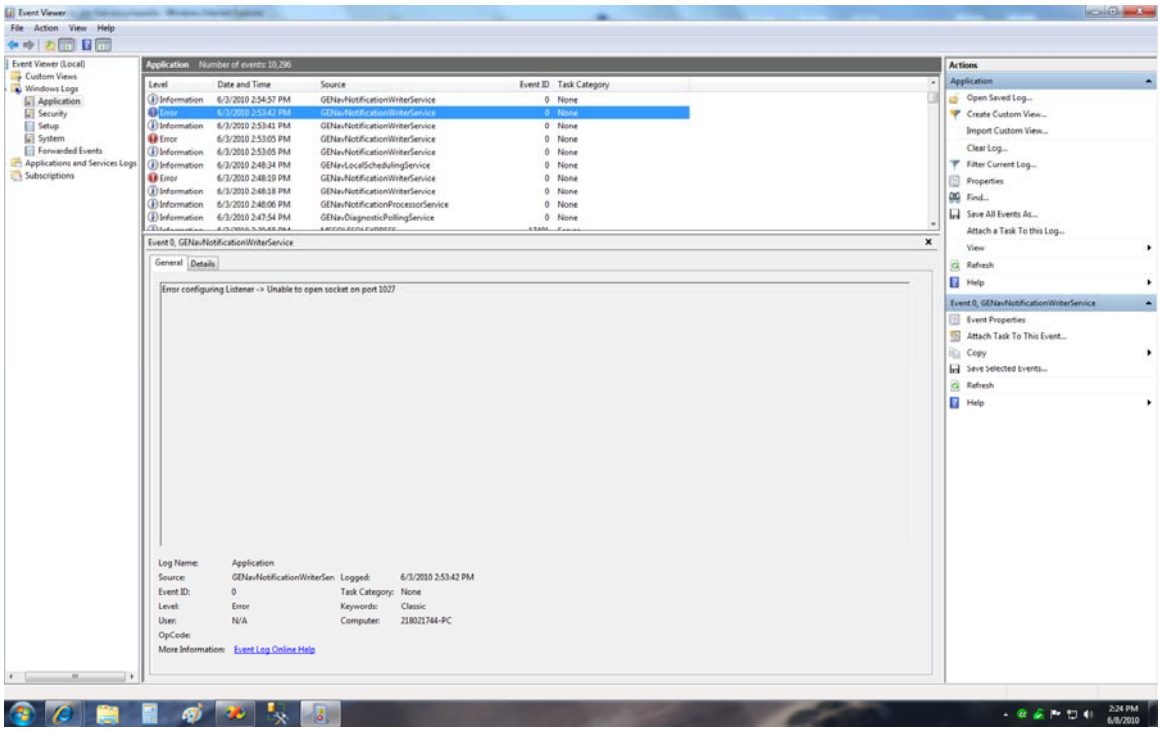
Diagnostic Polling - this server-side service can be used to periodically pull health diagnostics from devices in the system for reporting / issue resolution. The polling frequency (i.e. nightly at 3am) can be configured from the Health Diagnostics dialog.

Notification Processor - this server-side service can be used to capture notifications that are pushed from devices. Pushed notifications (via TCP or SMTP) typically include alarm, video loss, motion, etc... Devices need to be configured to push the notifications to the location (IP Address and Port) of this service. The matching notification ports must be configured in TruVision Navigator from the Notifications dialog.

Local Scheduling Service – this client-side service can be used to do video exports from devices, firmware uploads, bulk device configurations, and database backup and restores. If this service is not running, those activities will not be executed.

Should there be problems with services starting, stopping, or port conflicts, please check the Windows Event Viewer (right-click on My Computer and select Manage). TruVision Navigator will log informational and error reports there with respect to issues with the services. View the reason codes by clicking on the reports.

Figure 93: Event Viewer Dialog



Notifications

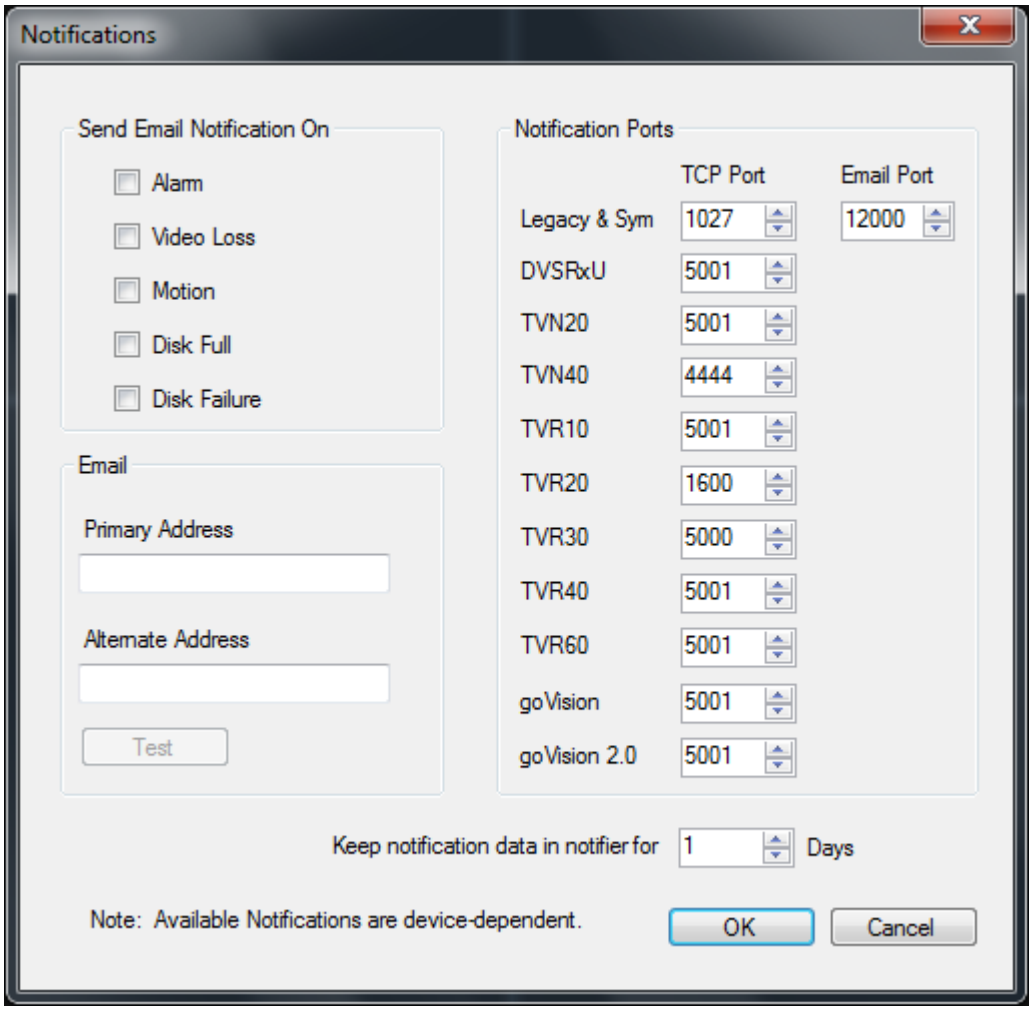
Devices have the ability to push notifications out to an IP Address and port for proactive issue resolution. These notifications typically include alarm, video loss, motion, etc... See the device-specific chapters for what notifications are supported per device.

In order to receive notifications from devices in TruVision Navigator, there are configurations that need to be made at both the device and TruVision Navigator service-level.

- Device configuration - each device must be set up to push its available notifications to the IP Address and port of where the Notification service is located. See the device-specific chapters for detailed instructions per device.

- TruVision Navigator Service configuration - the Notification Processor must be configured to listen on that same port for those notifications. Remember: routers and firewalls may have to be configured accordingly to allow for this traffic. Ensure that either the TCP Listener Port or the Email Listener Port (SMTP) on the Notifications dialog matches the port setup on the device itself.
- Launch the Notification dialog by right-clicking on TruVision Navigator Server and selecting Notifications.

Figure 94: Notifications Dialog



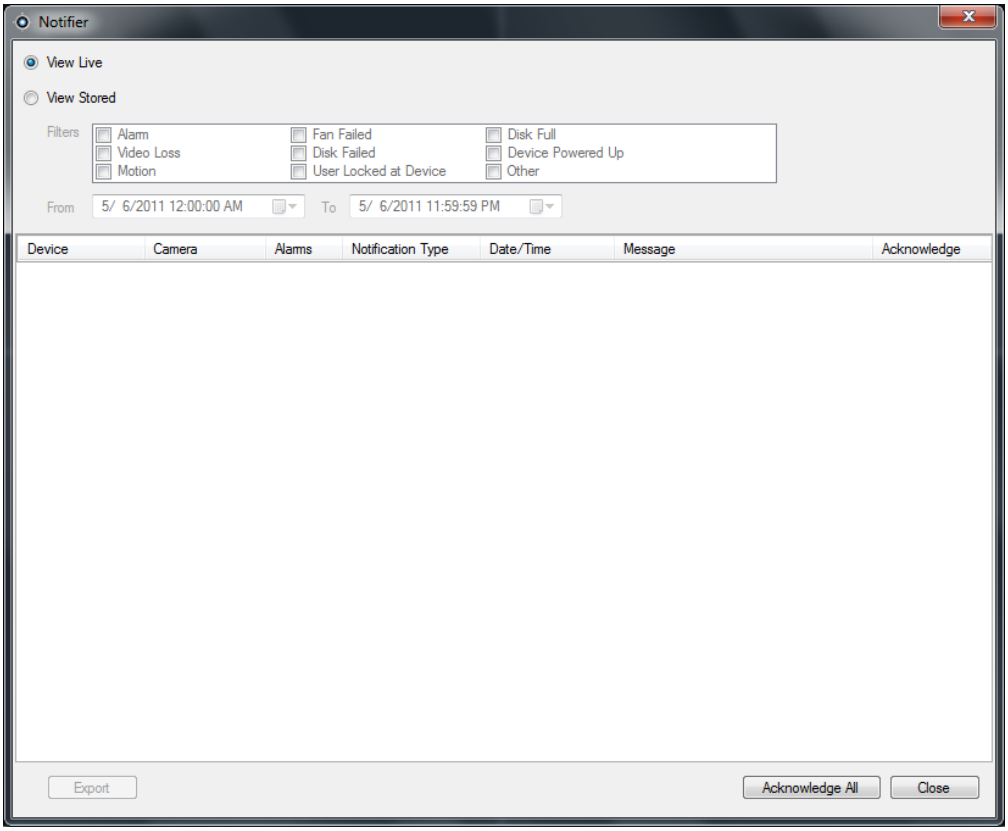
- TruVision Navigator offers you the ability to email notifications to primary and alternate addresses after a device sends a notification to the TruVision Navigator service. Remember that SMTP must be configured on the Server Properties dialog for those emails to be sent.

- TruVision Navigator offers you the ability to prune the notification data out of your database to keep the size down. Set the retention period for this data as such.

If any of these values are changed, please restart the Notification Processor service via the Services dialog for the changes to take effect.

The central repository for notifications is the Notifier dialog. You can launch this dialog from the notification icon in the application status bar.

Figure 95: Notifier Dialog



From the Notifier, you can view video for live notifications as they are received by double-clicking on the camera name link in the dialog. This will launch the video in the Viewer. New, unacknowledged notifications are signified with red shading over the Notifier icon in the application status bar. You can also tie these live notifications to an audible sound. See the Settings section for more information on this feature.

Once a live notification is acknowledged, it is considered a stored or historic notification that can be searched. You can use the filters and time/date ranges to further define your notification search. While in search mode (View Stored), red shading will appear over the Notifier icon in the application status bar if new live notifications are received. To view the new notifications, select View Live in the

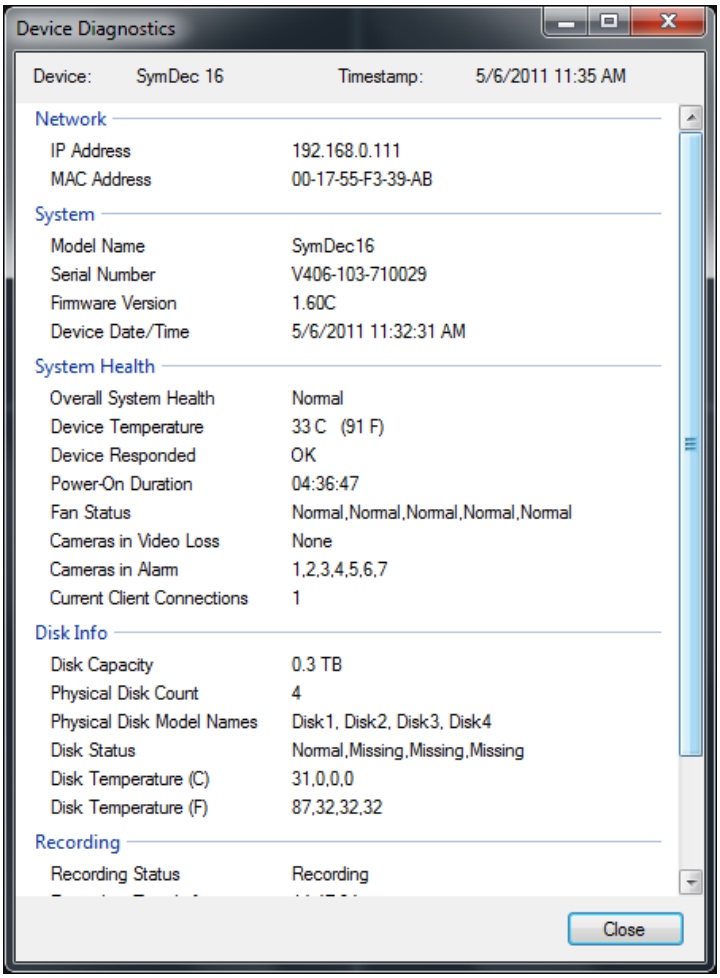
Notifier and then sort and filter on the columns as needed to find the latest notification. Double-click to access the video.

