

MAXPRO® NVR 3.1

Operator's Guide



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About This Guide

Introduction

This guide introduces the Honeywell MAXPRO® NVR.

MAXPRO® NVR is a Network Video Recorder (NVR) based on the Honeywell MAXPRO® VMS platform. MAXPRO NVR is offered in the following variants.

- Software - Only NVR solution
- Single Box NVR solution
- Single Box NVR Hybrid solution

Scope

This guide provides information on the features and functionalities common to all the variants of MAXPRO NVR. The technical aspects of MAXPRO NVR are beyond the scope of this guide.

Intended Audience

This document is intended for the operators of MAXPRO NVR.

Structure of this Guide

The following table describes the contents of each chapter in this guide.

No	Chapter	Description
1	About MAXPRO® NVR	Introduces MAXPRO NVR.
2	MAXPRO NVR Wizard	Describes the MAXPRO NVR Quick Wizard. 3 Clicks to Live Video
3	Licensing Information	Describes the licensing and registration information for MAXPRO NVR.
4	Logging on and Familiarization	Describes the procedure to log on to MAXPRO NVR and the MAXPRO NVR user interface.
5	Configuring MAXPRO NVR	Describes the configuration options available for MAXPRO NVR.
6	Monitoring a Site	Describes the procedures to view live and recorded video and the operations you can perform on them.

No	Chapter	Description
7	Searching Recorded Video in MAXPRO NVR	Describes the search options available in MAXPRO NVR.
8	MAXPRO NVR Web Client	Describes the procedure to log on to MAXPRO NVR Web Client, view live video, recorded video and the operations that you can perform on them.
9	Generating Reports	Describes the various reports that you can generate in MAXPRO NVR.

Typographical Conventions

This document uses the following typographical conventions:





Font	What it represents	Example
Swiss721 BT	Words or characters that you must type. The word “enter” is used if you must type text and then press the Enter or Return key.	Enter the password .
	Menu titles and other items you select	Double-click Open from the File menu.
	Buttons you click to perform actions	Click Exit to close the program.
Italic	Placeholders: words that vary depending on the situation	user name
	Cross-reference to external source	Refer to the <i>MAXPRO® Installation and Commissioning Guide</i> .
	Cross-reference within the document	See Installation .

About MAXPRO[®] NVR




Introducing MAXPRO[®] NVR

Honeywell's MAXPRO NVR family includes turnkey solutions with NVR (XE,SE,PE) - 8 to 32 channels, NVR Hybrid (XE,SE,PE) - 16 to 32 channels and software NVR solutions that range from 4 to 32 channels. The MAXPRO NVR solutions support ONVIF (including support for Profile S devices) and PSIA interoperability standards, as well as RTSP, and features native integration to cameras and encoders from Honeywell, AXIS[®], 360⁰ (Immervision, Oncam Grandeye) and other third party manufacturers truly making it an open system. The advanced IP video capabilities make MAXPRO NVRs easy to install with 3-clicks to live video and easy to use with features like Video Surround, Calendar Search and Smart VMD for every day security users to advanced video surveillance users. MAXPRO NVR provides easy to use desktop clients, web client and mobile apps - MAXPRO[®] Mobile.

The following table lists the various **MAXPRO NVR** variants that are available.

	 MAXPRO NVR XE (Xpress Edition)	 MAXPRO NVR SE (Standard Edition)	 MAXPRO NVR PE (Professional Edition)	 MAXPRO NVR Software
Description	<ul style="list-style-type: none"> Simple, affordable NVR 	<ul style="list-style-type: none"> Flexible, scalable NVR 	<ul style="list-style-type: none"> Enterprise class NVR 	<ul style="list-style-type: none"> Flexible, software only NVR
Channels	<ul style="list-style-type: none"> 8 or 16 	<ul style="list-style-type: none"> up to 32 	<ul style="list-style-type: none"> up to 32 	<ul style="list-style-type: none"> 4,8,16 or 32
Maximum Frame Rate at 4CIF/VGA IP at 720p IP at 1080p IP	<ul style="list-style-type: none"> 480 fps 480 fps 400 fps 	<ul style="list-style-type: none"> 960 fps 960 fps 640 fps 	<ul style="list-style-type: none"> 960 fps 960 fps 640 fps 	<ul style="list-style-type: none"> Server hardware dependent- Minimum hardware specs recommended for various fps
Storage	<ul style="list-style-type: none"> 1 - 3TB internal fixed 	<ul style="list-style-type: none"> 1- 24 TB, removable bays 	<ul style="list-style-type: none"> up to 24 TB RAID 5/6, removable bays 	<ul style="list-style-type: none"> Server hardware dependent
Form Factor	<ul style="list-style-type: none"> Desktop 	<ul style="list-style-type: none"> Workstation/Server 	<ul style="list-style-type: none"> Server 	<ul style="list-style-type: none"> Server hardware dependent

The following table lists the various **MAXPRO NVR Hybrid** variants that are available.

	 MAXPRO NVR Hybrid XE (Xpress Edition)	 MAXPRO NVR Hybrid SE (Standard Edition)	 MAXPRO NVR Hybrid PE (Professional Edition)
Description	<ul style="list-style-type: none"> Simple, Affordable NVR Hybrid 	<ul style="list-style-type: none"> Flexible, Scalable NVR Hybrid 	<ul style="list-style-type: none"> Enterprise Class NVR Hybrid
Channels	<ul style="list-style-type: none"> 16 Analog or 16 IP 	<ul style="list-style-type: none"> 16 Analog and 16 IP or 32 IP 	<ul style="list-style-type: none"> 16 Analog and 16 IP or 32 IP
Maximum Frame Rate at 4CIF/VGA IP at 720p IP at 1080p IP at CIF or 4CIF/D1Analog	<ul style="list-style-type: none"> 480 fps (16 ch IP) 480 fps (16 ch IP) 400 fps (16 ch IP) 480 fps CIF or 120 fps 4CIF/D1NTSC (16 ch Analog) 	<ul style="list-style-type: none"> 960 fps (32 ch IP) 960 fps (32 ch IP) 640 fps (32 ch IP) 480 fps CIF or 120 fps 4CIF/D1 NTSC (16 ch Analog) 	<ul style="list-style-type: none"> 960 fps (32 ch IP) 960 fps (32 ch IP) 640 fps (32 ch IP) 480 fps CIF or 120 fps 4CIF/D1 NTSC (16 ch Analog)
Storage	<ul style="list-style-type: none"> 1 - 3 TB, internal fixed 	<ul style="list-style-type: none"> 1 - 12 TB removable bays 	<ul style="list-style-type: none"> up to 24 TB RAID 5/6, removable bays
Form Factor	<ul style="list-style-type: none"> Desktop 	<ul style="list-style-type: none"> Workstation/Server 	<ul style="list-style-type: none"> Server

Note: The product options available in your region might vary. Please contact your local Honeywell representative for more information.

MAXPRO NVR Features

MAXPRO NVR (Single box and Software only solution) offers the following key features that differentiate it from other IP video surveillance systems.

Industry Standards

MAXPRO NVR is an open platform and supports broad third party device integrations with support for PSIA and ONVIF (including support for Profile S devices) standards, Real Time Streaming Protocol (RTSP) standard and native device integrations.

Flexible Licensing

MAXPRO NVR comes with all required software applications and licenses.

Role Based Operator Privileges

MAXPRO NVR offers role-based operator privileges supporting Windows and Local users. You can add up to 1024 users under the Users tab.

Easy Configuration

A quick and easy 3-click wizard to set up the system with auto-configuration and auto-discovery of IP cameras, recording and monitoring configuration, makes installing HD IP systems quick and efficient without requiring any IP expertise. Simple and logical configuration pages make setup a breeze, even for the novice installer.

Analog Capture Card Support

MAXPRO NVR Hybrid supports Analog Capture card through which you can manually add 16 analog cameras. Each capture card comes with 16 channel support and allows you to manage the analog cameras.

User Friendly and Feature Rich User Interface

The MAXPRO NVR user interface is based on Honeywell's flagship MAXPRO® VMS user interface which offers a feature rich user experience. Utilization of this familiar interface allows for the "Learn One, Know Them All" concept that ensures familiarity across a broad range of Honeywell products.

Recording and Playback Operations

MAXPRO NVR supports simultaneous recording, live and playback viewing, search and system management of all supported IP cameras including HD formats in a single server instance.

Enriched Video Viewing Experience

MAXPRO NVR offers enriched video viewing experience through the intuitive video rendering engine that optimizes CPU utilization by altering the video frame rate.

Efficient Event and Alarm Viewing Capability

MAXPRO NVR provides the ability to investigate events and alarms by simultaneously viewing alarm videos at various stages. For every alarm, users can view the video captured during pre-alarm, on-alarm, and post-alarm, and also view live video from the camera which triggered the alarm.

Simultaneous Video Recording and Video Viewing

MAXPRO NVR supports multiple simultaneous operations such as video recording and video viewing or alarm monitoring on the server unit without the need for an additional workstation. It also provides the option of remote monitoring clients. You can view live video while simultaneously performing searches.

Video Motion Detection (VMD) Support

MAXPRO NVR supports both Camera based and Server based VMD. Camera based VMD support is based on the integration method and the motion detection performance depends on camera analytics. Server based VMD (Smart VMD) is supported for all video devices supported by NVR, and is based on Honeywell full analytics package algorithms supporting object-based motion detection with reduced false alarms.

Search

MAXPRO NVR supports multiple search features - Timeline Search, Preview Search, Alarm/Events Search and the new Calendar Search.

360 Immersive Experience (Dewarping) Support

MAXPRO NVR supports client side dewarping integration with OnCam GrandEye and Immervision 360 applications.

Multi-language Support

MAXPRO NVR supports multiple languages such as English, French, Arabic, Russian, Spanish, Italian, Dutch, German, Czechoslovakian, Portuguese and Polish. English is the default language.

Keyboard Support

MAXPRO NVR supports industry standard Honeywell keyboards such as UltraKey Plus and UltraKey Lite over Ethernet.

Clip Export

MAXPRO NVR supports exporting clips and still images in simple.wmv and.bmp formats. The clips can be signed with digital signatures for further analysis.

E-mail Notification

MAXPRO NVR supports email notification on camera, system and operator events.

Video Surround Feature

MAXPRO NVR offers Video Surround, a Honeywell-patented feature, which provides the ability to track subjects of interest as they move between areas covered by adjacent cameras by simply double-clicking on the panel where the subject is currently visible.

Reports

Using the MAXPRO NVR, you can generate Event History and Operator Log reports, each of which has its own significance. These reports can be exported in .pdf, Crystal Reports, Excel and Word formats.

Integration Capability

Multiple MAXPRO NVRs can be deployed for system expansion using a distributed architecture and integrated with the MAXPRO Viewer multi-site software or MAXPRO VMS enterprise video management system.

Audio

MAXPRO NVR supports 1-way audio (camera to NVR) for specific IP cameras. Please refer to the compatibility list on HOTA for the models supported.

Web Client

The MAXPRO NVR Web Client allows you to remotely access the MAXPRO NVR server using a web browser like Internet Explorer and perform video surveillance. It gives you the flexibility to view live video and perform the basic video surveillance functions remotely over the web. MAXPRO NVR Web Client supports viewing the live video, viewing Recorded Video (Playback), taking Snapshot and viewing Presets.

Advanced Security

MAXPRO NVR supports advanced security features with encryption support for communication between desktop client to NVR and secure https login for Web Client.

MAXPRO NVR System Architecture

MAXPRO NVR Standalone System Architecture

The following figure illustrates the MAXPRO NVR HYBRID XE Standalone system architecture.

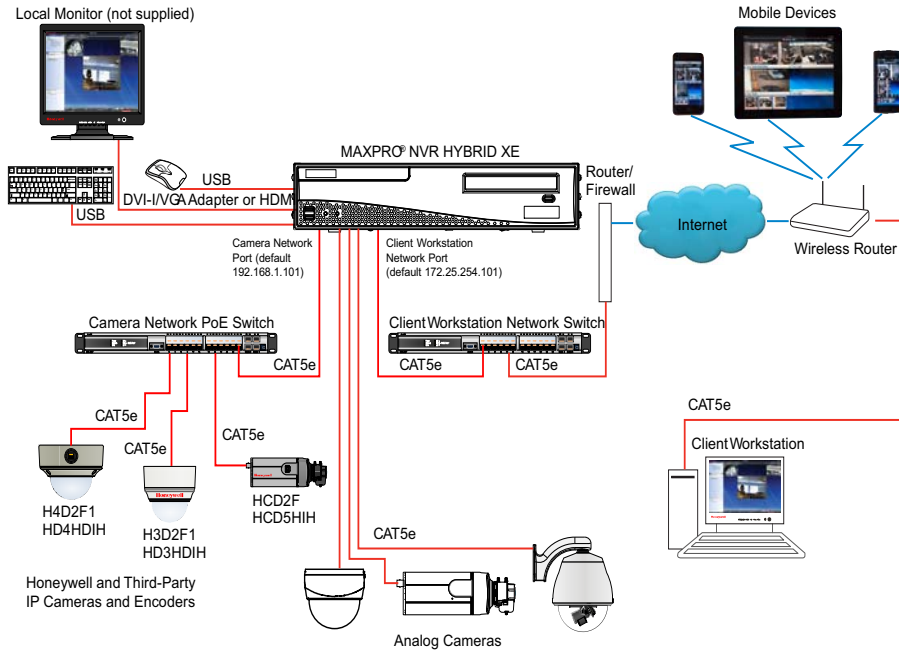


Figure 3-1 MAXPRO NVR HYBRID XE Standalone System Architecture

Note: The diagrams for other NVR Hybrid units (SE, PE) look similar to the MAXPRO NVR Hybrid XE, with the NVR Hybrid box replaced by the respective NVR Hybrid.

MAXPRO NVR SE System Diagram

The following figure illustrates the MAXPRO NVR SE system diagram.

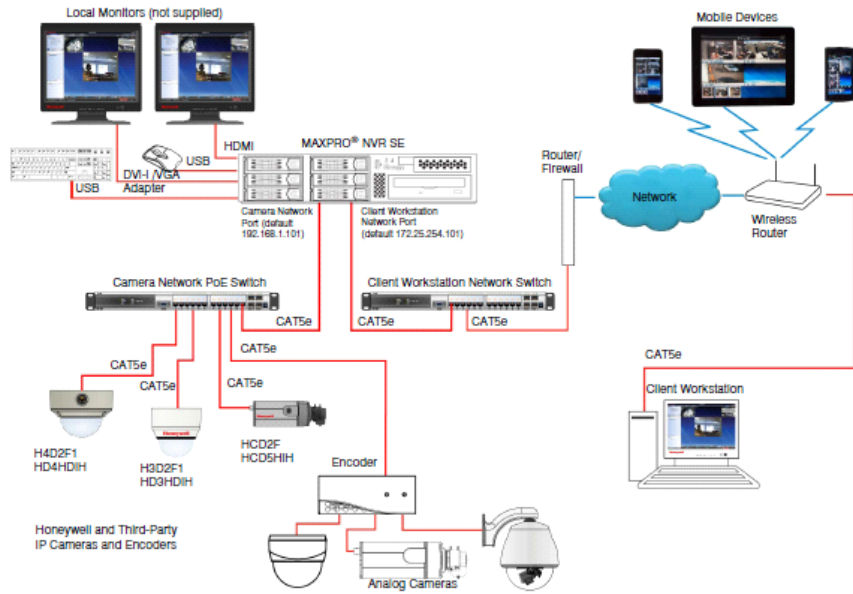


Figure 3-2 MAXPRO NVR SE System Diagram

Note: The diagrams for other NVRs (XE, PE and Software only) look similar to the MAXPRO NVR SE, with the NVR box replaced by the respective NVR.

MAXPRO NVR Distributed System Architecture

The following figure illustrates the MAXPRO NVR distributed system architecture.

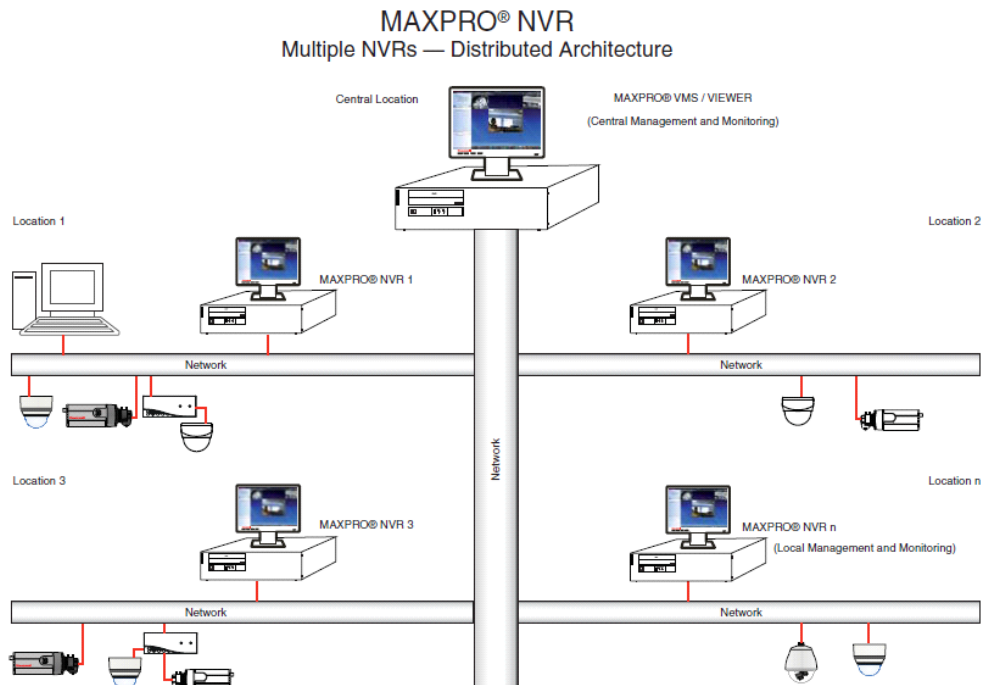


Figure 3-3 MAXPRO NVR Distributed System Architecture

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MAXPRO NVR Wizard

MAXPRO NVR Wizard is an easy three-step procedure to live video for Honeywell devices. This wizard automatically starts each time you power on the MAXPRO NVR system.


1. Step 1 - The **CONFIGURATION** page appears.



Figure 1-1 CONFIGURATION page

- If you want to change the default settings, select “**YES**” or “**NO**” corresponding to the fields listed in the following table or click **STEP 2** to accept the default settings, and proceed to the **CAMERA DISCOVERY** page in [step 2](#).

Field	Description
CONFIGURATION SETTINGS	
Video Format	Select “NTSC” or “PAL” based on your region.
Start Recording	Start recording as soon as soon as the camera is added. 24/7 continuous recording is enabled for all the cameras.
Dynamic IP Synchronization	MAXPRO NVR software automatically synchronizes any change in the camera’s IP address. For example, if a camera is restarted, and a new IP is associated to the camera, then the MAXPRO NVR software automatically detects the changed IP address and synchronizes it to the camera so that live viewing and recording is not disturbed.
Auto Add Discovered Camera	Any newly connected camera is automatically discovered and added to the camera’s list.

Field	Description
DISCOVERY SETTINGS	
Choose Camera Network	Enables you to choose your camera network from the drop-down list. Click the refresh icon  to refresh the drop-down list.
Auto IP Assignment	Assigns a valid address to cameras with Automatic Private IP Addressing (APIPA). Note: Use this option only if you do not have a DHCP server and want to assign an IP address in your computer network range to the cameras.
	Range for IP Assignment: The MAXPRO NVR system automatically detects all the cameras in this range on the network. From, To: Type the IP range.
Filter Discovered Cameras	Enables you to filter the discovered cameras based on the camera model and IP range.
	<ul style="list-style-type: none"> • Filter By Camera Type: Select this check box and then select a camera model from the drop-down list by clicking the respective check boxes. • Filter By IP Range: Select this check box and then type the IP range in From and To.

- Select the required language from the drop-down list. The supported languages are Arabic, Czechoslovakian, Dutch, French, German, Russian, Italian, Polish, Portuguese, Spanish, and English. The default language is **English (US English)**.
- Select the **Launch Wizard on Windows startup** check box to launch the wizard automatically each time you start Windows.

Note: Click **RESET** to restore the default settings for each of the fields listed in the above table.

2. Step 2 - The **CAMERA DISCOVERY** page appears.



Figure 1-2 **CAMERA DISCOVERY** page

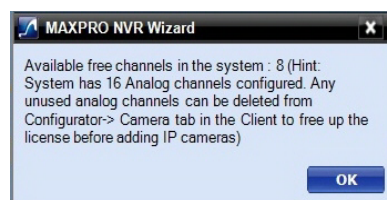
- All the settings that you have saved on the **CONFIGURATION** page are listed, along with the discovered cameras. As each connected camera is discovered (notice the message that displays on the lower right of your monitor) it is added to the list. This list disappears as the cameras are added to the MAXPRO NVR software.



Figure 1-3 **Discovered Cameras**

Note: The **ADD** button on the **CAMERA DISCOVERY** page appears only if you have selected **“NO”** corresponding to **Auto Add Discovered Camera** in the **CONFIGURATION** page. Use the **ADD** button to add discovered cameras of your choice to the MAXPRO NVR software. Select the check boxes corresponding to a camera from the discovered list, and click **ADD** to add the cameras.

- A MAXPRO NVR Wizard pop-up message appears detailing the available free channels in the system on NVR Hybrid units if there are analog cameras (pre-configured or added manually). It also gives you a hint about deleting the unused analog channels to add IP cameras. Click **OK** to continue.



- Click **BACK** to return to the **CONFIGURATION** page or click **DONE** when the number of cameras discovered equals the number of connected cameras.

Caution: Only Honeywell cameras (except equip-S and Honeywell HDZ Series – SD and HD IP PTZ Domes) are discovered and added in the MAXPRO NVR Wizard. To discover and add other third party PSIA/ONVIF compliant cameras, see [Adding Third Party PSIA, ONVIF and AXIS Cameras](#) on page 98. For adding and configuring third party RTSP cameras, the RTSP settings must be specified, see [RTSP Settings](#) on page 93.