Health Diagnostics

TruVision Navigator offers the ability to run a health diagnostic snapshot on a single device or aggregate health diagnostic reporting across all of the devices in the system.

- To run a manual health diagnostic snapshot on a single device, right-click on the device in the Navigator and select Run Health Diagnostics.
- The Diagnostics dialog will appear and show the full set of health diagnostic data for that particular device. See the device-specific chapters for more details on the different health diagnostics that are available per device.

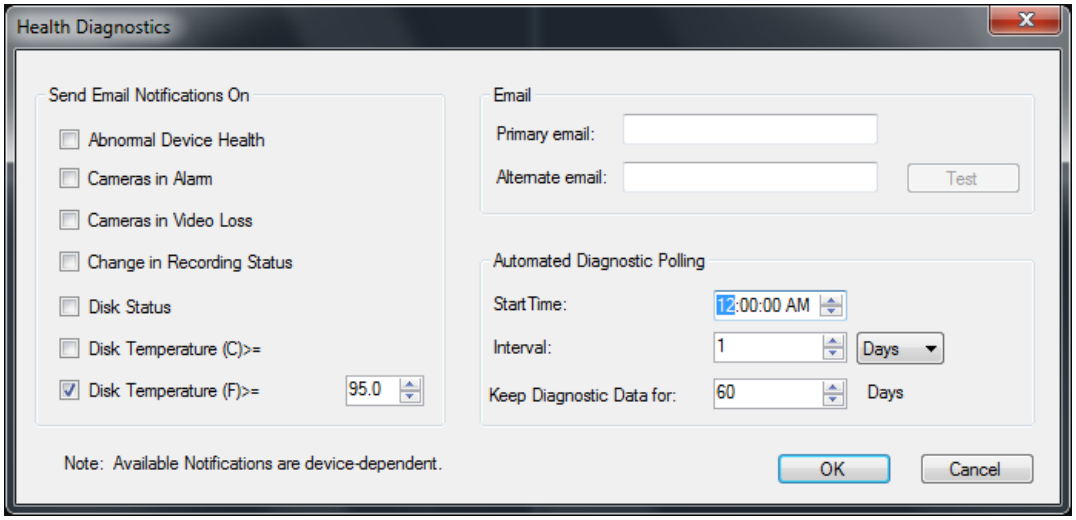
Figure 96: Device Diagnostics Dialog



To run automated health diagnostic polling on an interval across all of the devices in the system, the Diagnostic Polling service must first be configured.

- To configure the Diagnostic Polling service, right-click on the TruVision Navigator Server node and select Health Diagnostics. The Health Diagnostic dialog will display.

Figure 97: Health Diagnostics Dialog



- From the Health Diagnostic dialog, enter the Diagnostic Polling Start Time and Interval. Enter the retention period for the length of time to keep the health diagnostic polling data in the database and click OK.
- Check any email notification options and enter the primary and alternate email addresses for proactive emails to be sent on activity. Remember that SMTP must be configured on the Server Properties dialog for those emails to be sent.
- Restart the Diagnostic Polling service from the Services dialog for the automated polling to begin. Remember, if any of these values are changed, please restart the Diagnostic Polling service via the Services dialog for the changes to take effect.

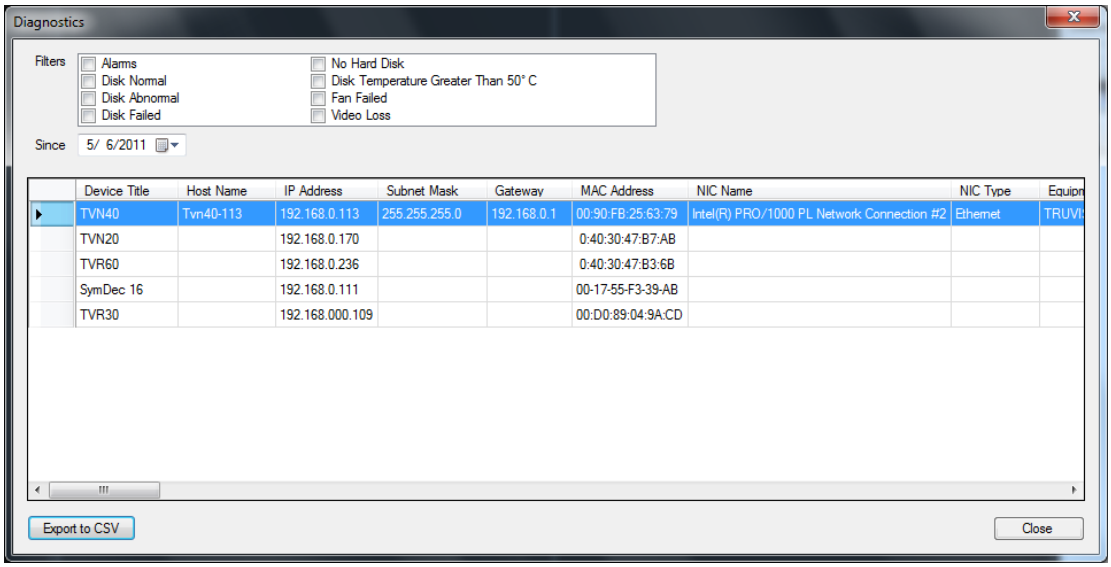
Once manual snapshots or automated health diagnostic data has been captured, that data is stored in the TruVision Navigator database. That data is now searchable by users to aid in maintaining up-time of the system.

Remember if you are searching in the Navigator for health diagnostic information and no results can be found, you most likely have not setup your automated polling or run a manual diagnostic against a single device.

- To review health diagnostic data for all devices, right-click on the Devices node in the Navigator and select Run Health Diagnostics.

- The Diagnostics dialog will appear. Use the filters and date parameter to pinpoint your search.
- You can export the contents of the dialog to .csv via the Export to CSV button for case management, work orders, or issue resolution documentation.

Figure 98: Diagnostics Dialog

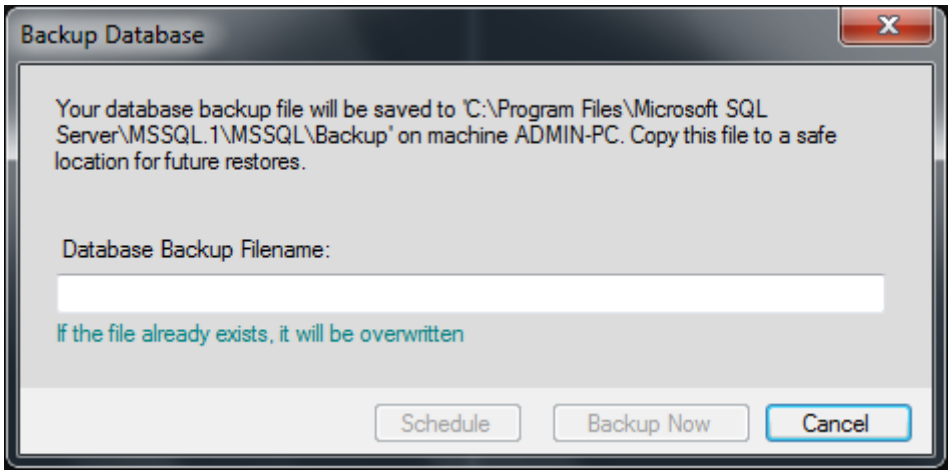


Database backup and restore

TruVision Navigator offers users the ability to backup the TruVision Navigator database. This backup should be moved off-machine by an Administrator for safekeeping. Should something happen to the machine where the TruVision Navigator database resides, the Administrator can install that same version of TruVision Navigator and restore the database with the backup file. This will bring the system back into operation quickly without manual re-entry of device, user, group, permission, or other system configuration data.

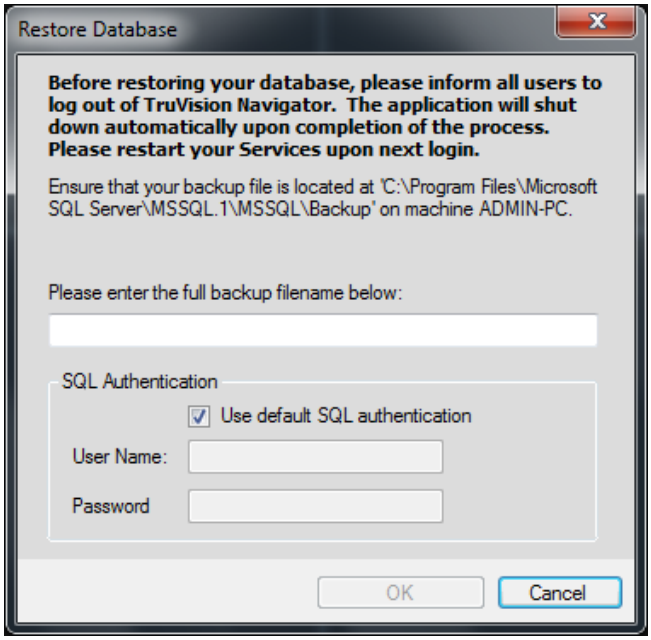
- To backup the TruVision Navigator database, right-click on the TruVision Navigator Server node and select Tasks - Database Backup.
- The Backup Database dialog will appear. Provide a database backup name (no file extension is necessary) and take note of the path where the database backup file will reside. The Administrator should copy or move this file to a safe location.
- Upon initiation of the backup, refer to the Tasks panel for status. After successful completion, your database backup file will reside at the designated location.

Figure 99: Backup Database Dialog



- To restore the TruVision Navigator database, right-click on the TruVision Navigator Server node and select Tasks - Database Restore.
- The Restore Database dialog will appear. Ensure that a copy of the backup database file has been placed in the directory listed on the form. Enter the exact name of the file in the text field provided. If you are restoring the database to a SQL instance that requires SQL authentication credentials, enter them. Otherwise, use the default setting. Upon initiation of the restore, refer to the Tasks panel for status.
- Once you see the Restore Task in the Task panel, logout of the application. Log back in and your database should be restored.

Figure 100: Restore Database Dialog

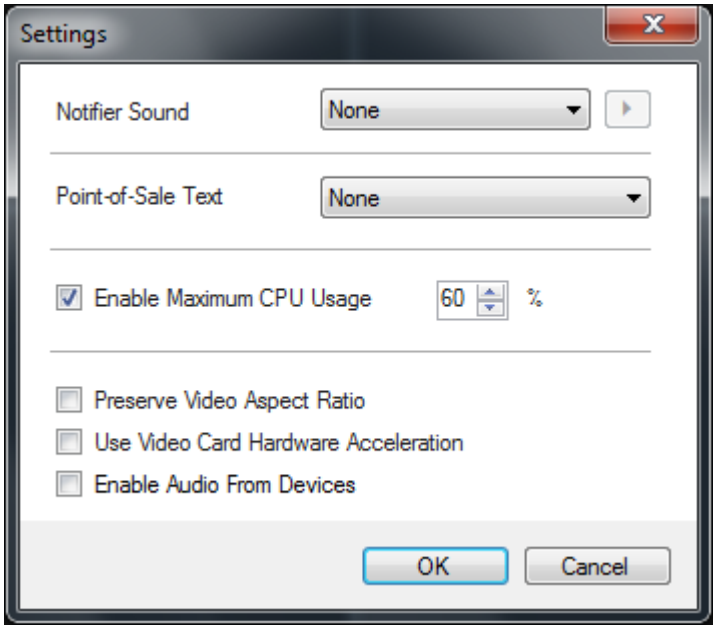


Settings

TruVision Navigator offers several other system settings that can be useful depending on the environment.

- To access these settings, click on the wrench icon in the application status bar. The Settings dialog will appear.

Figure 101: Settings Dialog



- Notifier Sound – this allows new notifications received in TruVision Navigator's Notifier to be tied to an audible sound.
- Point-of-Sale Text – select whether or not you would like the POS text to display In band (text overlaid on the video) or Out of Band (text placed next to the video) with respect to the video.
- Enable Max CPU Usage – this limits how much video can be rendered in the Viewer based upon the level of CPU usage on the machine. The default is enabled for 80% of CPU usage. This means that as you load video in the Viewer, TruVision Navigator checks to see if there is available CPU to load the video. Once 80% CPU is exceeded, TruVision Navigator will not allow you to open any more video. Video is CPU intensive, and this feature prevents users from maximizing their CPU and freezing their machine. Video will load quicker when Max CPU Usage is disabled, because the check on the CPU is removed. If you have a heavily resourced machine, you most likely do not need this feature.
- Preserve Video Aspect Ratio – this removes the 4x3 aspect ratio in the Viewer and scales the video to fill the entire video tile.

- Use Video Card Hardware Acceleration – this offloads CPU cycles to the video card's GPU (hardware acceleration).
- Enable Audio From Devices – this checkbox enables the ability to hear audio transmitted from devices.