3. Step 3 - The **INSTALLATION** page appears.

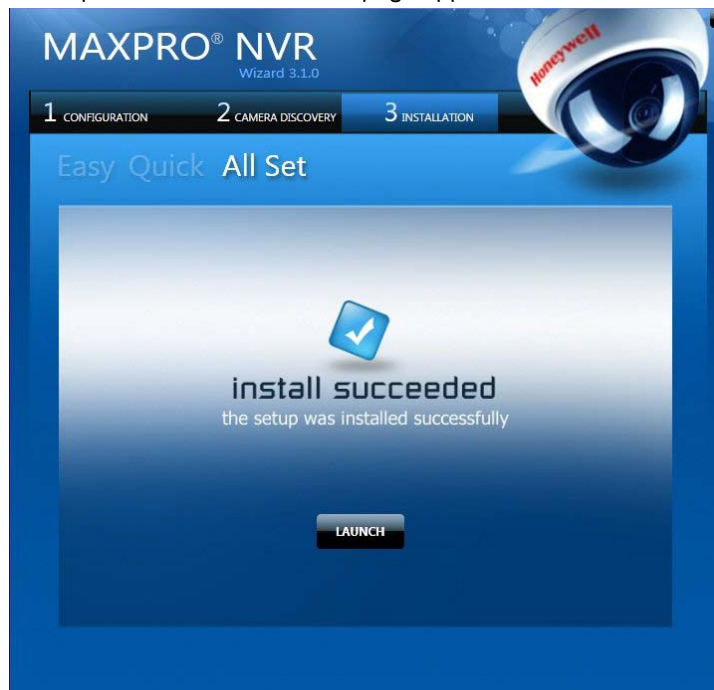


Figure 1-4 *INSTALLATION page*

- Click **LAUNCH**. The MAXPRO NVR Log On dialog appears. Please wait while the system logs you on automatically as a Windows Logged-In User. MAXPRO NVR launches and the **Viewer** tab appears. The **Devices** window on the left pane lists all the discovered network cameras.

Note: Video is visible as soon as the cameras are dragged and dropped into the panels (also known as Salvo Layouts) on the Viewer. See [Live Video](#) for more information.

MAXPRO NVR Wizard Settings on the Task bar

If you right-click the MAXPRO NVR Wizard on the Task bar, a shortcut menu appears with a list of quick configuration settings.

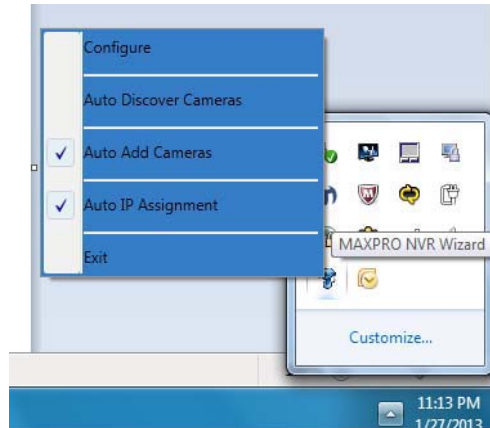


Figure 1-5 MAXPRO NVR Wizard Taskbar Settings

Setting	Select..
Configure	To open the Configuration page.
Auto Discover Cameras	To automatically discover the cameras.
Auto Add Cameras	To automatically add the discovered cameras to the list.
Auto IP Assignment	To assign a valid address to cameras with Automatic Private IP Addressing (APIPA).
Exit	To close the MAXPRO NVR Wizard.

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Licensing Information

In this chapter...

Section	See page...
Viewing the Version and License Information of MAXPRO NVR	36


Viewing the Version and License Information of MAXPRO NVR

Caution: Honeywell's boxed solutions come pre-licensed or included with all the camera licenses. This varies for MAXPRO NVR models, please refer to the respective data sheets.

The MAXPRO NVR Software license has a 60-day activation period. During this trial period NVR allows you to add up to 32 cameras. To continue using the software beyond the first 60 days, you must register the software. On registration, the license is limited to the number of camera licenses purchased with the software.

You can view the version and license information of MAXPRO NVR software from the **User** menu.

To view the version and license information

1. From the **User menu**  on the top right, click **About** from the drop-down list. The version information of MAXPRO NVR appears.

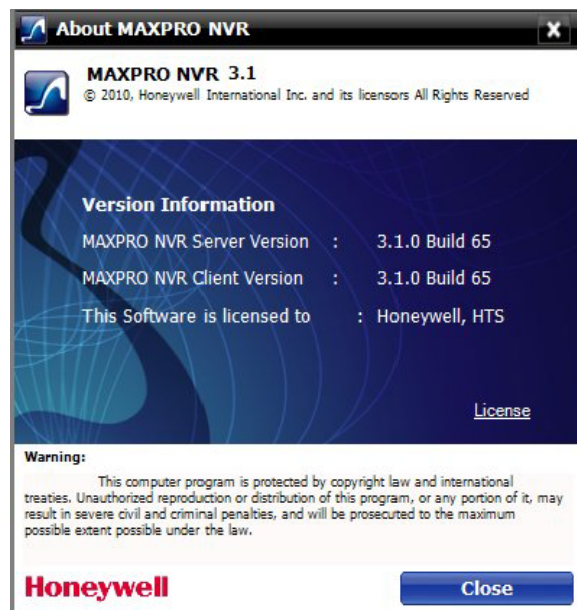


Figure 2-1 About MAXPRO NVR

2. Click the **License** option. The **License Management Console** dialog box appears.

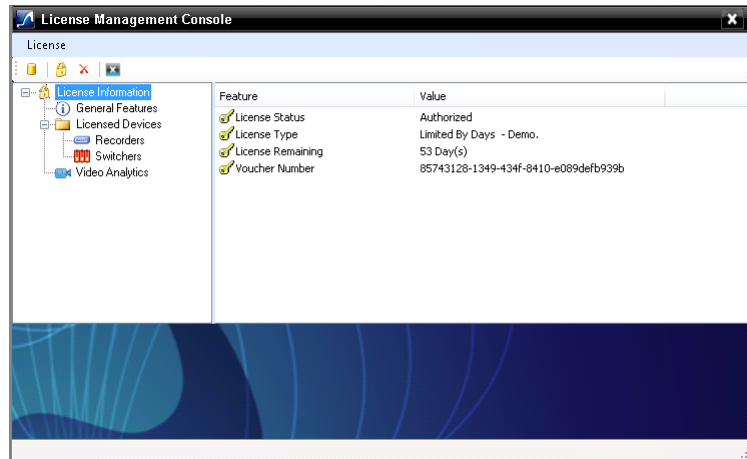


Figure 2-2 License Management Console

The **License Management Console** dialog box displays the number of days remaining in the 60-day activation period since the software was installed. You must purchase the license to continue using MAXPRO NVR.

License Type is shown as Permanent if your NVR has been licensed. General Features shows the license information on number of channels and clients.


Registration and Licensing

Note: Refer to the *MAXPRO NVR Getting Started Guide* for detailed information on registration and licensing of Software only NVR.

Registering the software only requires the Host ID file from the server system. This is a unique ID generated for the NVR Server. Click the drum icon to create a Host ID. You are prompted to select the path where you want to generate the Host ID (HID) file, and then click **OK**. Save the file to a USB flash drive or hard drive.

Completing the Licensing

After you receive the license certificate, perform the following steps to license the NVR.

1. Download the License Certificate file and save it to a USB flash drive.
2. Launch MAXPRO NVR on the MAXPRO NVR Server.
3. From the **User** menu,  click **About**.
4. On the **MAXPRO® NVR** dialog box, click **License**.
5. On the **License Management Console** dialog box, select **Install License** in the **License** drop-down list.
6. The **New License Configuration Wizard** launches. click **Next**.
7. On the **Locate Your License File** dialog box, click **Browse** to locate your license certificate (for example, on the USB flash drive), and then click **Next**.

8. The **License Comparison** dialog box displays the details of the existing license and the newly procured license. Compare the **Existing License** and the **Selected License** columns corresponding to **General Features** and **Devices**. When you are satisfied, click **Next**.

Note: Any discrepancy in the license must be reported to Honeywell Sales Support. For example, the **Maximum supported cameras** row under the **Selected License** column displays the number of cameras for which the license is purchased. If the number of cameras is less or more than the number of cameras for which the license was purchased, contact Honeywell Sales Support immediately.

9. On the **Device Configuration Changes** dialog box, check that the details are accurate, and then click **Next**.
10. On the **Confirm New License** dialog, click **Finish**.
11. On the **New License Configuration Wizard** dialog box, click **Yes**.

Logging on and Familiarization

In this chapter...

Section	See page...
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Port Forwarding	44
Familiarizing with the MAXPRO NVR User Interface	47
Setting Preferences	54

Logging on Using Profiles

The MAXPRO NVR server addresses are saved in profiles. You need to select the profile before logging on. You can set a profile as the default profile. When a profile is set as default, you do not need to select the profile each time you log on to MAXPRO NVR. You can also modify and delete profiles.

Logging on to MAXPRO NVR

Caution: On Honeywell provided systems a default Windows user, “Administrator” and password, “Password1” is already configured and hence you are automatically logged in.

To log on to MAXPRO NVR


1. Double-click  on the desktop. The **Log On** dialog box appears.
Or
Click **Start -> Programs -> Honeywell -> MAXPRO NVR**. The **Log On** dialog box appears.




Figure 3-1 MAXPRO NVR Log on dialog box

2. Click the **Language** option, and then select the required language from the drop-down list. The supported languages are Arabic, Czechoslovakian, Dutch, Polish, Portuguese, French, German, Russian, Italian, Spanish, and English. The default language is **English (US English)**.
3. Type your **Username**. The default user name is “admin”.
4. Type your **Password**. The default password is “trinity”.

Note: Select the **Windows Logged-In User** check box for logging on using the Windows user name and password. If the **Windows Logged-In User** check box is cleared, the MAXPRO NVR user name and password is used for authentication. Ensure that you avoid using the @ character in your password.

5. If there is no profile set as default, then select the **Profile** corresponding to the MAXPRO NVR server to which you want to connect.

Note: Set profiles if you have multiple MAXPRO NVRs and use the drop-down to choose which NVR you would like to connect to.

6. Select the **Display Video on Alarm** check box to display the viewer as an alarm monitor.
7. Press **ENTER** or click . The **Viewer** tab appears.

Saving a Server Address in a Profile

To save a server address

1. In the client workstation, double-click the  icon on the desktop to display the **Log On** dialog box.
2. Click **Server Settings**. The **Server Settings** dialog box appears.

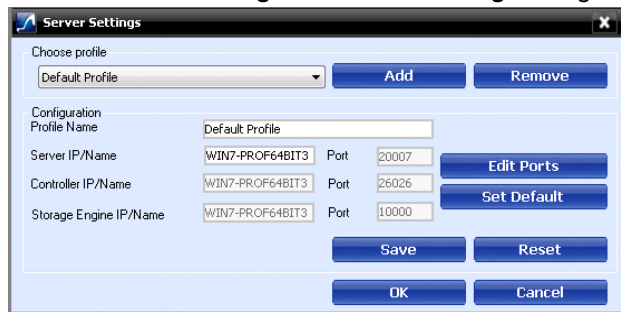


Figure 3-2 Server Settings dialog box


3. Click **Add**.
4. Type the **Profile Name** to identify the profile.
5. Type the **Server IP/Name** (numerical IP address or the network name of the MAXPRO NVR server).
6. Click **Save**.
7. Click **OK**. The server address is saved in the profile.

Note: You can click **Set Default** in the server settings dialog box to set the profile as the default profile.

Setting the Default Profile

To set the default profile

1. Select the profile you want to set as default before logging on to MAXPRO NVR.

- In the **User** menu,  , click **Profiles** and select **Set Default Profile**. The profile is set as the default profile. The default profile appears selected in the **Profile** box in the **Log On** dialog box.