Help

TruVision Navigator offers an easy to use Help function for more detailed system instructions. You can also obtain TruVision Navigator version, copyright, and End-user License Agreement information here. Organizations have the ability to add their own custom Help or training link here to facilitate the adoption of the product.

- Click on the question mark icon in the application status bar to launch the Help dialog.

Figure 102: Help Dialog

Appendix A
Device Details

Summary

This Appendix contains important device information.

Device Feature Matrix

TVR10

Table 10: TVR10

Feature	TVR10
Default Ports	Video = 8000 (editable) Command and Control = 8000 (editable) Configuration = 8000 (editable) Notifications = 5001 (editable) Firmware Upload = 8000 (editable)
Default Username / Password	admin 1234 We recommend changing this default password at time of installation.
Default IP Address	192.168.1.82
Compression	H.264
Connection Types	TCP UDP
Streaming Limits	24 Live or Playback streams simultaneously with a maximum of 6 streams per channel If connection lease is transferred among users when connection limit is reached, the user whose connection is taken will be disconnected from the device and all videos closed - see Connection Manager.
Stream Overlay	Camera Name Date and Time
High / Low Bandwidth	No
Dual Streaming	Yes
Stream Nomenclature	The Mainstream is referred to as: On-Screen-Display = Time Lapse Web Browser = Mainstream

Feature	TVR10
	TruVision Navigator = Mainstream The Sub stream is referred to as: On-Screen-Display = N/A Web Browser = Sub stream TruVision Navigator = Sub stream Event Stream is not supported on the device.
Playback Controls	Play Pause Frame Advance Fast Forward (2x,4x) Frame Reverse, Rewind, and Playback Speeds are not supported. Video jumps back 4 seconds after resume playback from Fast Forward and Frame Advance. When fast forwarding video and it catches up to present time (or Live video), the video in the viewing tile will remain paused until the user clicks the Live button in the Viewer Toolbar. No other playback controls will work until the Live button is selected.
Digital Zoom	Playback Only
Snapshot	Yes
Local Record	Yes Pause during local record is not supported.
Instant Replay	Yes There is a 2 to 5 minute video buffer in the device. While video is in the buffer, it cannot be viewed. Once the buffer fills, the video is written to the hard drive and is available for playback. This affects Instant Replay and the Playback button in TruVision Navigator. Those 2 features get their time increment from the user-defined Instant Replay configuration on the TruVision Navigator Server Properties Tab. As a result, set this time increment to greater than 5 minutes to be safe. If you try to search for video that is still in the buffer, you will be taken to Live video.
Disk Analysis	Alarm Motion Recorded Untagged Video Loss is not supported in disk analysis. Disk analysis takes approximately 15-45 seconds depending on the amount of recorded data on the device.
Video Export	Yes There will be approximately 4 seconds of additional video exported prior to the specified start time.
TruVision Navigator Player	Yes .mp4 proprietary file format.

Feature	TVR10
PTZ Control	Yes
Focus, Iris, Zoom	Yes
Presets	Yes
Tours	Go To Record Only 1 tour is supported (which is hard coded to Tour 1 on the PTZ camera).
Camera Search	Alarm Event Motion
Smart Search	No
Point-of-Sale Text	No
Motion	Yes Get the configuration for this device via TruVision Navigator and set the active zones on a per camera basis via the Motion Configuration option associated with each camera.
Audio	Yes There is 1 audio input per device. That input can be mapped to any camera on the device simply by enabling audio on that camera. Access the setting by going to the device configuration, and enabling the audio option on the Recording Tab for each camera. If enabled, as soon as any camera from the device is added in the TruVision Navigator Viewer and selected, the audio will play.
Bi-directional Audio	No
Notifications	Alarm Video Loss Motion Disk Full Disk Failure To setup the device to send TCP notifications for cameras, right-click on the device in the Navigator and select Configure Device. On the Camera Tab's Event Section, select the events you would like to receive and set the schedules as appropriate. On the Camera Tab's Rules Section, for each event type, ensure that "notify me" is selected. Repeat for each event type. On the Notifications Tab, the Notify IP Address should be the IP address of where the TruVision Navigator Server service is located (Notification Processor). The Notify Port is defaulted to 5001 and is editable. Ensure this port matches the one listed on the TruVision Navigator Server - Notifications Dialog. To setup the device to send TCP notifications for the device itself (i.e. Disk Full and Disk Failure), right-click on the device in the Navigator and select Configure Device. On the Notification Tab, for each notification type, ensure that "notify me" is selected. Repeat for each notification type and click Save. Ensure the notification port on the device matches that of TruVision Navigator Server as described above. Restart the Notification Processor service for TruVision Navigator to process the notifications.

Feature	TVR10
	Email notification is not supported at the device-level.
Health Diagnostics	IP Address MAC Address Model Name Serial Number Firmware Version Device Date/Time Total Device Health HDD Status HDD Capacity Cameras in Video Loss Cameras in Alarm Current Client Connections Record Status
Firmware Upload	Yes
Bulk Firmware Upload	Yes
Device Configuration	Yes
Bulk Configuration	Yes
Remote Reboot	Yes
UTCFS - IP Camera Support	N/A
3rd Party - IP Camera Support	N/A
3rd Party - IP Camera Support	N/A

TVR20

Table 11: TVR20

Feature	TVR20
Default Ports	Video = 80 (editable) Command and Control = 80 (editable) Configuration = 80 (editable) Notifications = 1600 (editable) Firmware Upload = 80 (editable)
Default Username / Password	admin 1234 We recommend changing this default password at time of installation.
Default IP Address	192.168.1.82
Compression	H.264
Connection Types	TCP UDP
Streaming Limits	16 live and 4 playback streams simultaneously
Stream Overlay	Camera Name Date and Time
High / Low Bandwidth	No
Dual Streaming	Primary and alternate streams are available on both live and playback. Dual straming can be set on each camera rather than globally for the entire device.
Stream Nomenclature	N/A
Playback Controls	Play Pause

Feature	TVR20
	Frame Advance Fast Forward (1x,2x,4x,8x) Frame Reverse Rewind (1x,2x,4x,8x)
Digital Zoom	No
Snapshot	Yes
Local Record	Yes
Instant Replay	Yes
Disk Analysis	Alarm Motion Video Loss Untagged
Video Export	Yes
TruVision Navigator Player	Yes .avr proprietary file format.
PTZ Control	Yes
Focus, Iris, Zoom	Yes
Presets	Yes
Tours	No
Camera Search	Alarm Motion Text
Smart Search	Yes
Point-of-Sale Text	Yes Overlay on video only (via the Settings Dialog - In Band setting)
Motion	Yes Get the configuration for this device via TruVision Navigator and set the active zones on a per camera basis via the Motion Configuration option associated with each camera on the Cameras Tab.
Audio	Yes 4 channel and 8 channel devices have 2 audio input ports. 16 channel has 4 audio input ports. Audio channels corresponds to cameras. (i.e. port 1 to camera 1, port 2 to camera 2.)
Bi-directional Audio	Yes
Notifications	Alarm Motion Video Loss Disk failed Disk full Fan failed Abnormal temperature Device powered up Recording stopped Recording started Authentication lockup Network disconnected
Health Diagnostics	IP address Subnet mask

Feature	TVR20
	Gateway MAC Address Model name Serial number Firmware version Date/time Cameras in video loss Current client connections Disk capacity Logical disk count Physical disk count Disk temperature celcius Disk temperature farenheit Recording status First recorded video Last recorded video Video format
Firmware Upload	Yes
Bulk Firmware Upload	Yes
Device Configuration	Yes
Bulk Configuration	Yes
Remote Reboot	Yes
UTCFS - IP Camera Support	N/A
3rd Party - IP Camera Support	N/A
3rd Party - IP Camera Support	N/A

TVR30

Table 12: TVR30

Feature	TVR30
Default Ports	Video = 80 (editable) Command and Control = 80 (editable) Configuration = 80 (editable) Notifications = 5000 (editable) Firmware Upload = 80 (editable) Video and control port changes must be done from the front panel of the device.
Default Username / Password	admin 1234 We recommend changing this default password at time of installation.
Default IP Address	192.168.1.82
Compression	H.264
Connection Types	TCP TCP I-frame
Streaming Limits	16 channel: 16 live or 16 playback streams per connection (maximum of 8 connections) 8 channel: 8 live or 8 playback streams per connection (maximum of 8 connections)

Feature	TVR30
	If Connection lease is transferred among users when connection limit is reached, the user whose connection is taken will be disconnected from device and all videos closed.
Stream Overlay	Camera Name Date and Time
High / Low Bandwidth	Yes High/Low bandwidth stream switching is global and affects all cameras of a device.
Dual Streaming	Yes Primary/Alternate stream switching is global and affects all cameras of a device. Alternate stream switching during Playback is not supported.
Stream Nomenclature	N/A
Playback Controls	Play Pause Frame Advance Fast Forward (2x, 4x, 8x, 16x, 32x) Frame Reverse Rewind (2x, 4x, 8x, 16x, 32x) When fast forwarding video and it catches up to present time (or Live video), the video in the viewing tile will remain paused until the user clicks the Live button in the Viewer Toolbar. No other playback controls will work until the Live button is selected. Live and Playback video will drop frames and slow down if there is substantial network traffic. When executing a seek operation for playback, video will temporarily switch to live, and then switch to the new seek time.
Digital Zoom	No
Snapshot	Yes
Local Record	Yes The device only supports local record for one camera at a time. If user has a local recording going and tries to initiate another camera from the same device, the original local recording will be stopped and a then the new local recording will begin.
Instant Replay	Yes
Disk Analysis	Alarm Motion Video Loss Untagged Disk analysis takes approximately 30-60 seconds depending on the amount of recorded data on the device.
Video Export	Yes The file size approximation in the Collector for video export is not accurate for this device.
TruVision Navigator Player	Yes

Feature	TVR30
	.video proprietary file format.
PTZ Control	Yes
Focus, Iris, Zoom	Yes
Presets	Yes
Tours	No
Camera Search	Alarm Event Motion Text
Smart Search	No
Point-of-Sale Text	Yes Overlay on video or placed next to the video (via the Settings Dialog - In Band or Out of Band setting)
Motion	Yes Get the configuration for this device via TruVision Navigator and set the active zones on a per camera basis via the Motion Configuration option associated with each camera on the Cameras Tab.
Audio	Yes There is 1 audio input per channel. Enabling audio on the device is a per channel setting. Access the settings by going to the device configuration, and enabling the audio option on the Cameras Tab for each camera. If enabled, as soon as any camera from the device is added in the TruVision Navigator Viewer and selected, the audio will play. Audio is not supported when switching to the Alternate stream.
Bi-directional Audio	Yes
Notifications	Alarm Motion Video Loss Disk Full Hard Disk Error To setup the device to send TCP notifications for cameras, right-click on the device in the Navigator and select Configure Device. On the Camera Tab's Event Section, select the events you would like to receive per camera. On the Alarms Tab, Remote Alert section, the Notify IP Address should be the IP address of where the TruVision Navigator Server service is located (Notification Processor). The Notify Port is defaulted to 5000 and is editable. Ensure this port matches the one listed on the TruVision Navigator Server - Notifications Dialog. Restart the Notification Processor service for TruVision Navigator to process the notifications.
Health Diagnostics	Host Name IP Address MAC Address Equipment Name Model Name Hardware Revision

Feature	TVR30
	Firmware Version Device Time/Date Current Client Connections Record Status First Recorded Video Latest Recorded Video Video Stored (Days) Video Stored (Hours) Physical Disk Model Name Physical Disk Count HDD Status HDD Capacity (Gb) HDD Temperature (C) HDD Temperature (F)
Firmware Upload	Yes To upload firmware to this device via TruVision Navigator, download the firmware file with file extension .tgz. Extract the .tar file to your desktop from the .tgz. Right-click on the device in the Navigator and select Upload Firmware. Browse for the .tar file when prompted. Execute the upload. Remember the Local Scheduling Service needs to be running After TruVision Navigator reports firmware upload success in the Task Panel, the device will require 1-2 minute wait before the user can reconnect to the device.
Bulk Firmware Upload	Yes
Device Configuration	Yes Does not currently support remote configuration of resolution for recording. DDNS when enabled usually causes the box to slow down when getting / setting configuration.
Bulk Configuration	Yes
Remote Reboot	Yes Closing video tiles while the device is rebooting will cause TruVision Navigator to freeze and require the user to log back into the application.
UTCFS - IP Camera Support	N/A
3rd Party - IP Camera Support	N/A
3rd Party - IP Camera Support	N/A

TVR40

Table 13: TVR40

Feature	TVR40
Default Ports	Video = 8000 (editable) Command and Control = 8000 (editable) Configuration = 8000 (editable) Notifications = 5001 (editable) Firmware Upload = 8000 (editable)

Feature	TVR40
Default Username / Password	Administrator 3477 We recommend changing this default password at time of installation.
Default IP Address	192.168.1.82
Compression	H.264
Connection Types	TCP UDP
Streaming Limits	24 Live or Playback streams simultaneously with a maximum of 6 streams per channel. If connection lease is transferred among users when connection limit is reached, the user whose connection is taken will be disconnected from the device and all videos closed - see Connection Manager.
Stream Overlay	Camera Name Date and Time
High / Low Bandwidth	No
Dual Streaming	Yes
Stream Nomenclature	The Main stream is referred to as: On-Screen-Display = Schedule Web Browser = Main stream TruVision Navigator = Main stream The Sub stream is referred to as: On-Screen-Display = N/A Web Browser = Sub stream TruVision Navigator = Sub stream The Event stream is referred to as: On-Screen-Display = Event Web Browser = Event TruVision Navigator = Event The Time Lapse stream is referred to as: On-Screen-Display = Time Lapse Web Browser = Time Lapse TruVision Navigator = Time Lapse The Sub stream, Event, and Time Lapse streams are derivative configurations of the Main stream. Typically, the Main stream is recorded on a schedule, the Event stream is recorded on Event, the Time Lapse stream is recorded continuously, and the Sub stream can be viewed Live
Playback Controls	Play Pause Frame Advance Fast Forward (2x,4x) Frame Reverse, Rewind, and Playback Speeds are not supported. Video jumps back 4 seconds after resume playback from Fast Forward and Frame Advance.

Feature	TVR40
	When fast forwarding video and it catches up to present time (or Live video), the video in the viewing tile will remain paused until the user clicks the Live button in the Viewer Toolbar. No other playback controls will work until the Live button is selected.
Digital Zoom	Playback Only
Snapshot	Yes
Local Record	Yes Pause during local record is not supported.
Instant Replay	Yes There is a 2 to 5 minute video buffer in the device. While video is in the buffer, it cannot be viewed. Once the buffer fills, the video is written to the hard drive and is available for playback. This affects Instant Replay and the Playback button in TruVision Navigator. Those 2 features get their time increment from the user-defined Instant Replay configuration on the TruVision Navigator Server Properties Tab. As a result, set this time increment to greater than 5 minutes to be safe. If you try to search for video that is still in the buffer, you will be taken to Live video.
Disk Analysis	Alarm Motion Recorded Untagged Video Loss is not supported in disk analysis. Disk analysis takes approximately 45 to 90 seconds depending on the amount of recorded data on the device.
Video Export	Yes There will be approximately 4 seconds of additional video exported prior to the specified start time.
TruVision Navigator Player	Yes .mp4 proprietary file format.
PTZ Control	Yes
Focus, Iris, Zoom	Yes PTZ protocol GE RS-485 does not support Focus and Iris commands in this release.
Presets	Yes
Tours	Go To Record Only 1 tour is supported (which is hard coded to Tour 1 on the PTZ camera).
Camera Search	Alarm Event Motion Text
Smart Search	No
Point-of-Sale Text	Yes

Feature	TVR40
	Overlay on video only (via the Settings Dialog - In Band setting)
Motion	Yes Get the configuration for this device via TruVision Navigator and set the active zones on a per camera basis via the Motion Configuration option associated with each camera.
Audio	Yes There are 16 audio inputs per device (1 per channel). Enabling audio on the device is a per channel setting. Access the settings by going to the device configuration, and enabling the audio option on the Recording Tab for each camera. If enabled, as soon as any camera from the device is added in the TruVision Navigator Viewer and selected, the audio will play.
Bi-directional Audio	Yes
Notifications	Alarm Video Loss Motion Disk Full Disk Failure To setup the device to send TCP notifications for cameras, right-click on the device in the Navigator and select Configure Device. On the Camera Tab's Event Section, select the events you would like to receive and set the schedules as appropriate. On the Camera Tab's Rules Section, for each event type, ensure that "notify me" is selected. Repeat for each event type. On the Notifications Tab, the Notify IP Address should be the IP address of where the TruVision Navigator Server service is located (Notification Processor). The Notify Port is defaulted to 5001 and is editable. Ensure this port matches the one listed on the TruVision Navigator Server - Notifications Dialog. To setup the device to send TCP notifications for the device itself (i.e. Disk Full and Disk Failure), right-click on the device in the Navigator and select Configure Device. On the Notification Tab, for each notification type, ensure that "notify me" is selected. Repeat for each notification type and click Save. Ensure the notification port on the device matches that of TruVision Navigator Server as described above. Restart the Notification Processor service for TruVision Navigator to process the notifications.
Health Diagnostics	IP Address MAC Address Model Name Serial Number Firmware Version Device Date/Time Total Device Health HDD Status HDD Capacity Cameras in Video Loss Cameras in Alarm Current Client Connections

Feature	TVR40
	Record Status
Firmware Upload	Yes
Bulk Firmware Upload	Yes
Device Configuration	Yes
Bulk Configuration	Yes
Remote Reboot	Yes
UTCFS - IP Camera Support	N/A
3rd Party - IP Camera Support	N/A
3rd Party - IP Camera Support	N/A

TVR60

Table 14: TVR60

Feature	TVR60
Default Ports	Video = 8000 (editable) Command and Control = 8000 (editable) Configuration = 8000 (editable) Notifications = 5001 (editable) Firmware Upload = 8000 (editable)
Default Username / Password	admin 1234 We recommend changing this default password at time of installation.
Default IP Address	192.168.1.82
Compression	H.264
Connection Types	TCP UDP
Streaming Limits	48 Live or Playback streams simultaneously with a maximum of 6 streams per channel. If connection lease is transferred among users when connection limit is reached, the user whose connection is taken will be disconnected from the device and all videos closed - see Connection Manager.
Stream Overlay	Camera Name Date and Time
High / Low Bandwidth	No
Dual Streaming	Yes
Stream Nomenclature	The Main stream is referred to as: On-Screen-Display = Time Lapse Web Browser = Time Lapse TruVision Navigator = Main stream The Sub stream is referred to as: On-Screen-Display = Alarm Web Browser = Alarm TruVision Navigator = Sub stream The Event stream is referred to as: On-Screen-Display = N/A Web Browser = Event

Feature	TVR60
	TruVision Navigator = Event The Schedule stream is referred to as: On-Screen-Display = Schedule Web Browser = Schedule TruVision Navigator = Schedule
Playback Controls	Play Pause Frame Advance Fast Forward (2x,4x,8x,16x) Frame Reverse, Rewind, and Playback Speeds are not supported. Video jumps back 4 seconds after resume playback from Fast Forward and Frame Advance. When fast forwarding video and it catches up to present time (or Live video), the video in the viewing tile will remain paused until the user clicks the Live button in the Viewer Toolbar. No other playback controls will work until the Live button is selected.
Digital Zoom	Playback Only
Snapshot	Yes
Local Record	Yes Pause during local record is not supported.
Instant Replay	Yes There is a 2 to 5 minute video buffer in the device. While video is in the buffer, it cannot be viewed. Once the buffer fills, the video is written to the hard drive and is available for playback. This affects Instant Replay and the Playback button in TruVision Navigator. Those 2 features get their time increment from the user-defined Instant Replay configuration on the TruVision Navigator Server Properties Tab. As a result, set this time increment to greater than 5 minutes to be safe. If you try to search for video that is still in the buffer, you will be taken to Live video.
Disk Analysis	Alarm Motion Recorded Untagged Video Loss is not supported in disk analysis. Disk analysis takes approximately 45 to 90 seconds depending on the amount of recorded data on the device.
Video Export	Yes There will be approximately 4 seconds of additional video exported prior to the specified start time.
TruVision Navigator Player	Yes .mp4 proprietary file format.
PTZ Control	Yes

Feature	TVR60
Focus, Iris, Zoom	Yes PTZ protocol GE RS-485 does not support Focus and Iris commands in this release.
Presets	Yes
Tours	Go To Record Only 1 tour is supported (which is hard coded to Tour 1 on the PTZ camera).
Camera Search	Alarm Event Motion
Smart Search	No
Point-of-Sale Text	No
Motion	Yes Get the configuration for this device via TruVision Navigator and set the active zones on a per camera basis via the Motion Configuration option associated with each camera.
Audio	Yes There are 16 audio inputs per device (1 per channel). Enabling audio on the device is a per channel setting. Access the settings by going to the device configuration, and enabling the audio option on the Recording Tab for each camera. If enabled, as soon as any camera from the device is added in the TruVision Navigator Viewer and selected, the audio will play.
Bi-directional Audio	Yes
Notifications	Alarm Video Loss Motion Disk Full Disk Failure To setup the device to send TCP notifications for cameras, right-click on the device in the Navigator and select Configure Device. On the Camera Tab's Event Section, select the events you would like to receive and set the schedules as appropriate. On the Camera Tab's Rules Section, for each event type, ensure that "notify me" is selected. Repeat for each event type. On the Notifications Tab, the Notify IP Address should be the IP address of where the TruVision Navigator Server service is located (Notification Processor). The Notify Port is defaulted to 5001 and is editable. Ensure this port matches the one listed on the TruVision Navigator Server - Notifications Dialog. To setup the device to send TCP notifications for the device itself (i.e. Disk Full and Disk Failure), right-click on the device in the Navigator and select Configure Device. On the Notification Tab, for each notification type, ensure that "notify me" is selected. Repeat for each notification type and click Save. Ensure the notification port on the device matches that of TruVision Navigator Server as described above.

Feature	TVR60
	Restart the Notification Processor service for TruVision Navigator to process the notifications.
Health Diagnostics	IP Address MAC Address Model Name Serial Number Firmware Version Device Date/Time Total Device Health HDD Status HDD Capacity Cameras in Video Loss Cameras in Alarm Current Client Connections Record Status
Firmware Upload	Yes
Bulk Firmware Upload	Yes
Device Configuration	Yes
Bulk Configuration	Yes
Remote Reboot	Yes
UTCFS - IP Camera Support	**CamPlus2 IP** GEC-IP2VD-DN GEC-IP2D GEC-IP2B **UltraView IP** UVC-IP-EVRDN-HR UVD-IP-EVRDNR UVC-IP-EVRDN-HR-P UVD-IP-EVRDNR-P UVC-IP-XP3DN-HR UVD-IP-XP3DNR UVC-IP-XP3DN-HR-P UVD-IP-XP3DNR-P **UltraView Encoder** UVE-101 **TruVision MPX** TVC-M1120-1-N TVD-M1120V-3-N TVC-M2110-1-N TVD-M2110V-3-N TVD-M2110-2-N
3rd Party - IP Camera Support	**Panasonic** NW484S NF284

Feature	TVR60
	NP-244
3rd Party - IP Camera Support	N/A

TVN20

Table 15: TVN20

Feature	TVN20
Default Ports	Video = 8000 (editable) Command and Control = 8000 (editable) Configuration = 8000 (editable) Notifications = 5001 (editable) Firmware Upload = 8000 (editable)
Default Username / Password	admin 1234 We recommend changing this default password at time of installation.
Default IP Address	192.168.1.82
Compression	H.264
Connection Types	TCP UDP
Streaming Limits	48 Live or Playback streams simultaneously with a maximum of 6 streams per channel. If connection lease is transferred among users when connection limit is reached, the user whose connection is taken will be disconnected from the device and all videos closed - see Connection Manager.
Stream Overlay	Camera Name Date and Time
High / Low Bandwidth	No
Dual Streaming	Yes
Stream Nomenclature	The Main stream is referred to as: On-Screen-Display = Time Lapse Web Browser = Time Lapse TruVision Navigator = Main stream The Sub stream is referred to as: On-Screen-Display = Alarm Web Browser = Alarm TruVision Navigator = Sub stream The Event stream is referred to as: On-Screen-Display = N/A Web Browser = Event TruVision Navigator = Event The Schedule stream is referred to as: On-Screen-Display = Schedule Web Browser = Schedule TruVision Navigator = Schedule
Playback Controls	Play Pause Frame Advance Fast Forward (2x,4x,8x,16x)

Feature	TVN20
	Frame Reverse, Rewind, and Playback Speeds are not supported. Video jumps back 4 seconds after resume playback from Fast Forward and Frame Advance. When fast forwarding video and it catches up to present time (or Live video), the video in the viewing tile will remain paused until the user clicks the Live button in the Viewer Toolbar. No other playback controls will work until the Live button is selected.
Digital Zoom	Playback Only
Snapshot	Yes
Local Record	Yes Pause during local record is not supported.
Instant Replay	Yes There is a 2 to 5 minute video buffer in the device. While video is in the buffer, it cannot be viewed. Once the buffer fills, the video is written to the hard drive and is available for playback. This affects Instant Replay and the Playback button in TruVision Navigator. Those 2 features get their time increment from the user-defined Instant Replay configuration on the TruVision Navigator Server Properties Tab. As a result, set this time increment to greater than 5 minutes to be safe. If you try to search for video that is still in the buffer, you will be taken to Live video.
Disk Analysis	Alarm Motion Recorded Untagged Video Loss is not supported in disk analysis. Disk analysis takes approximately 45 to 90 seconds depending on the amount of recorded data on the device.
Video Export	Yes There will be approximately 4 seconds of additional video exported prior to the specified start time.
TruVision Navigator Player	Yes .mp4 proprietary file format.
PTZ Control	Yes
Focus, Iris, Zoom	Yes PTZ protocol GE RS-485 does not support Focus and Iris commands in this release.
Presets	Yes
Tours	Go To Record Only 1 tour is supported (which is hard coded to Tour 1 on the PTZ camera).
Camera Search	Alarm Event