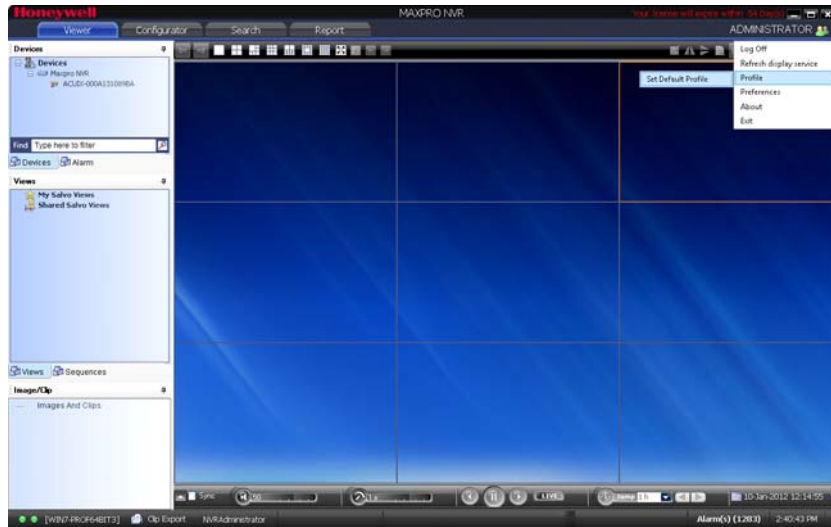



Figure 3-3 Setting the Default Profile

Modifying a Profile


You can modify the profile name and the server address saved in the profile.

To modify a profile

- In the client workstation, double-click the  icon on the desktop to display the **Log On** dialog box.
- Click **Server Settings**. The **Server Settings** dialog box appears.
- In the **Choose Profile** box, select the profile you want to modify. The profile details appear under **Configuration** in the **Server Settings** dialog box.
- Change the **Profile Name** as applicable.
- Change the **Server IP/Name** as applicable.
- Click **Save**.
- Click **OK**. The profile is modified.

Deleting a Profile

To delete a profile

- In the client workstation, double-click the  icon on the desktop to display the **Log On** dialog box.
- Click **Server Settings**. The **Server Settings** dialog box appears.
- In the **Choose Profile** box, select the profile you want to delete.
- Click **Remove**.

5. Click **OK**. The profile is deleted.

Editing the Ports

The MAXPRO NVR user interface includes a provision to modify the port number associated to the following components:

- Trinity Server
- Trinity Controller
- NeoEngine Server

To edit the ports

1. In the Server Settings dialog box, click **Edit Ports**. The port numbers associated to Server IP/Name, Controller IP/Name and Storage Engine IP/Name are enabled for editing.

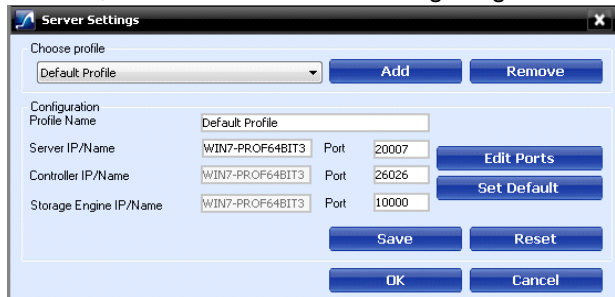


Figure 3-4 Editing the Ports

2. Change the port numbers as applicable.
3. Click **Save**.

Note: Port 20000 is used for ONVIF discovery.

Port Forwarding

The Port Forwarding feature is generally used when an Internet client wants to connect to a particular NVR in a private Local Area Network (LAN). This feature is enabled by defining port forwarding rules in the Router. By defining these rules, you can send data using the range of ports on the internet side to a port and IP addresses on the private LAN network.

Scenarios of Port Forwarding

Note: The scenarios described in the subsequent sections only cover port forwarding required for the NVR client to connect to the NVR. For using MAXPRO Mobile and MAXPRO NVR Web Client from the internet, the port used by Web Server on the NVRs (Default Port: 80) should also be set up for port forwarding. See [Changing Default Port 80 for the MAXPRO Mobile app and MAXPRO Web Client](#) for further details.

Scenario1- Services mapped to different ports

Two NVRs in a private LAN are configured behind the router, and all the services on the NVRs are running on the default ports. In the router's port forwarding section you need to map the ports for each of the services running in the NVRs. An internet MAXPRO NVR client can connect to a NVR, by specifying the public IP address given to the router and corresponding ports mapped in the port forwarding table in the router.

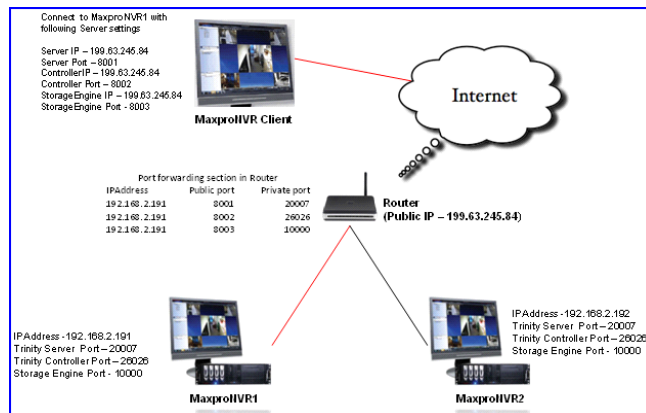


Figure 3-5 Port Forwarding Scenario 1

In the above figure:

MAXPRO NVR 1 and MAXPRO NVR 2 have the default port numbers, 20007, 26026, 10000 configured for the following services respectively:

- Trinity Server
- Trinity Controller
- Storage Engine

In the router's port forwarding table, the default ports numbers for these services are mapped to the public port numbers (8001, 8002, 8003) of the router.

An external MAXPRO NVR client can access the MAXPRO NVRs using the following settings:

- Server IP: 199.63.245.84

- Server Port: 8001
- Controller IP: 199.63.245.84
- Controller Port: 8002
- Storage Engine IP: 199.63.245.84
- Storage Engine Port: 8003

Note: The mapping of the ports 8001, 8002, 8003 to the respective NVR IP and ports (20007, 26026, 1000) helps an external MAXPRO NVR Internet client to connect to the MAXPRO NVR system.

Scenario 2: Services mapped to existing ports

A single NVR is configured behind the router, and all the services on the NVR are running on the default ports. In the router's port forwarding section specify the default ports. The Internet client can just specify the public IP Address and default ports to connect to the NVR. The drawback of mapping to the same ports is that only one NVR can be behind the router.

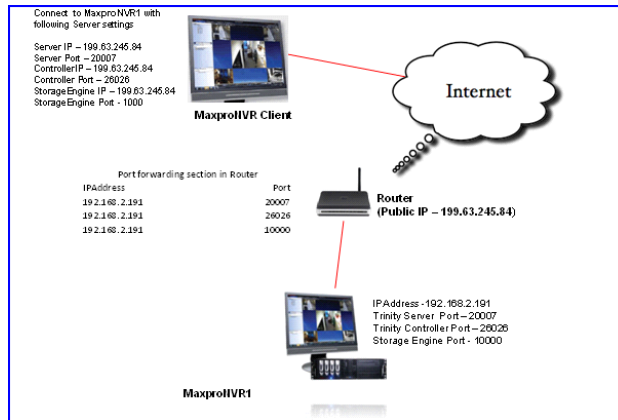


Figure 3-6 Port Forwarding scenario 2

In the above figure:

There is a single MAXPRO NVR 1 with the default port numbers, 20007, 26026, 10000 configured for the following services respectively:

- Trinity Server
- Trinity Controller
- Storage Engine

In the router's port forwarding table, the default ports numbers for these services are specified.

An external MAXPRO NVR client can access the MAXPRO NVRs using the following settings:

- Server IP: 199.63.245.84
- Server Port: 20007
- Controller IP: 199.63.245.84


- Controller Port: 26026
- Storage Engine IP: 199.63.245.84
- Storage Engine Port: 10000

Note: In these scenarios, as ports are not mapped in the router, you can connect to only one MAXPRO NVR from an external MAXPRO NVR Client.

Logging off

You can log off from MAXPRO NVR from the **User** menu. The name of the currently logged in user is displayed as the **User** menu on the top right of each screen.


To log off from MAXPRO NVR

1. Click the **User** menu, . The user menu options appear.
2. Click **Log Off**. The **Logon** dialog box appears after logging off from MAXPRO NVR.

Closing the MAXPRO NVR User Interface

You can close the MAXPRO NVR user interface from the **User** menu. The name of the currently logged in user is displayed as the **User** menu on the top right of each screen.

To close the MAXPRO NVR

1. Click the **User** menu, . The user menu options appear.
2. Click **Exit**. A dialog box appears prompting you to confirm the action.
3. Click **Yes**.

Familiarizing with the MAXPRO NVR User Interface

The user interface of MAXPRO NVR is easy-to-use because of its intuitive icons and user-friendly features. You can configure the devices in the video surveillance network through the MAXPRO NVR user interface. The user interface consists of tabs, tree-structures, status bar, floating windows, and icons. On opening the user interface, you see the following four tabs: **Viewer**, **Configurator**, **Search** and **Report**. Based on the tab you select, windows, tree structures, and other settings relevant to the tab appear on the screen.

A status bar is displayed at the bottom of the user interface. The status bar displays the following: the connection status with the MAXPRO NVR server and controller, the status of clip creation, the role of the user, the number of unacknowledged alarms, and the time.

Viewer Tab

The following figure illustrates the **Viewer** tab.

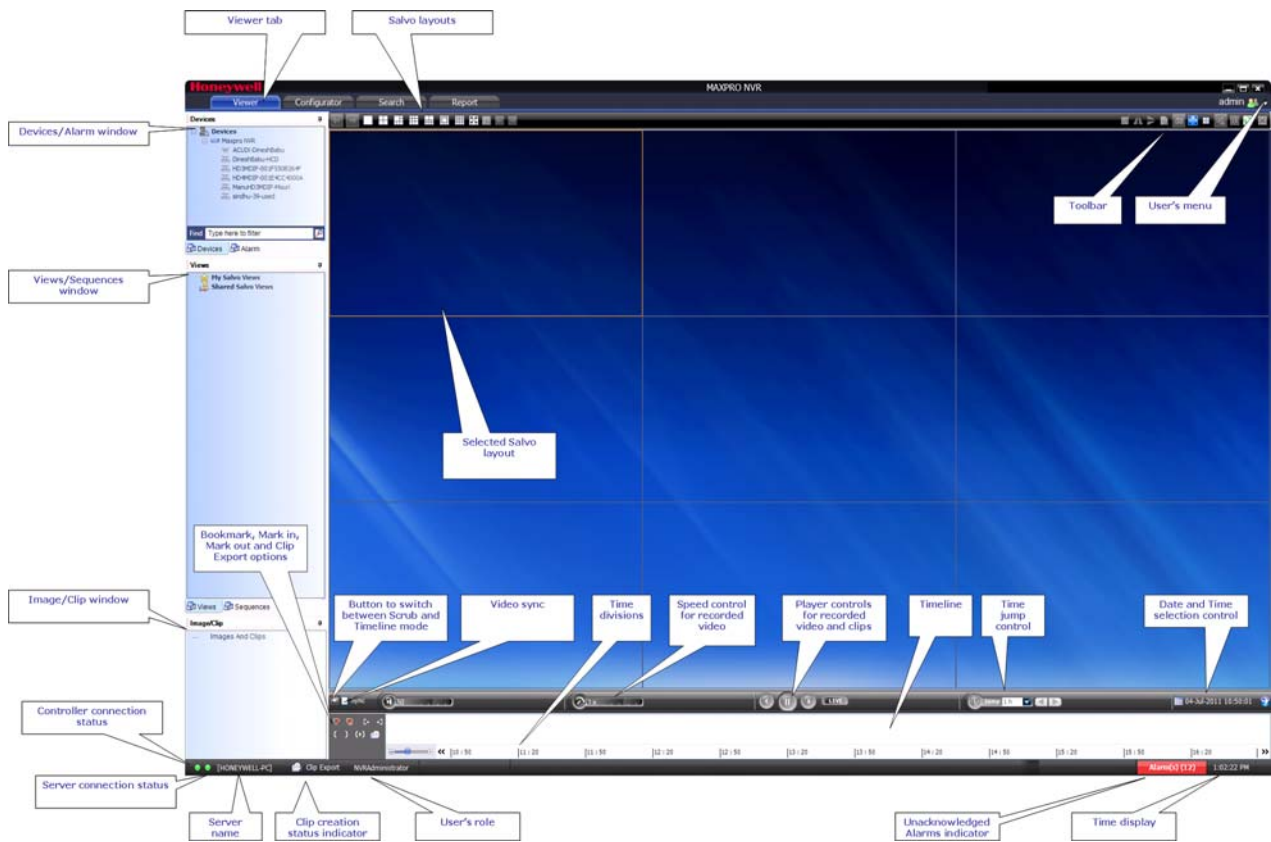





Figure 3-7 Viewer tab

The following components are displayed on the screen.