Feature	TVN20
	Motion
Smart Search	No
Point-of-Sale Text	No
Motion	Get the configuration for this device via TruVision Navigator and set the active zones on a per camera basis via the Motion Configuration option associated with each camera.
Audio	Yes There are 16 audio inputs per device (1 per channel). Enabling audio on the device is a per channel setting. Access the settings by going to the device configuration, and enabling the audio option on the Recording Tab for each camera. If enabled, as soon as any camera from the device is added in the TruVision Navigator Viewer and selected, the audio will play.
Bi-directional Audio	No
Notifications	Alarm Video Loss Motion Disk Full Disk Failure To setup the device to send TCP notifications for cameras, right-click on the device in the Navigator and select Configure Device. On the Camera Tab's Event Section, select the events you would like to receive and set the schedules as appropriate. On the Camera Tab's Rules Section, for each event type, ensure that "notify me" is selected. Repeat for each event type. On the Notifications Tab, the Notify IP Address should be the IP address of where the TruVision Navigator Server service is located (Notification Processor). The Notify Port is defaulted to 5001 and is editable. Ensure this port matches the one listed on the TruVision Navigator Server - Notifications Dialog. To setup the device to send TCP notifications for the device itself (i.e. Disk Full and Disk Failure), right-click on the device in the Navigator and select Configure Device. On the Notification Tab, for each notification type, ensure that "notify me" is selected. Repeat for each notification type and click Save. Ensure the notification port on the device matches that of TruVision Navigator Server as described above. Restart the Notification Processor service for TruVision Navigator to process the notifications.
Health Diagnostics	IP Address MAC Address Model Name Serial Number Firmware Version Device Date/Time Total Device Health HDD Status HDD Capacity Cameras in Video Loss Cameras in Alarm Current Client Connections

Feature	TVN20
	Record Status
Firmware Upload	Yes
Bulk Firmware Upload	Yes
Device Configuration	Yes
Bulk Configuration	Yes
Remote Reboot	Yes
UTCFS - IP Camera Support	**CamPlus2 IP** GEC-IP2VD-DN GEC-IP2D GEC-IP2B **UltraView IP** UVC-IP-EVRDN-HR UVD-IP-EVRDNR UVC-IP-EVRDN-HR-P UVD-IP-EVRDNR-P UVC-IP-XP3DN-HR UVD-IP-XP3DNR UVC-IP-XP3DN-HR-P UVD-IP-XP3DNR-P **UltraView Encoder** UVE-101 **TruVision MPX** TVC-M1120-1-N TVD-M1120V-3-N TVC-M2110-1-N TVD-M2110V-3-N TVD-M2110-2-N
3rd Party - IP Camera Support	**Axis** Axis 216MFD Axis 216MFD-V Axis M1114 Axis M3011 Axis M3014 Axis P1346E Axis P3301 Axis P3304 Axis P3343 Axis P3344
3rd Party - IP Camera Support	**Arecont** Arecont AV1305 Arecont AV1315 Arecont AV1355 Arecont AV2105DN Arecont AV2155 Arecont AV2805DN Arecont AV2815 Arecont AV3105 Arecont AV3155

Feature	TVN20
	Arecont AV5105 Arecont AV5155 **ACTi** ACTi TCM4301 ACTi TCM5311 ACTi TCM5611 ACTi TCM7411 **Panasonic** Panasonic NS202A Panasonic NS954 Panasonic WV-NF285 Panasonic WV-NP244 Panasonic WV-NW484S

TVN40

Table 16: TVR40

Feature	TVN40
Default Ports	Video = 3000 (editable) Command and Control = 3000 (editable) Configuration = 3000 (editable) Notifications = 4444 (un-editable) Firmware Upload = 3000 (editable) PTZ = 3000 These are the recommended ports between TruVision Navigator and the TVN40. It is not recommended to restrict ports between the TVN40 and the actual IP cameras themselves.
Default Username / Password	admin admin We recommend changing this default password at time of installation.
Default IP Address	192.168.1.2
Compression	IP Camera-dependent
Connection Types	UDP
Streaming Limits	24 Live and 9 Playback streams simultaneously
Stream Overlay	Camera Name Date / Time
High / Low Bandwidth	Yes Low bandwidth configuration may be available on both primary and alternate streams. Low bandwidth options include off, live or live+record. Stream switching is supported during playback if each stream has been configured to record.
Dual Streaming	Yes
Stream Nomenclature	N/A
Playback Controls	Play Pause

Feature	TVN40
	Frame Advance Fast Forward (2x, 4x, 8x, 16x, 32x, 64x, 128x) Frame Reverse Rewind (2x, 4x, 8x, 16x, 32x, 64x, 128x) When fast forwarding video and it catches up to present time (or Live video), the video in the viewing tile will switch to Live. If there is a difference between the PC time and the TVN40 time, there may be slight inconsistencies with the results of a seek.
Digital Zoom	Live and Playback
Snapshot	Yes
Local Record	Yes
Instant Replay	Yes
Disk Analysis	Alarm Recorded Untagged
Video Export	Yes
TruVision Navigator Player	Yes .video proprietary file format.
PTZ Control	Yes When configuring PTZ on the UltraView Encoder connected to the Legend IP camera, set the Protocol in TruVision Navigator to “Kalatel” and the protocol to GE ASCII on the physical GE Legend IP camera (Protocol #5 on list).
Focus, Iris, Zoom	Yes
Presets	Yes
Tours	No
Camera Search	Alarm
Smart Search	No
Point-of-Sale Text	No
Motion	Yes For each IP Camera, the active zone needs to be setup on the camera itself via the camera's browser. Once complete, launch the camera configuration in TruVision Navigator and ensure the Motion checkbox is enabled and click Save.
Audio	No
Bi-directional Audio	No
Notifications	Motion Video Loss Video Failure Fan Failed Disk Failed Disk Full Disk Space Low System Voltage Abnormal Temperature Network Disconnected The TVN40 is automatically configured to push its notifications to TruVision Navigator when the device is added in the Navigator. The notifications are pre-configured to be pushed over port 4444, which is

Feature	TVN40
	not editable. This port is listed as the TCP Listener Port for the TVN40 on the TruVision Navigator Server - Notifications Dialog.
Health Diagnostics	Host Name IP Address Subnet Mask Gateway MAC Address NIC Name NIC Type Equipment Name Model Name Serial Number Hardware Revision Firmware Version Build Date Device Date/Time Memory Size Number Of CPUs Number of Power Supplies Diagnostic Date/Time Device Responded Power On Duration Fan Status Device Temperature (C) Device Temperature (F) HDD Status Running Voltages Total Device Health Logical Disk Count Logical Disk Volume Name(s) Logical Disk Device Name(s) Logical Disk Number(s) Logical Disk Serial Number(s) Logical Disk(s) Total Space Logical Disk(s) Free Space Physical Disk Count Physical Disk Size(s) Physical Disk Model Name(s) Physical Disk(s) Partition Count
Firmware Upload	Yes
Bulk Firmware Upload	Yes
Device Configuration	Yes
Bulk Configuration	Yes
Remote Reboot	Yes
UTCFS - IP Camera Support	**Legend** Legend IP **CamPlus IP** GEC-IPDRH-POE GEC-IPDRH-24VA GEC-IPDRH-DN-POE GEC-IPDRH-DN-24VA **CamPlus2 IP**

Feature	TVN40
	GEC-IP2VD-DN GEC-IP2D GEC-IP2B **UltraView IP** UVC-IP-EVRDN-HR UVD-IP-EVRDNR UVC-IP-EVRDN-HR-P UVD-IP-EVRDNR-P UVC-IP-XP3DN-HR UVD-IP-XP3DNR UVC-IP-XP3DN-HR-P UVD-IP-XP3DNR-P **UltraView Encoder** UVE-101
3rd Party - IP Camera Support	**Axis** 216MFD 216MFD 211M **Panasonic** NW484S NF284 NP-244
3rd Party - IP Camera Support	N/A

GoVision 2

Table 17: GoVision 2

Feature	GoVision 2
Default Ports	Video = 8000 (editable) Command and Control = 8000 (editable) Configuration = 8000 (editable) Notifications = 5001 (editable) Firmware Upload = 8000 (editable)
Default Username / Password	admin 12345 We recommend changing this default password at time of installation.
Default IP Address	192.168.0.1
Compression	H.264
Connection Types	TCP UDP
Streaming Limits	48 Live or Playback streams simultaneously with a maximum of 6 streams per channel. If connection lease is transferred among users when connection limit is reached, the user whose connection is taken will be disconnected from the device and all videos closed - see Connection Manager.

Feature	GoVision 2
Stream Overlay	Camera Name Date and Time
High / Low Bandwidth	No
Dual Streaming	Yes
Stream Nomenclature	The Main stream is referred to as: On-Screen-Display = Normal High Web Browser = Main stream TruVision Navigator = Main stream The Sub stream is referred to as: On-Screen-Display = N/A Web Browser = Sub stream TruVision Navigator = Sub stream The Event stream is referred to as: On-Screen-Display = Event Web Browser = Event TruVision Navigator = Event The Schedule stream is referred to as: On-Screen-Display = Normal Low Web Browser = Schedule TruVision Navigator = Schedule
Playback Controls	Play Pause Frame Advance Fast Forward (2x,4x,8x,16x) Frame Reverse, Rewind, and Playback Speeds are not supported. Video jumps back 4 seconds after resume playback from Fast Forward and Frame Advance. When fast forwarding video and it catches up to present time (or Live video), the video in the viewing tile will remain paused until the user clicks the Live button in the Viewer Toolbar. No other playback controls will work until the Live button is selected.
Digital Zoom	Playback Only
Snapshot	Yes
Local Record	Yes Pause during local record is not supported.
Instant Replay	Yes There is a 2 to 5 minute video buffer in the device. While video is in the buffer, it cannot be viewed. Once the buffer fills, the video is written to the hard drive and is available for playback. This affects Instant Replay and the Playback button in TruVision Navigator. Those 2 features get their time increment from the user-defined Instant Replay configuration on the TruVision Navigator Server Properties Tab. As a result, set this time increment to greater than 5 minutes to be safe. If you try to search for video that is still in the buffer, you will be taken to Live video.
Disk Analysis	Alarm

Feature	GoVision 2
	Motion Recorded Untagged Video Loss is not supported in disk analysis. Disk analysis takes approximately 45 to 90 seconds depending on the amount of recorded data on the device.
Video Export	Yes There will be approximately 4 seconds of additional video exported prior to the specified start time.
TruVision Navigator Player	Yes .mp4 proprietary file format.
PTZ Control	Yes
Focus, Iris, Zoom	Yes PTZ protocol GE RS-485 does not support Focus and Iris commands in this release.
Presets	Yes
Tours	No
Camera Search	Alarm Event Motion
Smart Search	No
Point-of-Sale Text	No
Motion	Yes Get the configuration for this device via TruVision Navigator and set the active zones on a per camera basis via the Motion Configuration option associated with each camera.
Audio	Yes Get the configuration for this device via TruVision Navigator and set the active zones on a per camera basis via the Motion Configuration option associated with each camera.
Bi-directional Audio	Yes
Notifications	Alarm Video Loss Motion Disk Full Disk Failure To setup the device to send TCP notifications for cameras, right-click on the device in the Navigator and select Configure Device. On the Camera Tab's Event Section, select the events you would like to receive and set the schedules as appropriate. On the Camera Tab's Rules Section, for each event type, ensure that "notify me" is selected. Repeat for each event type. On the Notifications Tab, the Notify IP Address should be the IP address of where the TruVision Navigator Server service is located (Notification Processor). The Notify Port is defaulted to 5001 and is editable. Ensure this port

Feature	GoVision 2
	matches the one listed on the TruVision Navigator Server - Notifications Dialog. To setup the device to send TCP notifications for the device itself (i.e. Disk Full and Disk Failure), right-click on the device in the Navigator and select Configure Device. On the Notification Tab, for each notification type, ensure that “notify me” is selected. Repeat for each notification type and click Save. Ensure the notification port on the device matches that of TruVision Navigator Server as described above. Restart the Notification Processor service for TruVision Navigator to process the notifications.
Health Diagnostics	IP Address MAC Address Model Name Serial Number Firmware Version Device Date/Time Total Device Health HDD Status HDD Capacity Cameras in Video Loss Cameras in Alarm Current Client Connections Record Status
Firmware Upload	Yes
Bulk Firmware Upload	Yes
Device Configuration	Yes
Bulk Configuration	Yes
Remote Reboot	Yes
UTCFS - IP Camera Support	N/A
3rd Party - IP Camera Support	**HikVision** HikVision DS-2CD702PF-E HikVision DS-2CD702NF-E HikVision DS-2CD712PF-E HikVision DS-2CD712NF-E HikVision DS-2CD732F-E HikVision DS-2CD792PF-E HikVision DS-2CD792NF-E HikVision DS-2CD802PF-E HikVision DS-2CD802NF-E HikVision DS-2CD812PF-E HikVision DS-2CD812NF-E HikVision DS-2CD832F-E HikVision DS-2CD892PF-E HikVision DS-2CD892NF-E HikVision DS-2CD852MF-E HikVision DS-2CD862MF-E HikVision DS-2CD752MF-E HikVision DS-2CD762MF-E
3rd Party - IP Camera Support	N/A

GoVision

Table 18: GoVision

Feature	GoVision
Default Ports	Video = 8000 (editable) Command and Control = 8000 (editable) Configuration = 8000 (editable) Notifications = 5001 (editable) Firmware Upload = 8000 (editable)
Default Username / Password	admin 12345 We recommend changing this default password at time of installation.
Default IP Address	192.0.0.64
Compression	H.264
Connection Types	TCP UDP
Streaming Limits	48 Live or Playback streams simultaneously with a maximum of 6 streams per channel. If connection lease is transferred among users when connection limit is reached, the user whose connection is taken will be disconnected from the device and all videos closed - see Connection Manager.
Stream Overlay	Camera Name Date and Time
High / Low Bandwidth	No
Dual Streaming	Yes
Stream Nomenclature	The Main stream is referred to as: On-Screen-Display = Cont HQ Web Browser = Main stream TruVision Navigator = Main stream The Sub stream is referred to as: On-Screen-Display = N/A Web Browser = Sub stream TruVision Navigator = Sub stream The Event stream is referred to as: On-Screen-Display = Event Web Browser = Event TruVision Navigator = Event The Schedule stream is referred to as: On-Screen-Display = Cont LQ Web Browser = Schedule TruVision Navigator = Schedule
Playback Controls	Play Pause Frame Advance Fast Forward (2x,4x,8x,16x) Frame Reverse, Rewind, and Playback Speeds are not supported. Video jumps back 4 seconds after resume playback from Fast Forward and Frame Advance.

Feature	GoVision
	When fast forwarding video and it catches up to present time (or Live video), the video in the viewing tile will remain paused until the user clicks the Live button in the Viewer Toolbar. No other playback controls will work until the Live button is selected.
Digital Zoom	Playback Only
Snapshot	Yes
Local Record	Yes Pause during local record is not supported.
Instant Replay	Yes There is a 2 to 5 minute video buffer in the device. While video is in the buffer, it cannot be viewed. Once the buffer fills, the video is written to the hard drive and is available for playback. This affects Instant Replay and the Playback button in TruVision Navigator. Those 2 features get their time increment from the user-defined Instant Replay configuration on the TruVision Navigator Server Properties Tab. As a result, set this time increment to greater than 5 minutes to be safe. If you try to search for video that is still in the buffer, you will be taken to Live video.
Disk Analysis	Alarm Motion Recorded Untagged Video Loss is not supported in disk analysis. Disk analysis takes approximately 45 to 90 seconds depending on the amount of recorded data on the device.
Video Export	Yes There will be approximately 4 seconds of additional video exported prior to the specified start time.
TruVision Navigator Player	Yes .mp4 proprietary file format.
PTZ Control	Yes
Focus, Iris, Zoom	Yes PTZ protocol GE RS-485 does not support Focus and Iris commands in this release.
Presets	Yes
Tours	No
Camera Search	Alarm Event Motion
Smart Search	No
Point-of-Sale Text	No
Motion	Yes Get the configuration for this device via TruVision Navigator and set the active zones on a per camera basis via the Motion Configuration

Feature	GoVision
	option associated with each camera.
Audio	Yes Get the configuration for this device via TruVision Navigator and set the active zones on a per camera basis via the Motion Configuration option associated with each camera.
Bi-directional Audio	Yes
Notifications	Alarm Video Loss Motion Disk Full Disk Failure To setup the device to send TCP notifications for cameras, right-click on the device in the Navigator and select Configure Device. On the Camera Tab's Event Section, select the events you would like to receive and set the schedules as appropriate. On the Camera Tab's Rules Section, for each event type, ensure that "notify me" is selected. Repeat for each event type. On the Notifications Tab, the Notify IP Address should be the IP address of where the TruVision Navigator Server service is located (Notification Processor). The Notify Port is defaulted to 5001 and is editable. Ensure this port matches the one listed on the TruVision Navigator Server - Notifications Dialog. To setup the device to send TCP notifications for the device itself (i.e. Disk Full and Disk Failure), right-click on the device in the Navigator and select Configure Device. On the Notification Tab, for each notification type, ensure that "notify me" is selected. Repeat for each notification type and click Save. Ensure the notification port on the device matches that of TruVision Navigator Server as described above. Restart the Notification Processor service for TruVision Navigator to process the notifications.
Health Diagnostics	IP Address MAC Address Model Name Serial Number Firmware Version Device Date/Time Total Device Health HDD Status HDD Capacity Cameras in Video Loss Cameras in Alarm Current Client Connections Record Status
Firmware Upload	Yes
Bulk Firmware Upload	Yes
Device Configuration	Yes
Bulk Configuration	Yes
Remote Reboot	Yes
UTCFS - IP Camera Support	N/A

Feature	GoVision
3rd Party - IP Camera Support	N/A
3rd Party - IP Camera Support	N/A

DVSRx U

Table 19: DVSRxU

Feature	DVSRxU
Default Ports	Video = 8000 (editable) Command and Control = 8000 (editable) Configuration = 8000 (editable) Notifications = 5001 (editable) Firmware Upload = 8000 (editable)
Default Username / Password	Administrator 3477 We recommend changing this default password at time of installation.
Default IP Address	192.168.1.10
Compression	H.264
Connection Types	TCP UDP
Streaming Limits	24 Live or Playback streams simultaneously with a maximum of 6 streams per channel. If connection lease is transferred among users when connection limit is reached, the user whose connection is taken will be disconnected from the device and all videos closed - see Connection Manager.
Stream Overlay	Camera Name Date and Time
High / Low Bandwidth	No
Dual Streaming	Yes
Stream Nomenclature	The Main stream is referred to as: On-Screen-Display = Schedule Web Browser = Main stream TruVision Navigator = Main stream The Sub stream is referred to as: On-Screen-Display = N/A Web Browser = Sub stream TruVision Navigator = Sub stream The Event stream is referred to as: On-Screen-Display = Event Web Browser = Event TruVision Navigator = Event The Time Lapse stream is referred to as: On-Screen-Display = Time Lapse Web Browser = Time Lapse TruVision Navigator = Time Lapse The Sub stream, Event, and Time Lapse streams are derivative configurations of the Main stream.

Feature	DVSRxU
	Typically, the Main stream is recorded on a schedule, the Event stream is recorded on Event, the Time Lapse stream is recorded continuously, and the Sub stream can be viewed Live
Playback Controls	Play Pause Frame Advance Fast Forward (2x,4x) Frame Reverse, Rewind, and Playback Speeds are not supported. Video jumps back 4 seconds after resume playback from Fast Forward and Frame Advance. When fast forwarding video and it catches up to present time (or Live video), the video in the viewing tile will remain paused until the user clicks the Live button in the Viewer Toolbar. No other playback controls will work until the Live button is selected.
Digital Zoom	Playback Only
Snapshot	Yes
Local Record	Yes Pause during local record is not supported.
Instant Replay	Yes There is a 2 to 5 minute video buffer in the device. While video is in the buffer, it cannot be viewed. Once the buffer fills, the video is written to the hard drive and is available for playback. This affects Instant Replay and the Playback button in TruVision Navigator. Those 2 features get their time increment from the user-defined Instant Replay configuration on the TruVision Navigator Server Properties Tab. As a result, set this time increment to greater than 5 minutes to be safe. If you try to search for video that is still in the buffer, you will be taken to Live video.
Disk Analysis	Alarm Motion Recorded Untagged Video Loss is not supported in disk analysis. Disk analysis takes approximately 45 to 90 seconds depending on the amount of recorded data on the device.
Video Export	Yes There will be approximately 4 seconds of additional video exported prior to the specified start time.
TruVision Navigator Player	Yes .mp4 proprietary file format.
PTZ Control	Yes
Focus, Iris, Zoom	Yes

Feature	DVSRxU
	PTZ protocol GE RS-485 does not support Focus and Iris commands in this release.
Presets	Yes
Tours	Go To Record Only 1 tour is supported (which is hard coded to Tour 1 on the PTZ camera).
Camera Search	Alarm Event Motion Text
Smart Search	No
Point-of-Sale Text	Yes Overlay on video only (via the Settings Dialog - In Band setting)
Motion	Yes Get the configuration for this device via TruVision Navigator and set the active zones on a per camera basis via the Motion Configuration option associated with each camera.
Audio	Yes There are 16 audio inputs per device (1 per channel). Enabling audio on the device is a per channel setting. Access the settings by going to the device configuration, and enabling the audio option on the Recording Tab for each camera. If enabled, as soon as any camera from the device is added in the TruVision Navigator Viewer and selected, the audio will play.
Bi-directional Audio	Yes
Notifications	Alarm Video Loss Motion Disk Full Disk Failure To setup the device to send TCP notifications for cameras, right-click on the device in the Navigator and select Configure Device. On the Camera Tab's Event Section, select the events you would like to receive and set the schedules as appropriate. On the Camera Tab's Rules Section, for each event type, ensure that "notify me" is selected. Repeat for each event type. On the Notifications Tab, the Notify IP Address should be the IP address of where the TruVision Navigator Server service is located (Notification Processor). The Notify Port is defaulted to 5001 and is editable. Ensure this port matches the one listed on the TruVision Navigator Server - Notifications Dialog. To setup the device to send TCP notifications for the device itself (i.e. Disk Full and Disk Failure), right-click on the device in the Navigator and select Configure Device. On the Notification Tab, for each notification type, ensure that "notify me" is selected. Repeat for each notification type and click Save. Ensure the notification port on the device matches that of TruVision Navigator Server as described

Feature	DVSRxU
	above. Restart the Notification Processor service for TruVision Navigator to process the notifications.
Health Diagnostics	IP Address MAC Address Model Name Serial Number Firmware Version Device Date/Time Total Device Health HDD Status HDD Capacity Cameras in Video Loss Cameras in Alarm Current Client Connections Record Status
Firmware Upload	Yes
Bulk Firmware Upload	Yes
Device Configuration	Yes
Bulk Configuration	Yes
Remote Reboot	Yes
UTCFS - IP Camera Support	N/A
3rd Party - IP Camera Support	N/A
3rd Party - IP Camera Support	N/A

SymDec/SymSafe

Table 20: SymDec / SymSafe

Feature	SymDec / SymSafe
Default Ports	Video = 5858 for TCP or 8100 to 8115 for UDP (editable) Command and Control = 1024 (editable) Configuration = 1024 (editable) Notifications = 1027 (editable) Firmware Upload = 1024 (editable)
Default Username / Password	Front Panel: user 1 / 111111 user 2 / 222222 user 3 / 333333
Default IP Address	192.168.1.82
Compression	MPEG4
Connection Types	Reverse TCP Reverse TCP I-frame UDP
Streaming Limits	32 Live and 16 Playback streams simultaneously This is however further restricted by the bandwidth maximum of 32 * 3MB/sec. Example: When all cameras are full D1 30FPS/ High quality (3MBs), you can only have 32 streams (i.e. 16 Live, 16 Playback). When you change the frame rate/resolution/quality to low

Feature	SymDec / SymSafe
	(1MB/s), 32 Live+16 Playback can be achieved. See Connection Manager and Connection Priority.
Stream Overlay	Camera Name Date and Time Bit rate Alarm Detection
High / Low Bandwidth	Yes Low bandwidth is only I-frames. High bandwidth is I and P-frames.
Dual Streaming	No
Stream Nomenclature	N/A
Playback Controls	Play Pause Frame Advance Fast Forward (4x,8x,16x,32x,,64x,100x, 300x) Frame Reverse Rewind (4x,8x,16x,32x,,64x,100x, 300x) When fast forwarding video and it catches up to present time (or Live video), the video in the viewing tile pauses and will resume fast forward as video becomes available.
Digital Zoom	No
Snapshot	Yes
Local Record	Yes
Instant Replay	Yes
Disk Analysis	Alarm Motion Video Loss Recorded Untagged
Video Export	Yes
TruVision Navigator Player	Yes .mpc proprietary file format
PTZ Control	Yes
Focus, Iris, Zoom	Yes
Presets	Yes
Tours	Go To Record 16 tours are supported
Camera Search	Alarm Event Motion Text Text Search is not available on SymDec 1
Smart Search	Yes
Point-of-Sale Text	Yes Overlay on video or placed next to the video (via the Settings Dialog - In Band or Out of Band setting)
Motion	Yes

Feature	SymDec / SymSafe
	Get the configuration for these devices via TruVision Navigator and set the active zones on a per camera basis via the Motion Detection Tabs associated with each camera.
Audio	Yes There are 2 (SymSafe) or 4 (SymDec) audio inputs per device that are mapped to Cameras 1 to 2 or 1 to 4 respectively. Microphones would need to be in the locations with those cameras. Enabling audio on the device is a per channel setting. Access the setting by going to the camera configuration, and enabling the audio option on the Recording Tab. If enabled, you can hear audio by adding that camera in the Viewer and selecting it. Audio will only play for the selected camera.
Bi-directional Audio	Yes
Notifications	Alarm Video Loss Disk Full Disk Failed Authentication Lock Up Device Powered Up Fan Failed Abnormal Temperature To setup a SymSafe or SymDec16 to send TCP notifications, get the configuration of the device. Under the Network menu, go to Network Notification and make sure each notification on the page is set to TCP. Under Notification Setup, make sure the Alarm Server 1 is set to the IP address of where the TruVision Navigator Server service is located (Notification Processor). Set the Alarm port as the same port (TCP Listener Port) you set on the Notifications Dialog of the TruVision Navigator Server. Click Save for the device configuration changes to be sent to the device. Restart the TruVision Navigator Notification Processor Service via the Services dialog in TruVision Navigator. To setup a SymDec 1 or 4 to send SMTP notifications, get the configuration of the device. Under the Alarm menu, go to Email. Enable each of the notifications using the radio buttons. Set the SMTP Server to the IP address of where the TruVision Navigator Server service is located (Notification Processor). Set the SMTP port as the same port (Email Listener Port) you set on the Notifications Dialog of the TruVision Navigator Server. Click Save for the device configuration changes to be sent to the device. Restart the Notification Processor service for TruVision Navigator to process the notifications.
Health Diagnostics	IP Address MAC Address Model Name Serial Number Firmware Version Device Date/Time Total Device Health Device Temperature (C) Device Temperature (F) HDD Status