Component	Description
Devices/Site window	<p>A floating window that displays the recorders and cameras in a tree structure. You can select one or more devices from the Devices window to view video in the Salvo Layout.</p> <p>Intellisense search</p> <p>The Intellisense search option simplifies the search for cameras. When a part of the camera name is typed in the text box, the Intellisense search displays the list of cameras that are connected to the MAXPRO NVR in the Devices window. For example, if you are searching for Camera 2 connected to MAXPRO NVR, then type Ca in the text box. The list of camera names which contain 'ca' are displayed.</p> <p>Intellisense search also supports wild characters while searching. For example:</p> <ul style="list-style-type: none"> • ca* — camera names that begin with 'ca' are displayed. • *ca — camera names that end with 'ca' are displayed. • *ca* — camera names that contain 'ca' are displayed. • ! ca — cameras that do not have 'ca' in their name are displayed. <p>Select the required filter string and click on the filter button. You can toggle between the Filter On and Off mode using the option  or right-click , and select between Filter ON and Filter OFF. The hot key to activate intellisense search is F4.</p>
Devices /Site window continued...	<p>The context menu options in the Devices window include:</p> <ul style="list-style-type: none"> • Show Live - to view live video. • Preview - to preview the live video. • Refresh - to refresh the camera status. • Refresh from Device - to refresh the camera status from the device. • Show Device ID - to display the device ID. • Hide Device ID - to hide the display of device ID. • Sort By Name - to sort the list of devices by name. By default, names are sorted in ascending order.
Alarm window	<p>Click to display a floating window that lists the alarms. You can acknowledge and clear the alarms from this window. See Alarms on page 153.</p>

Component	Description
Image/Clip window	<p>Click to display a floating window that lists the images and clips in a tree structure. You can select the images and clips to view.</p> <p>You can right-click on the images folder or the images to display a context menu. The context menu options include,</p> <ul style="list-style-type: none">• Refresh - to refresh the images/clips in the respective folder.• Show Video - to show the video.• Delete - to delete an image.• Show In Folder - to view the folder in which the images are stored. <p>See Images and Clips on page 149.</p>
Sequences window	<p>Click to display a floating window that lists the sequences. You can play the sequence using the play sequence action.</p> <p>You can right-click on the devices to display a context menu. The context menu options include:</p> <ul style="list-style-type: none">• Play Sequence - to play any sequence.• Show Device ID - to display the device ID.• Sort By Name - to sort the list of sequences by name. By default, names are sorted in ascending order. <p>See Configuring the Sequences on page 104.</p>

Component	Description
Views window	<p>A floating window that lists the salvo views. The View window consists of My Salvo Views and Shared Salvo views. Salvo views corresponding to the logged on user are listed under My Salvo Views in the Views window. You can copy a salvo view from My Salvo Views to Shared Salvo Views using the drag and drop option or right-click and select Add to Shared Salvo Views. Similarly, you can copy a salvo view from Shared Salvo Views to My Salvo Views using the drag and drop option. Devices grouped under Shared Salvo Views are displayed on all client workstations irrespective of the logged in user.</p> <p>To add a salvo view to Shared Salvo Views, right-click on a salvo view, and then click Add to Shared Salvo Views. You can copy a salvo view from Shared Salvo Views to My Salvo Views by dragging and dropping a salvo view. You can right-click on the salvo view to display a context menu. The context menu options include:</p> <ul style="list-style-type: none"> • Show - to view the salvo view. • Rename - to rename a salvo view. • Remove - to remove a salvo view. • Save - to save a salvo view. • Add to Shared Salvo Views - to add a salvo view to the Shared Salvo views. • Show Device ID - to display the device ID. • Hide Device ID - to hide the display of device ID. • Refresh - to refresh the salvo views in the list. • Sort By Name - to sort the list of salvo views by name. By default, names are sorted in ascending order. <p>See Salvo View on page 116.</p>
Salvo Layout	<p>An arrangement of panels in which video is displayed. See Salvo Layouts and Panels on page 114.</p>
Timeline window	<p>A window that enables you to view video from a specified date and time. It also consists of other features such as mark in and mark out and selective viewing using bookmarks. You can also create clips from video recordings. You can select between the scrub mode or full timeline mode using the  icon. See Video Recording and Viewing on page 126.</p>

Configurator Tab

The following figure illustrates the **Configurator** tab.

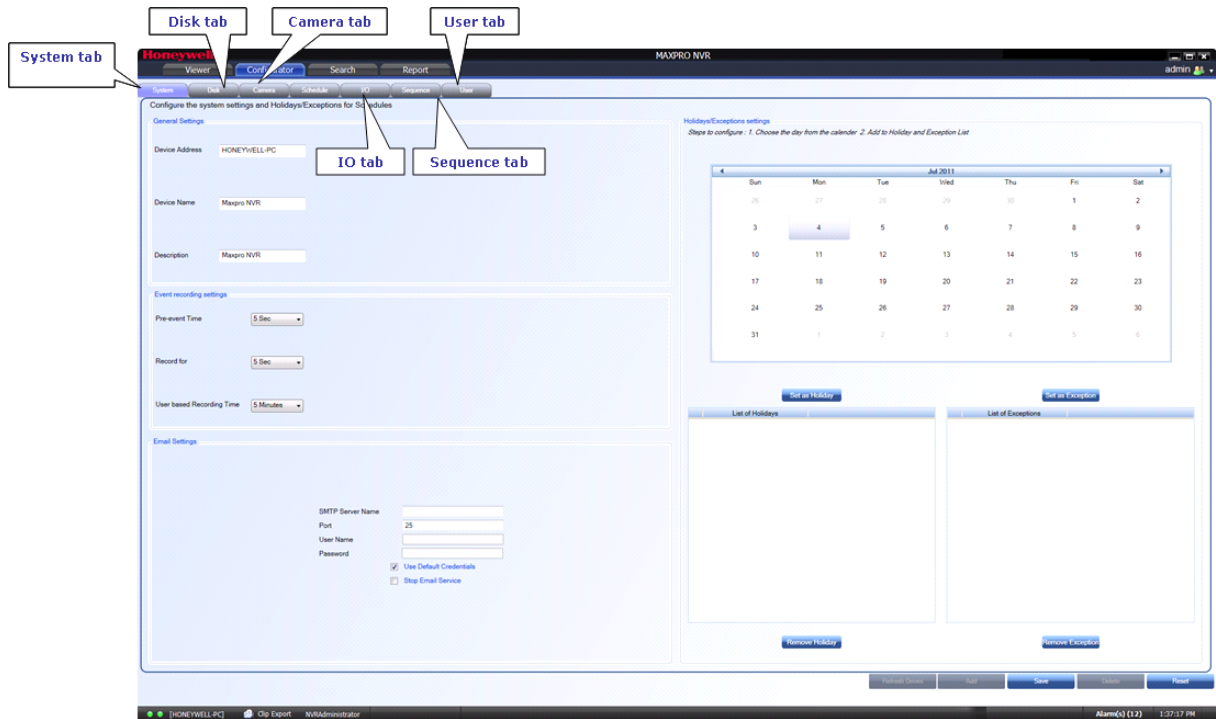


Figure 3-8 Configurator tab

The settings in the **Configurator** tab enable you to add and configure the video devices and set up the MAXPRO NVR system.

Components	Description
System tab	Helps you to configure the system level information for MAXPRO NVR.
Disk tab	Helps you to configure the disk settings for video storage.
Camera tab	Helps you to configure the camera settings.
Schedules tab	Helps you to configure the schedules for live video.
IO tab	Helps you to configure the input and output for a camera.
Sequence tab	Helps you to select a sequence of cameras for live video.
User tab	Helps in user administration.

Search Tab

The following figure illustrates the **Search** tab.

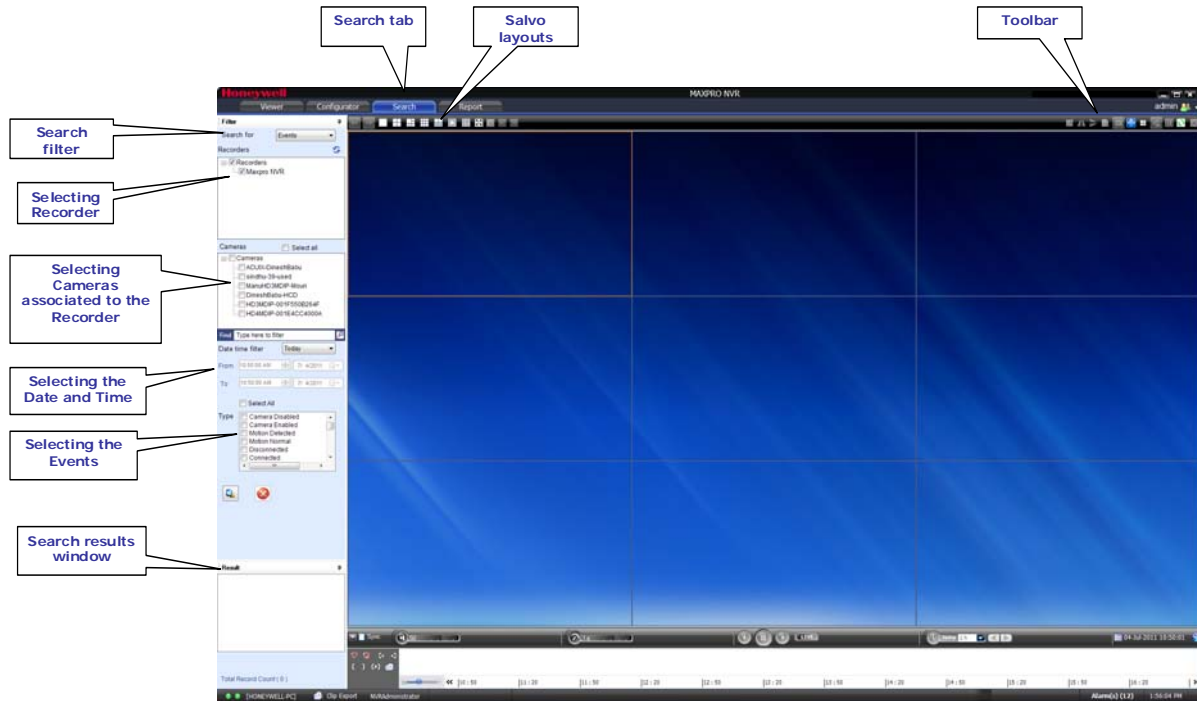


Figure 3-9 Search tab

You can search for recorded video and events in MAXPRO NVR from the **Search** tab.

Report Tab

The following figure illustrates the **Report** tab.

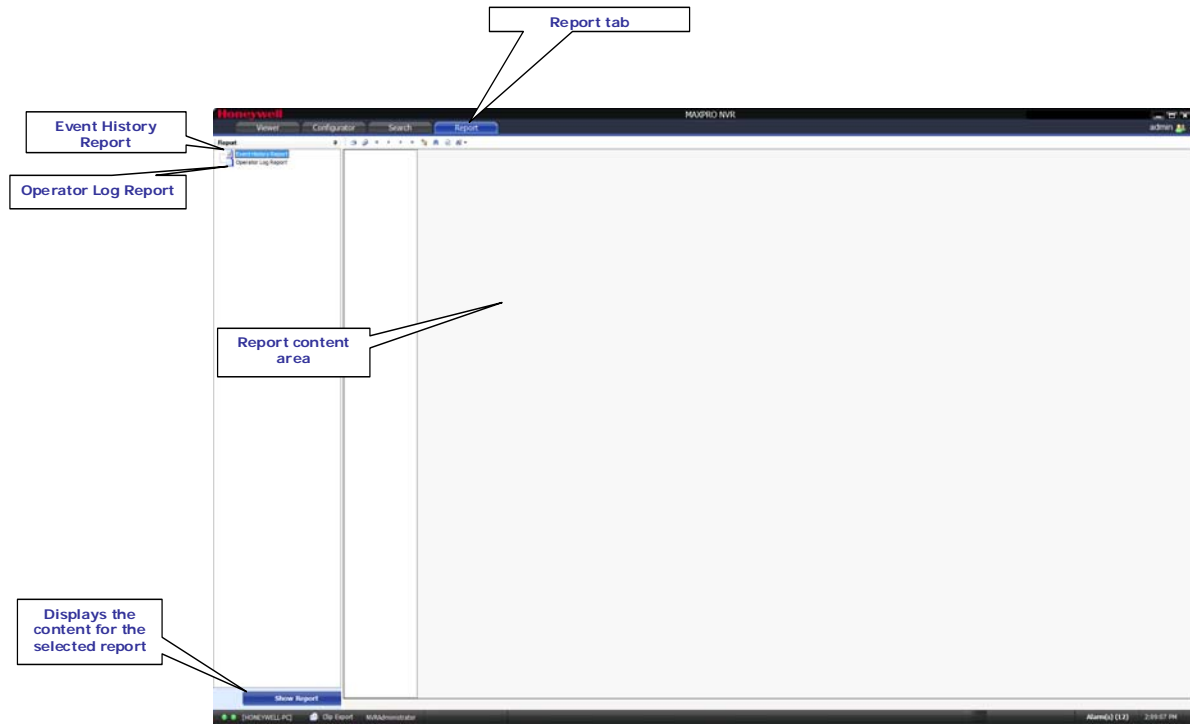


Figure 3-10 Report tab

Setting Preferences

The **Preferences** option in the **User** menu enables you to configure the general settings and the On Screen Display (OSD) settings. On the General Settings tab, you can configure the frame rate for panels that are not selected in the salvo layout, the video rendering settings, the video to be displayed for alarms, and the alarm threshold settings. The OSD settings can be configured to change the font properties such as type, color, and size for the text that appears over the video displayed in a panel.


You can also select the default values for the general and OSD settings using the **Preferences** option.

MAXPRO NVR supports three modes of encryption between client and server. On the Advance Settings tab you can select the options such as Default Encryption, Windows Authentication Encryption and Certificate Based Encryption under the Application Security Settings for secure communication.

Settings for Video Rendering

There are two types of rendering modes, **Default** and **No Video Display**. The Default rendering is the recommended mode which enables the user to view live video from multiple cameras at optimum quality. Selecting **No Video Display** means that no video is displayed. You can also set the frame rate for panels that are not selected in the salvo layout. The frame rate for the panels that are not selected can be set to improve the video signal transmission over lower bandwidth networks.

To select the video rendering option

1. Click the **Preferences** option in the user menu, . The **Preferences** dialog box appears. By default, the **General Settings** tab is selected.

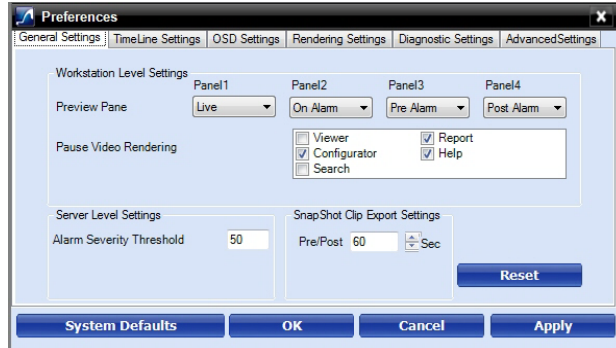


Figure 3-11 General Settings tab

2. Click the **Rendering Settings** tab.

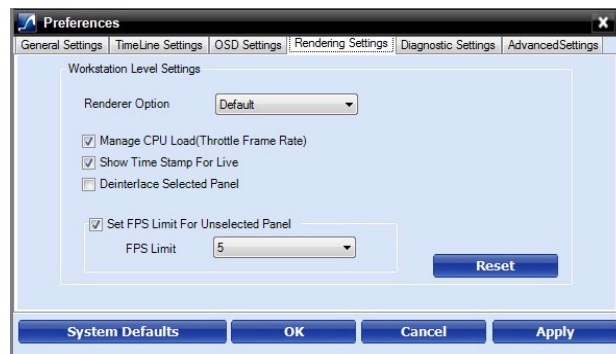



Figure 3-12 Rendering Settings tab

3. Select the **Renderer Option (Default/No Video Display)** for video rendering.
4. Select the **Mange CPU Load** (Throttle Frame Rate) check box if you want to throttle the frame rate if the CPU usage reaches 90 per cent.
5. Select the **Show Time Stamp For Live** check box if you want the camera name and time to be displayed on the live video.
6. Select the **Deinterlace Selected Panel** check box if you want to deinterlace the selected panel.
7. Select the check box beside **Set FPS Limit For Unselected Panel**.
8. Select the **FPS Limit**. The default frame rate is 5 fps and is the recommended setting for unselected panels.
9. Click **Apply**.
10. Click **OK** to close the dialog box.

Pausing the Video Rendering

You can pause the video rendering to momentarily stop the rendering of video when a tab that does not display video is selected (for example, when the **Report** tab is selected, the video rendering can be paused to improve the application performance). The rendering of video starts again when you select a different tab in the user interface.

To select the tab which pauses video rendering

1. Click the **Preferences** option in the **User** menu, . The **Preferences** dialog box appears. By default, the **General Settings** tab is selected.
2. For **Pause Video Rendering**, select the check box next to the tab names that you want to select.

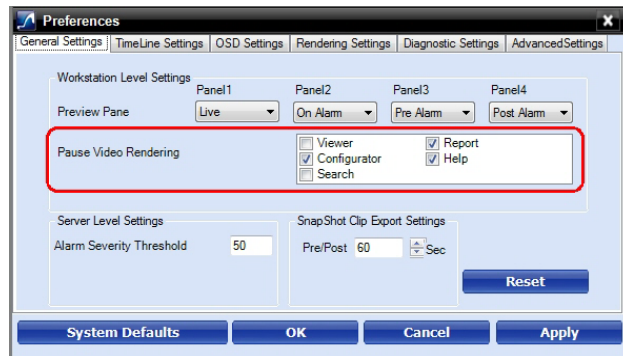


Figure 3-13 Settings for pausing the Video Rendering

3. Click **Apply**.
4. Click **OK** to close the dialog box.


Settings for Alarm Preview Pane

When the video related to an alarm is played from the **Alarm** window, the salvo layout changes to a four panel layout. You can define the video display for each panel namely, Pre Alarm, Post Alarm, Live, and On Alarm. The following table defines these options.

Option	Description
Pre Alarm	The video before the occurrence of the event that triggered the alarm is played.
Post Alarm	The video after the occurrence of the event that triggered the alarm is played.
Live	Live video is played.
On Alarm	The video is played from the occurrence of the event that triggered the alarm.

Note: You can view video related to alarms for the cameras connected to MAXPRO NVR. For Pre Alarm, Post Alarm, and On Alarm, the video is played only when the video recording pertaining to the date and time of alarm is available.

To define the video display for each preview panel

1. Click the **Preferences** option in the **User** menu, . The **Preferences** dialog box appears. By default, the **General Settings** tab is selected.
2. Select the video option for each panel corresponding to **Preview Pane**. When you select **Pre Alarm** and **Post Alarm**, a dialog box appears. Select the time in seconds for which you want to view video related to pre alarm and post alarm in the dialog box and click **OK**.

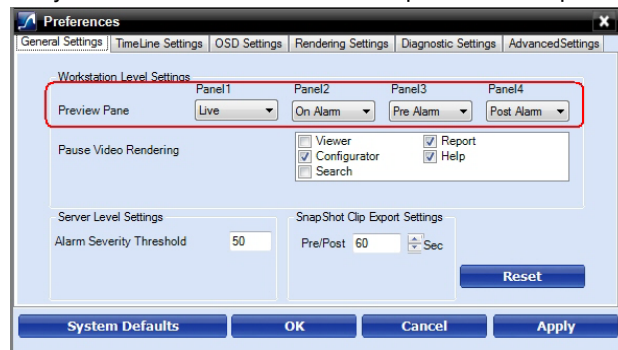


Figure 3-14 Settings for the Alarm Preview Pane

3. Click **Apply**.
4. Click **OK** to close the dialog box.


Setting the Alarm Threshold Value

Each event type supported in the NVR has a pre-defined **Severity Level** value associated to it. When the event occurs, the value is compared with the value in the **Alarm Severity Threshold** box in the **Preferences** dialog box. The alarm is triggered only when the **Severity Level** value is greater than the **Alarm Severity Threshold** value.

For example, the alarm is triggered if the **Severity Level** for an event is 50 and the **Alarm Severity Threshold** value is 40.

Note: Severity level for alarms are displayed in the **Alarm** window, which is described in the [Alarms](#) section.

To set the Alarm Severity Threshold value

1. Click the **Preferences** option in the **User** menu, . The **Preferences** dialog box appears. By default, the **General Settings** tab is selected.
2. Under **Server Level Settings**, type an **Alarm Severity Threshold**.

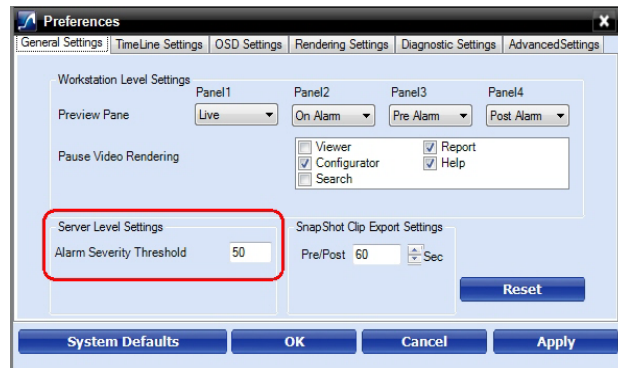



Figure 3-15 Setting the Alarm Threshold

3. Click **Apply**.
4. Click **OK** to close the dialog box.

Configuring the Snapshot Clip Export Settings

You can configure the time interval for the exported snapshot.

To configure the time interval for the exported snapshot

1. Click the **Preferences** option in the **User** menu, . The **Preferences** dialog box appears. By default, the **General Settings** tab is selected.
2. Under **SnapShot Clip Export Settings**, select the **Clip Export** time in seconds.