Feature	SymDec / SymSafe
	HDD Temperature (C) HDD Temperature (F) HDD Capacity (Gb) Fan Status Cameras in Video Loss Cameras in Alarm Current Client Connections Record Status First Recorded Video Latest Recorded Video Record Time Left (hours) Video Stored (days) Video Stored (hours) Power on Duration Device Export Time Left
Firmware Upload	Yes
Bulk Firmware Upload	Yes
Device Configuration	Yes
Bulk Configuration	Yes
Remote Reboot	Yes
UTCFS - IP Camera Support	N/A
3rd Party - IP Camera Support	N/A
3rd Party - IP Camera Support	N/A

DVMRe/StoreSafe

Table 21: DVMRe / StoreSafe

Feature	DVMRe / StoreSafe
Default Ports	Video = 1024 (editable) Command and Control = 1024 (editable) Configuration = 1024 (editable) Notifications = 1027 (editable) Firmware Upload = 1024 (editable)
Default Username / Password	Front Panel: Username: N/A Password: 3477 for 8 or 16 channel / 3444 for 4 channel
Default IP Address	3.18.173.10
Compression	Wavelet
Connection Types	TCP
Streaming Limits	16 Live and 1 Playback streams simultaneously
Stream Overlay	Camera Name Date and Time Alarm Detection
High / Low Bandwidth	Yes High bandwidth is color video and Low Bandwidth is black and white video.
Dual Streaming	No
Stream Nomenclature	N/A
Playback Controls	Play

Feature	DVMRe / StoreSafe
	Pause Frame Advance Fast Forward (4x,8x,16x,32x,,64x,100x, 300x) Frame Reverse Rewind (4x,8x,16x,32x,,64x,100x, 300x) Adjustable Playback Speed When fast forwarding video and it catches up to present time (or Live video), the video in the viewing tile will begin to play at the beginning of the recorded video.
Digital Zoom	No
Snapshot	Yes
Local Record	Yes
Instant Replay	Yes
Disk Analysis	Alarm Motion Video Loss Recorded Untagged
Video Export	Yes
TruVision Navigator Player	Yes .wvf proprietary file format
PTZ Control	Yes
Focus, Iris, Zoom	Yes
Presets	Yes
Tours	No
Camera Search	Alarm Event Motion Text However, Text Search is not available on the DVMRe CS, DVMRe CD, DSR, or DVSE models.
Smart Search	Yes
Point-of-Sale Text	Yes Overlay on video or placed next to the video (via the Settings Dialog - In Band or Out of Band setting)
Motion	Yes Get the configuration for these devices via TruVision Navigator and set the active zones on a per camera basis via the Motion Detection Tabs associated with each camera.
Audio	Yes An audio module is required in these units. There is 1 audio input per device. That input can be mapped to any camera on the device simply by where the microphone is located. Enabling audio on the device is a global setting. Access the setting by going to the device configuration, and enabling the G711 audio option on the Audio Setup Tab. If enabled, as soon as any camera from the device is added in the TruVision Navigator Viewer, the audio will play.
Bi-directional Audio	No
Notifications	Alarm

Feature	DVMRe / StoreSafe
	Video Loss Disk Full Disk Failed Authentication Lock Up Device Powered Up Fan Failed Abnormal Temperature DVMRe Pro, DVMRe CT or DVMRe CTII - to setup these devices to send TCP notifications, get the configuration of the device. Under the Alarm menu, go to Notification and make sure the notification method on the page is set to TCP. Enable each of the notifications using the radio buttons. Set the Primary host to the IP address of where the TruVision Navigator Server service is located (NotificationProcessor). Set the port as the same port as you set on Notifications Dialog of the TruVision Navigator Server. Click Save for the device configuration changes to be sent to the device. Restart the TruVision Navigator Notification Processor Service via the Services dialog in TruVision Navigator. DVMRe ezT, StoreSafe, StoreSafe Pro, and StoreSafe Pro II - to setup these devices to send SMTP notifications, get the Configuration of the device. Under the Alarm menu, go to Notification and make sure the notification method on the page is set to Email. Enable each of the notifications using the radio buttons. Set the SMTP Server to the IP address of where the TruVision Navigator Server service is located (NotificationProcessor). Set the SMTP port as the same port as you set on Notifications Dialog – Email Listener Port of the TruVision Navigator Server. Click Save to push the configuration to the device. Restart the Notification Processor service for TruVision Navigator to process the notifications. No Notifications Available for - DSR, DVSE, DVMRe CS, and DVMRe CD.
Health Diagnostics	IP Address MAC Address Model Name Serial Number Firmware Version Device Time/Date HDD Capacity (Gb) Cameras in Video Loss Cameras in Alarm Current Client Connections Record Status Record Time Left Video Stored (Hours) Power on Duration Device Export Time Left
Firmware Upload	No Remote firmware uploads must be done from the device's web browser and not via TruVision Navigator. This includes all DVMRe models, all StoreSafe models, the DSR, and the DVSE.

Feature	DVMRe / StoreSafe
Bulk Firmware Upload	No
Device Configuration	Yes For certain models - DVMRe CS, DVMRe CD, DVSE, and DSR, configuration must be done via the device's web browser and not via TruVision Navigator.
Bulk Configuration	No
Remote Reboot	No
UTCFS - IP Camera Support	N/A
3rd Party - IP Camera Support	N/A
3rd Party - IP Camera Support	N/A

Appendix B
Platform Out of Box Experience (OOBE)

Summary

TruVision Navigator provides the user a single, normalized core video user experience across several different video platforms. Just as the user experience is normalized, the OOBE also needs to be normalized to ensure installers and end-users have a consistent experience in setting up a working TruVision Navigator system comprised of multiple different platforms. TruVision Navigator now supports analog DVRs, hybrid DVRs (both analog and IP), and NVRs.

Digital Video Recorders

STEP 1 – INSTALL DEVICE
Install recording device on network
Apply IP address via the device's browser or on-screen-display (OSD)
Make other device-level configurations from OSD
STEP 2 – INSTALL CAMERAS
Install analog cameras
Physically connect cameras to device
Make camera configurations from device OSD
STEP 3 – INSTALL TRUVISION NAVIGATOR
Install TruVision Navigator as Standalone or Client/Server
STEP 4 – ADD DEVICE IN TRUVISION NAVIGATOR
Add device via "Add Device" Form
Analog Cameras that were physically connected to the device in Step 2 will automatically show up under the device in the Navigator
STEP 5 – ADDITIONAL CONFIGURATIONS

Make additional device configurations remotely via TruVision Navigator's "Configuration" Form as needed

Make additional analog camera configurations remotely via TruVision Navigator's "Configuration" Form as needed

Hybrid Digital Video Recorders

STEP 1 – INSTALL DEVICE

Install device on network

Apply IP address via the device's browser or on-screen-display (OSD)

Make other device-level configurations from OSD

STEP 2 – INSTALL CAMERAS

Install analog cameras

Physically connect cameras to device

Make analog camera configurations from device OSD

Install IP cameras on network

Apply IP address

Add IP camera to the device via the device OSD

Configure IP camera via the device OSD

Install UltraView Encoders and IP cameras on network

Apply IP address and NTSC or PAL configuration via the camera browser

Add UltraView Encoders and IP cameras to the device via the device OSD

STEP 3 – INSTALL TRUVISION NAVIGATOR

Install TruVision Navigator as Standalone or Client/Server

STEP 4 – ADD DEVICE IN TRUVISION NAVIGATOR

Add device via "Add Device" Form

Analog Cameras that were physically connected to the device in Step 2 will automatically show up under the device in the Navigator

IP Cameras that were added via the device OSD in Step 2 will automatically show up under the device in the Navigator

UltraView Encoders and IP cameras that were added via the device OSD in Step 2 will automatically show up under the device in the Navigator

STEP 5 – ADDITIONAL CONFIGURATIONS

Make additional device configurations remotely via TruVision Navigator's "Configuration" Form as needed

Make additional analog camera configurations remotely via TruVision Navigator's "Configuration" Form as needed

Make additional IP camera configurations remotely via the IP camera's web browser as needed (IP camera browser can be launched from within TruVision Navigator's "Configuration" Form)

Make additional UltraView Encoder and IP camera configurations remotely via TruVision Navigator's "Configuration" Form as needed

Network Video Recorder – TVN20

STEP 1 – INSTALL DEVICE
Install device on network
Apply IP address via the device's browser or on-screen-display (OSD)
Make other device-level configurations from OSD
STEP 2 – INSTALL CAMERAS
Install IP cameras on network
Apply IP address
Add IP camera to the device via the device OSD
Configure IP camera via the device OSD
Install UltraView Encoders and IP cameras on network
Apply IP address and NTSC or PAL configuration via the camera browser
Add UltraView Encoders and IP cameras to the device via the device OSD
STEP 3 – INSTALL TRUVISION NAVIGATOR
Install TruVision Navigator as Standalone or Client/Server
STEP 4 – ADD DEVICE IN TRUVISION NAVIGATOR
Add device via "Add Device" Form
IP Cameras that were added via the device OSD in Step 2 will automatically show up under the device in the Navigator
UltraView Encoders and IP cameras that were added via the device OSD in Step 2 will automatically show up under the device in the Navigator
STEP 5 – ADDITIONAL CONFIGURATIONS
Make additional device configurations remotely via TruVision Navigator's "Configuration" Form as needed
Make additional IP camera configurations remotely via the IP camera's web browser as needed (IP camera browser can be launched from within TruVision Navigator's "Configuration" Form)
Make additional UltraView Encoder and IP camera configurations remotely via TruVision Navigator's "Configuration" Form as needed

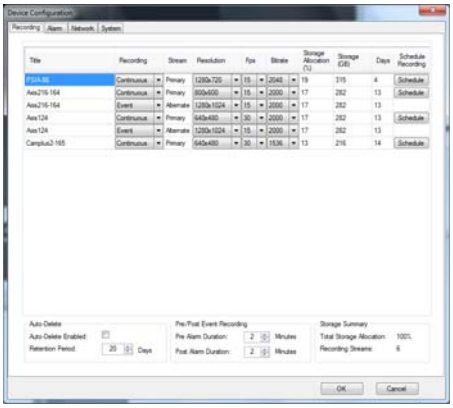
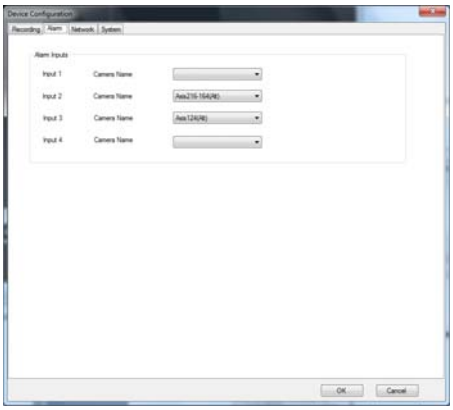
Network Video Recorder – TVN40

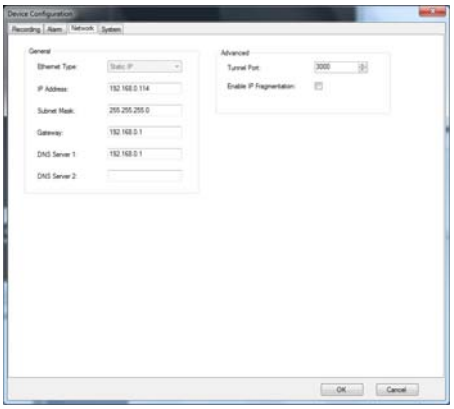
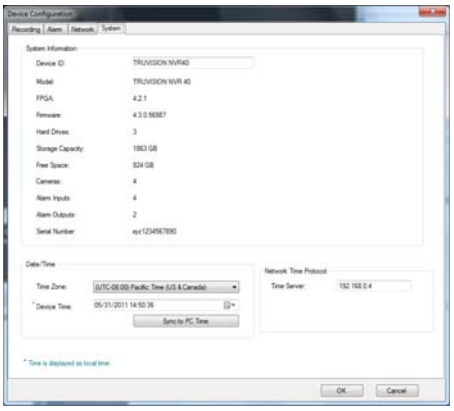
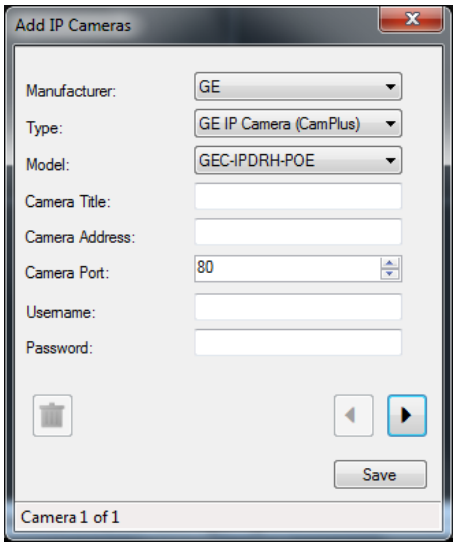
STEP 1 – INSTALL DEVICE
Install device on network
Apply IP address via the device's browser
STEP 2 – INSTALL CAMERAS