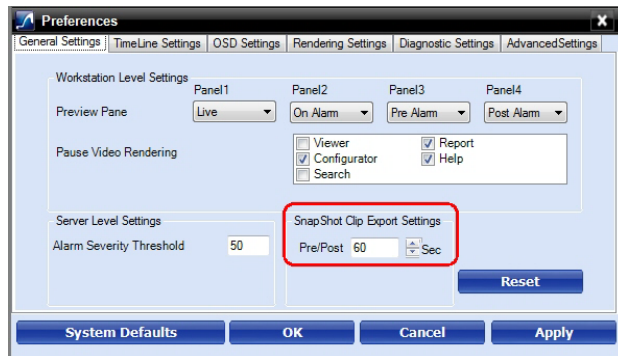



Figure 3-16 Settings for SnapShot Clip Export

3. Click **Apply**.
4. Click **OK** to close the dialog box.

Configuring the OSD Settings

You can configure the OSD settings to change the properties such as type, color, and size of the text that appears over the video displayed in a panel.

To set the font properties

1. Click the **Preferences** option in the **User** menu, . The **Preferences** dialog box appears.
2. Click the **OSD Settings** tab.

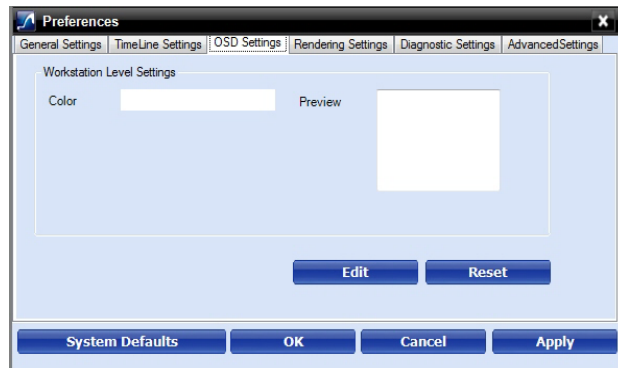



Figure 3-17 OSD Settings tab

3. Click **Edit** and select the font and color properties in the dialog box.
4. Click **OK** to close the font properties dialog box.
5. Click **Apply** in the **Preferences** dialog box.
6. Click **OK** to close the **Preferences** dialog box.

Configuring the Timeline Settings

To configure the timeline settings

1. Click the **Preferences** option in the **User** menu, . The **Preferences** dialog box appears.
2. Click the **Timeline Settings** tab.

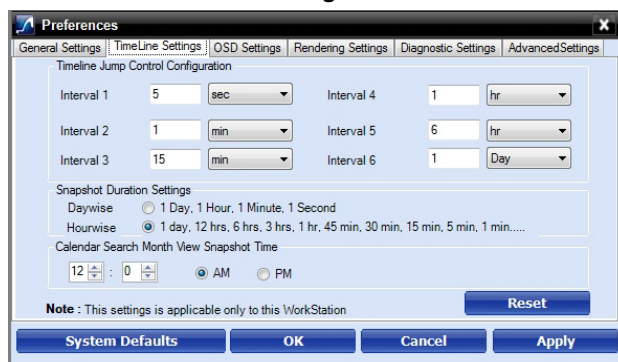



Figure 3-18 Timeline Settings tab

3. Under **Timeline Jump Control Configuration**, set the time for the intervals (**Interval 1** to **Interval 6**) as applicable.
4. Under **Snapshot Duration Settings**, select the **Daywise** or **Hourwise** option button as applicable.
5. Under **Calendar Search Month View Snapshot Time**, type the preferred time and seconds and then click **AM** or **PM** as applicable.
6. Click **Apply**.
7. Click **OK** to close the **Preferences** dialog box.

Configuring the Diagnostic Settings

To configure the diagnostic settings

1. Click the **Preferences** option in the **User** menu, . The **Preferences** dialog box appears.
2. Click the **Diagnostic Settings** tab.

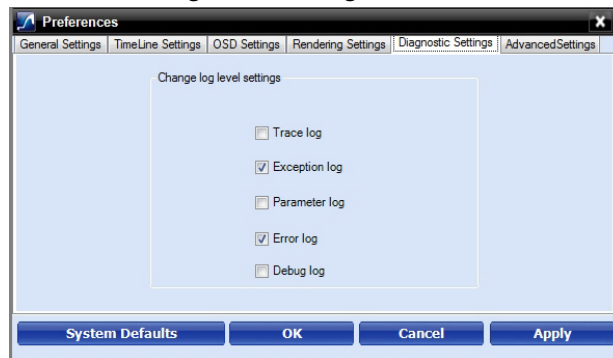


Figure 3-19 Diagnostic Settings tab

3. Under **Change log level settings**, select the check boxes corresponding to logs as applicable.
4. Click **Apply**.
5. Click **OK** to close the **Preferences** dialog box.

Configuring the Advanced Settings

Encryption secures the communication between server and client. You can encrypt the data between client to server using encryption feature. MAXPRO NVR supports three types of encryption modes to communicate with NVR box through client. Each encryption has specific pre-requisites. The following are the pre-requisites for each encryption mode.

- **Default Encryption** : None
- **Windows Authentication Encryption:**
 - System clock time should be synced between client and server machine. It also recommended to use the time sync utility to sync the time between client and server.
 - **Workgroup:** If the machines are in workgroup then the password used by a client to log on as a windows user should be the same as Server PC.
 - **Domain User:** All valid domain users are allowed to login.
- **Certificate Based Encryption:**
 - System clock time should be synced between client and server machine. It also recommended to use the time sync utility to sync the time between client and server.
 - Certificate needs to be installed in all Client and Server PCs. A client without a certificate is not allowed to login.
 - Internet connection is required to Install the certificate.
 - Certificate Based Encryption works across workgroup and domain.

Note: VeriSign Class 3 Code Signing 2010 CA issued certificate is tested for certificate based encryption.

To configure the Advanced settings


1. Click the **Preferences** option in the **User** menu, . The **Preferences** dialog box appears.
2. Click the **Advanced Settings** tab.



Figure 3-20 Advanced Settings Tab

3. Under Application Security Settings, select the **Default Encryption** or **Windows Authentication Encryption** option button as applicable.
Or

If you select the **Certificate Based Encryption** option button, then certificate is used to encrypt the data between client and server. To encrypt the data using **Certificate Based Encryption** then perform the following:

- a. Browse the certificate (.pfx file).
- b. Type the **Certificate Password** and then click the **Import Certificate** button to import the certificate.

Note: You can also import the certificate from the following link.
[http://technet.microsoft.com/en-us/library/cc776889\(v=ws.10\).aspx](http://technet.microsoft.com/en-us/library/cc776889(v=ws.10).aspx)

4. Click **OK**. A services restarting progress bar is displayed. Its takes several minutes to restart all the services.

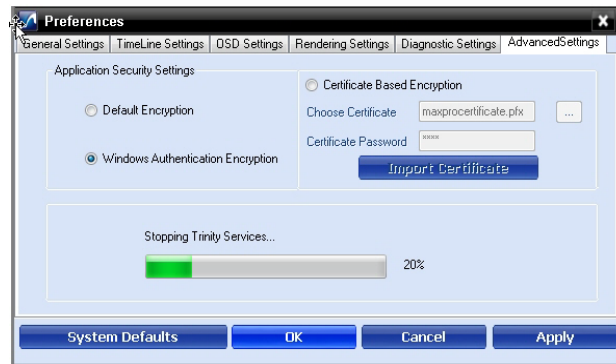


Figure 3-21 Advance Settings Tab Service Restart

Note: All services will be restarted and all clients will be auto-reconnected.

5. Click **Apply** to close the **Preferences** dialog box.

Configuring the Default Settings

To apply the default settings

1. Click **Reset** to apply default settings while setting preferences.
2. Click **System Defaults** to apply the system default settings while setting preferences.

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Configuring MAXPRO NVR

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Overview

The MAXPRO NVR configuration task is performed only by the user having the “NVR Administrator” role. This is the initial task performed after the setting up the MAXPRO NVR system.

Note: For a user having the “Operator” role, the contents in this chapter serve as a reference.

MAXPRO NVR configuration involves the following tasks:

- Configuring the System settings
- Configuring the Disk settings
- Configuring the Cameras
- Managing Analog Cameras
- Configuring the Input and Output for an Analog camera
- Configuring the Schedules
- Configuring the Input and Output for an IP camera
- Configuring the Sequences
- Performing User administration

Configuring the System Settings

The System settings enable in configuring the following:

- General System Settings
- Event Recording Settings
- Email Settings
- Holiday/Exception Settings for Schedules

To configure the system settings

- Click the **Configurator** tab. The **System** page appears by default.

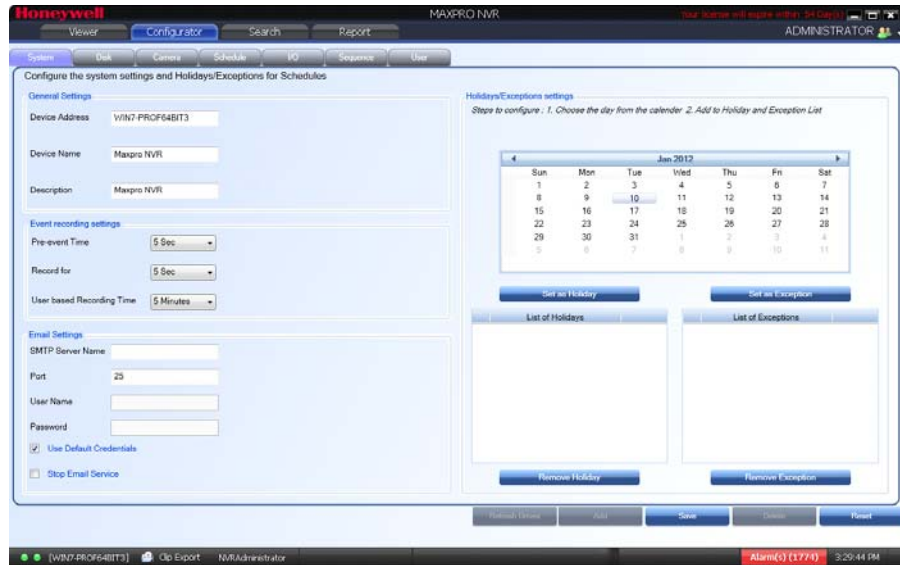


Figure 4-1 System page

General System Settings

The general settings enable configuring of the device address, device name, and device description for MAXPRO NVR.

To configure the general system settings

1. Under **General Settings**

- The **Device Address** displays by default. You can type a new device address as applicable.
- The **Device Name** displays by default. You can type a new device name as applicable.
- The **Description** of the device displays by default. You can type a new description as applicable.

Note: The information in the **Device Address** and the **Device Name** fields is mandatory. **Device Address** must be set to the machine name or IP address of the NVR for the system to work properly.

Event Recording Settings

The event recording settings enable configuring of the times associated to video motion detection and user based recording.

2. Under **Event Recording Settings**

- The **Pre-event Time** (the length of time (in seconds) recording takes place before motion is detected) and displays by default. Select a new **Pre-event Time** as applicable. You can set this value from NONE to 15 seconds.

Note: The default Pre-event Time is 5 seconds.

- The default **Record for** time is 30 seconds. This is the amount of time that the NVR records or boosts recording frame rate after the motion event trigger time. You can set this value from 5 seconds to 5 minutes.

Note: Honeywell recommends that you retain the default setting of 30 seconds to get optimal recorded time on an event.