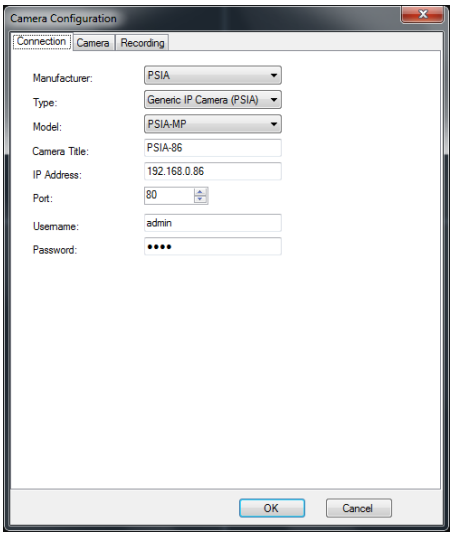
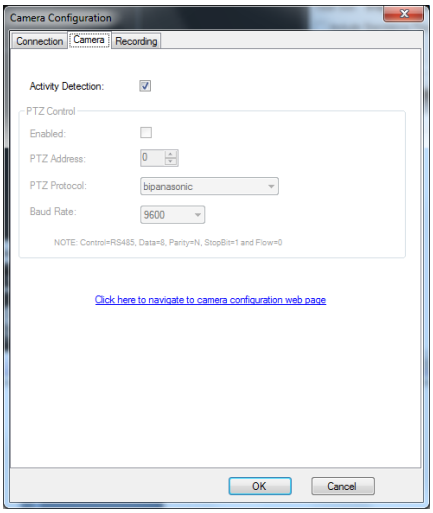
Install IP cameras on network Apply IP address
Install UltraView Encoders and IP cameras on network Apply IP address and NTSC or PAL configuration via the camera browser
STEP 3 – INSTALL TRUVISION NAVIGATOR
Install TruVision Navigator as Standalone or Client/Server Enable TruVision Navigator's Network Time Protocol (NTP) Service
STEP 4 – ADD DEVICE IN TRUVISION NAVIGATOR
Add device via "Add Device" Form
Add the installed IP cameras to the device via TruVision Navigator's "Add IP Camera" Form
Add the installed UltraView Encoders and IP cameras to the device via TruVision Navigator's "Add IP Camera" Form
STEP 5 – ADDITIONAL CONFIGURATIONS
Make additional device configurations remotely via TruVision Navigator's "Configuration" Form as needed
Make additional IP camera configurations remotely via TruVision Navigator's "Configuration" Form as needed
Make additional UltraView Encoder and IP camera configurations remotely via TruVision Navigator's "Configuration" Form as needed

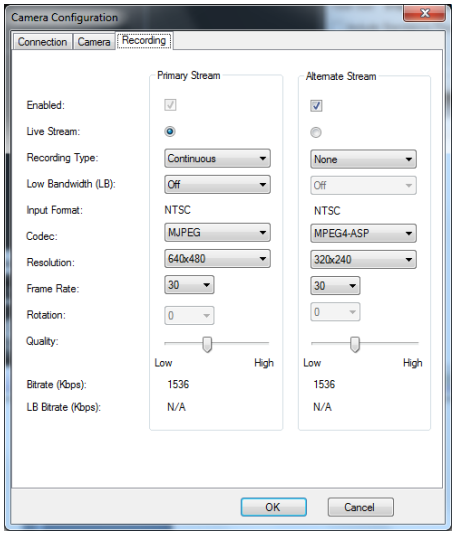
Feature	Support	Notes
How to assign the TVN40 an IP Address	The TruVision NVR 40 is designed for configuration and installation through an Ethernet network. Follow these steps to change the TVN40's default IP Address for use on your network. Launch your web browser and connect to the TVN40 via its default IP Address of 192.168.1.2. Access the device configuration window, by selecting Administration from the main menu. Enter username: admin and Password: admin on the login screen. Select the Network Configuration icon. Enter the appropriate network configurations. Click the Apply button at the bottom of the window, to confirm the configuration. Restart the NVR 40 unit by clicking Restart on the Web server main menu. Allow 3-5 minutes for the restart to complete. Verify that you can connect to the Web server using the new settings. Your TVN40 is now ready to be added to TruVision Navigator.	 

Feature	Support	Notes
How to add the TVN40 to TruVision Navigator	TruVision Navigator requires the TVN40 and its associated IP Cameras to be synched to a common time. If the devices have disparate times, problems will occur during playback and disk analysis. To maintain time synchronization, TruVision Navigator features an internal NTP Service that should be enabled before you add the TVN40/IP Cameras. Please ensure the TruVision Navigator NTP Service is enabled via the Services dialog in TruVision Navigator. The TruVision Navigator NTP Service can also synch with an external Reference Time Server to maintain the accuracy of the entire TruVision Navigator environment. When no external Reference Time Server is used, the TruVision Navigator time may drift by a several seconds over a given year. To avoid the drift, the TruVision Navigator Server can be connected to an external Reference Time Server such as time.windows.com or time.nist.gov. Login to TruVision Navigator. If you are logging in for the first time, use the default credentials of Username = admin and Password = admin To add the TVN40, click on the Add Device button in the Navigator. Fill out the Add Device form as required. You should now see the TVN40 populated in the Navigator with NO cameras underneath it. Only after you configure the TVN40 and add the IP Cameras to the TVN40, will you see cameras underneath the device.	

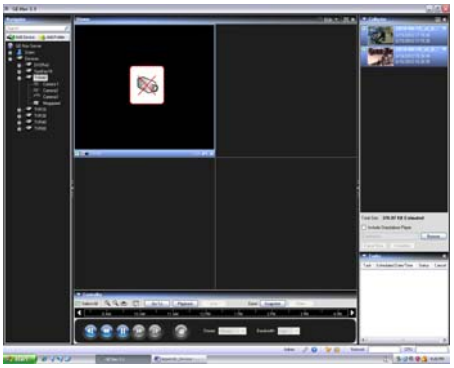
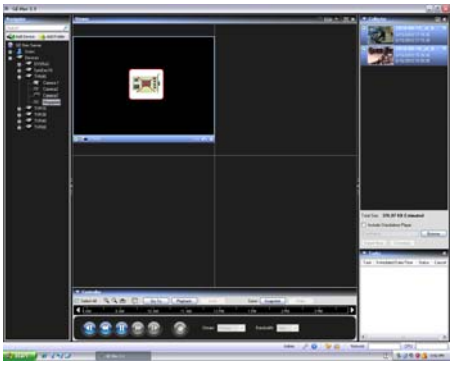
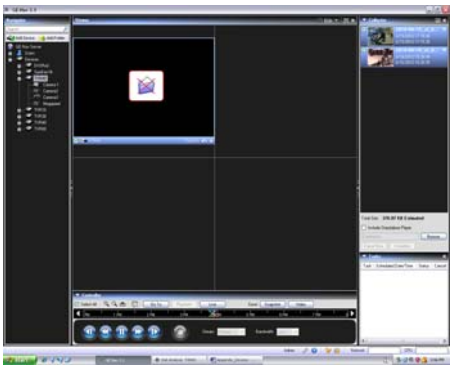
Feature	Support	Notes
How to configure the TVN40	To configure the TVN40 right-click on the device in the Navigator and select Configure Device. The TVN40 Configuration dialog will open. There are 4 tabs on this Configuration Form: Recording, Alarm, Network, and System. The dialog will store your changes as you toggle from one tab to another. Please make all of your configurations on the tabs first and then click Save once. This will save you time by sending all of the changes at one time to the unit.	
The Recording Tab	Recording Summary – provides the user an overall recording summary for the device based upon what has been configured. Storage Estimation –number of days of storage based upon total device bandwidth usage. Camera Stream Detail – provides the user a summary by stream of the configuration details. Pre and Post Event Recording - select the minutes here for pre and post event recording. Auto Delete- set the retention period for recorded video for the TVN40.	
The Alarm Tab	There are four alarm inputs on the TVN40 that can be configured to trigger the associated IP Cameras for Event recording. These fields will not be initially populated as designated IP Cameras must be configured to record on Event before these menus will be populated. Once this has been completed, the appropriate IP Cameras will appear as values in the dropdown box next to each input. They can then be associated to inputs. Remember to come back to this form after you setup your IP Cameras to associate the inputs.	

Feature	Support	Notes
The Network Tab	Enter network data here including: IP Address and other network credentials. Tunnel Port - This is the sole port used for communication, command and control, and video transmission between TruVision Navigator and the TVN40. 3000 is the default but it can be edited here.	
The System Tab	The System tab contains un-editable, firmware version information for the TVN40, system time parameters and NTP settings. NTP Server Address - THIS IS A MANDATORY FIELD! After you have activated the TruVision Navigator Server's NTP Service, enter the IP Address of the TruVision Navigator Server here. See the TruVision Navigator User Manual on NTP for more information.	
How to add IP Cameras on the TVN40	Once you have successfully configured the TVN40, right-click on the TVN40 and select Add Cameras. The Add Cameras dialog will appear. This form is designed to quickly add IP Cameras to the system WITHOUT having to do deep configuration of the IP Camera upon time of addition. We have selected default configurations for each IP Camera that keep the bit rates low enough to allow for video viewing on most networks. Users can go back after the cameras have been added and viewed to make changes to those default settings as required. This design allows for users to quickly get up and running and view video - IP Camera configuration tweaks can be made after that.	

Feature	Support	Notes
How to change the default configurations of the IP Cameras on the TVN40	If you would like to tweak the default configurations of the IP Cameras after they have been added, right-click on the camera and select Configure Camera. The Camera Configuration Form will open in a dialog with 3 tabs – Connection, Camera, and Recording.	
The Connection Tab	This tab lists all connection meta data for the camera including IP Address, Port, Username, Password, etc… Edit any of the fields that you previously entered on the Add Camera form.	
The Camera Tab	Activity Detection - enable motion detection for the camera with this checkbox. Go to the camera's web page to set up the Region of Interest for the field of view per the link. PTZ Control – if this is a PTZ camera, make the appropriate PTZ settings here. The form will store your changes as you toggle from one tab to another. Please make all of your configurations on the tabs first and then click OK once. This will save you time in sending all of the changes at one time to the unit.	

Feature	Support	Notes
The Recording Tab	Enabled - For applicable cameras, you will have the ability to enable an Alternate Stream. Live Stream - if there is an Alternate Stream, you will have the ability to designate, which one you would like to use for Live Video. Recording Type - Continuous, Event, or None. Low Bandwidth – enable the primary or alternate stream for low bandwidth functions including Live, Live+Recorded, or Off. Video Format, Codec, Resolution, Frame Rate, and Quality are all configurations that will affect the bit rate of the streams. Keep in mind the bandwidth impacts of the bit rates.	

Feature	Support	Notes
What are the options in the TVN40 context menu	When you right-click on a device or node in the Navigator, you see a context menu with functional choices for that device. This purpose of this section is to explain each of the choices with respect to the TVN40 context menu. Run Health Diagnostics - this option captures the health diagnostics from the device. Run Disk Analysis – this option captures a snapshot of the recorded video on the device that is eligible for playback. Add IP Cameras - this launches the Add Camera form where you can bind your IP Cameras to that particular TVN40. Delete IP Cameras- this deletes all of the cameras that were previously bound to the TVN40. It also deletes all related recorded video for those cameras on the TVN40. Search – search the device for motion and/or event data. Configure Device - this launches the TVN40 Configuration form where you can set things such as NTP Address, MTU Size, etc… Download Configuration – download and save the device's configuration to a file for later use. Upload Configuration – push a saved configuration file to the device to restore its settings. Upload Firmware – this allows for firmware uploads to the device. Reboot Device - this option reboots the TVN40 remotely. Restore Factory Defaults - this option restores factory defaults on the device, except for its IP Address - that remains the same. However, all IP Camera configurations are removed along with any recorded video storage. This option also reboots the unit upon completion of the factory default.	Delete Device - this option deletes the TVN40 from the Navigator. It does NOT delete any configurations, IP Cameras, or storage from the device itself. Rename Device - this allows the user to rename the TVN40. Properties – this shows the Connection, Details, Capabilities, and IP Camera information associated with the device.

Feature	Support	Notes
Troubleshooting – Video Loss	This means there is no video streaming from the IP Camera itself. Things to consider: Ping the IP Camera for Ethernet connectivity. Potential IP Address conflicts on the network. The bit rate for the stream exceeds bandwidth availability. A single IP Camera has been added to multiple TVN40s. Check the IP Camera Browser to see if video is loading there	
Troubleshooting – No Board	This means the TVN40 could not establish a connection with the IP Camera. Things to consider: Ping the IP Camera for Ethernet connectivity. Potential IP Address conflicts on the network. The username and password for the camera may be incorrect on the camera configuration form. NTSC or PAL configuration may be incorrect. Try restoring the default configuration of the camera via the Restore button on the camera configuration form.	
Troubleshooting – No Folder	This means there is no recorded video for the IP Camera per the specific date/time. Things to consider: Check the record settings on the camera to see if it is recording. The time sync may be incorrect between TruVision Navigator, the TVN40, and the IP camera.	

Feature	Support	Notes
Troubleshooting – Black Video Tile	This means something is blocking the video stream from displaying. Things to consider: The 3000 port or the port you changed it to is blocked on the network. Anti-Virus or Windows Firewall is blocking the video (You may need to add TruVision Navigator to the Application Exception List as per the screen shot below) Network bandwidth is too low to support the current cameras video stream. This is typical when configuring one or more streams on a mega pixel camera.