- The **User based Recording Time** (duration for which the recording is done after the user action) displays by default. Select a new **User based Recording Time** as applicable. The user based recording is the recording initiated by the user manually and is applicable for all the cameras connected to MAXPRO NVR.

Note: To start user based recording, right-click the panel displaying live video and click **Start Recording**. To stop the recording, right-click the panel displaying live video and click **Stop Recording**.

Email Settings

The email settings enable configuring of the SMTP server settings for email communication of events.

3. Under **Email Settings**

- Type the **SMTP Server Name**.
- The **Port** displays by default. Type a new **Port** number as applicable.
- Type the **User Name** of the user.
- Type the **Password** of the user.

Note: Select the **Use Default Credentials** check box if you want to use the credentials that are used while logging on.

Note: Select the **Stop Email Service** check box, if you do not want to send an email from the configured settings.

Holidays/Exceptions Settings

The holidays/exceptions settings enable setting of the holiday and exceptions for schedule based video recording.

4. Under **Holidays/Exceptions**

To set holidays and exceptions

- Select a day from the calendar, and click **Set as Holiday** to set the selected day as a holiday. The selected holiday displays under **List of Holidays**.
- Select a day from the calendar, and click **Set as Exception** to set the selected day as a exception. The selected exception displays under **List of Exceptions**.

To remove holidays and exceptions

- Under **List of Holidays**, select the check box for the holiday you want to remove, and then click **Remove Holiday**.
- Select the check box for the exception you want to remove, and click **Remove Exception**.

5. Click **Save** to save the information or click **Reset** to clear the information entered.

Configuring the Disk Management Settings

Disk Management helps you to configure the disk settings for saving the recorded video. All the drives available on the MAXPRO NVR system are automatically added in the **Disk Management** page.

To configure the Disk Management settings

1. Click the **Configurator** tab. The **System** page displays by default.
2. Click the **Disk** tab to open the **Disk Management** page.

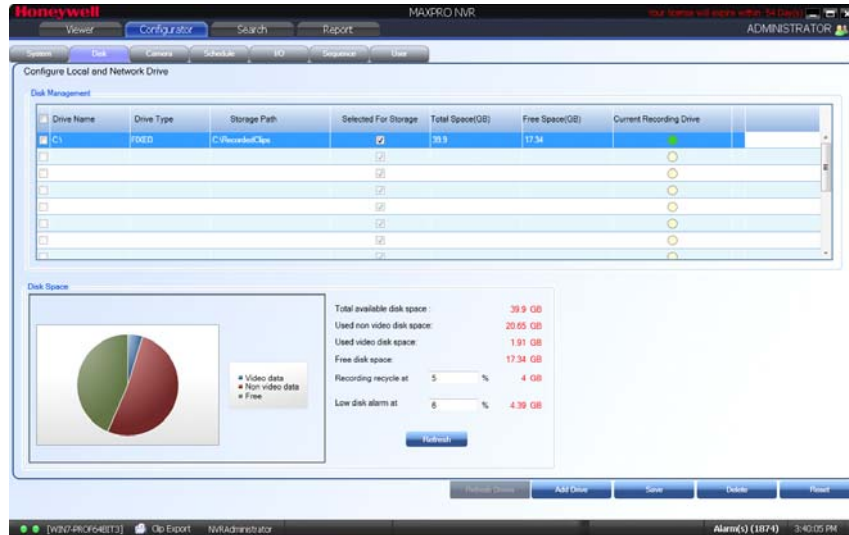


Figure 4-2 Disk Management page

All the drives available on the MAXPRO NVR system are listed.

Note: By default, the check boxes corresponding to all the drives except C:\ are selected. C:\ is reserved for the Operating System data.

Caution: It is recommended that you do not choose the operating system drive for saving the camera recordings (as a video storage drive). Selecting an Operating System drive for video storage can lead to system instability.

3. The following information displays under **Disk Management**.
 - **Drive Name** - displays the drive name such as C:\, D:\ and so on.
 - **Drive Type** - displays the drive type (Fixed or Network).

Note: By default, only the fixed drives are listed. See [step 5](#) to explicitly add a network drive or fixed drive.

- **Storage Path** - displays the default storage path for saving the recorded video. You can type a new path for saving the recorded video
- **Selected for Storage** - By default, this check box is selected for all the fixed drives that are listed except C: To disable video recording on a particular drive, clear the **Select for Storage** check box corresponding to the drive.
- **Total Space (GB)** - displays the total space available on the drive.
- **Free Space (GB)** - displays the free space available on the drive.
- **Current Recording Drive** - displays a status indicator indicating that recording is taking place on the drive. "Green" indicates that current recorded video is saved on the drive.

4. Under Disk Space

The overall drive statistics specified for the recorded video at any point of time is indicated by the following fields:

- **Total available disk space** - displays the total storage space available on the drives used for saving the recorded video.
- **Used non video disk space** - displays the disk space used by non video data on the drives.
- **Used video disk space** - displays the disk space on the drives used for saving the recorded video.
- **Free disk space** - displays the free disk space available on the drives.

You can also view a graphical illustration of the drive statistics with legends for each of the above fields.

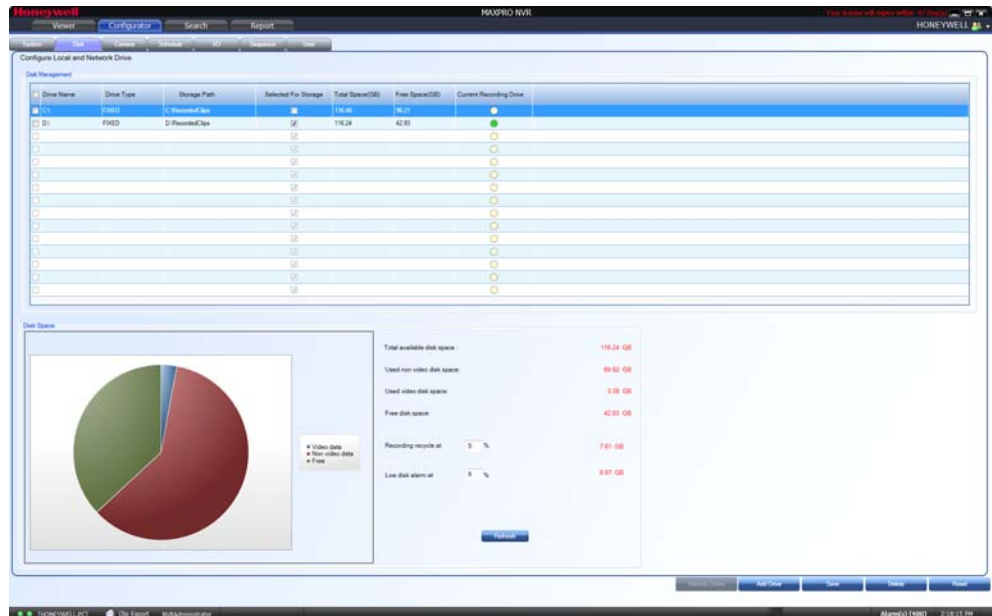


Figure 4-3 Graphical Illustration

- In the **Recording recycle at** box, type a value. The Recording recycle refers to a state when the oldest video recordings are automatically deleted, if there is no disk space on the drives for new video recordings.
- In the **Low disk alarm at** box, type a value. The Low disk alarm refers to a state when the space on the drives for video storage is nearing the maximum size of the drives.

Caution: The **Low disk alarm at** value must be always greater than the **Recording recycle at** value.

Note: Click **Refresh** to refresh the information under **Disk Space** at any point in time.

5. Click **Add Drive** to add a fixed drive or a network drive.
 - The fixed drive that you are adding must be available on the MAXPRO NVR system, else an “**Invalid Drive**” text displays in the **Total Space (GB)** column.
 - Add a network drive in the following format: \\<IP address >\<folder name> for example, \\192.168.1.12\Recorded Clips.

Note: The Network drive added must be valid with proper folder permissions set for the installed default user, else an “**Invalid Drive**” text displays in the **Total Space (GB)** column.

Caution: Please exercise caution while using a network drive as a video storage drive since network interruptions and network performance can lead to loss of video recordings.

6. Click **Save** to save the information or click **Reset** to clear the information entered.

Note: To remove a drive, select the check box corresponding to the drive, and then click **Delete**.

Configuring the Cameras

Cameras are sources for a video input in MAXPRO NVR. The maximum number of cameras that can be configured in MAXPRO NVR depends on the model. You can add the following types of cameras:

- **IP Cameras:** MAXPRO NVR Wizard automatically discovers these cameras in the network and adds it to the MAXPRO NVR user interface. See [Adding IP Cameras](#) for more information.
- **Analog Cameras:** User is required to manually add these cameras to the respective channel and configure the camera. See [Adding/Deleting Analog Cameras](#) for more information. The maximum number of analog cameras that you can configure in MAXPRO NVR Hybrid series (XE, SE, PE) is 16.

Adding IP Cameras

The MAXPRO NVR Wizard automatically discovers Honeywell cameras in the network and adds it to the MAXPRO NVR user interface. Alternatively, you can also discover and add all the supported cameras in MAXPRO NVR in the **Camera** page.

To add IP cameras

1. Click the **Configurator** tab. The **System** page displays by default.
2. Click the **Camera** tab to open the **Camera** page.

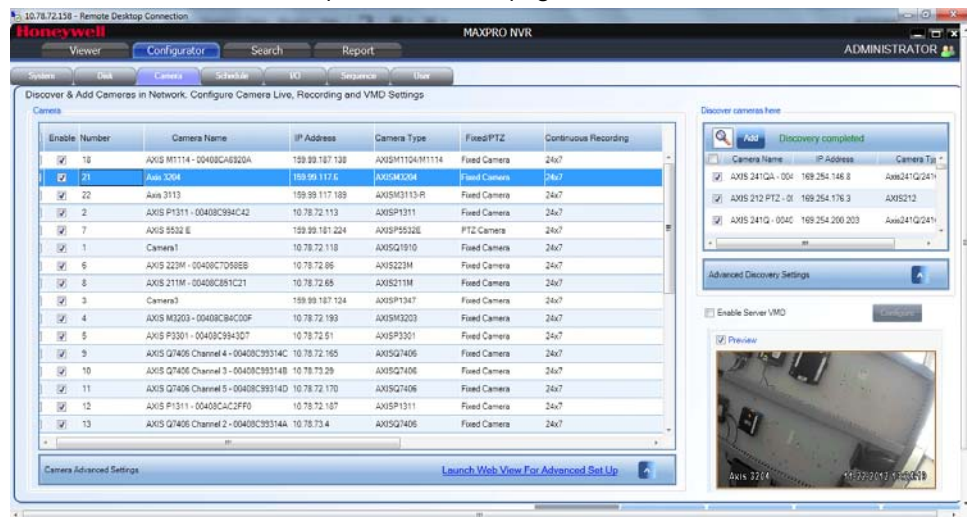



Figure 4-4 Camera page

Note: All Honeywell cameras that are discovered and added using the MAXPRO NVR Wizard appear in the **Camera** page when you first open it.

3. Under **Discover cameras here**

- Click  to discover the cameras in the network. By default, the check boxes corresponding to all the discovered cameras are selected.

Note: The cameras are added based on the **Advanced Discovery Settings**. See [Configuring the Advanced Discovery Settings](#) for more information. Only device integrations with auto discovery support are discovered automatically in the NVR. All other devices need to be added manually.

- Click **Add** to add all the discovered cameras. To add only specific cameras, first clear the check boxes of the cameras you do not want to add, and then click **Add**. The selected cameras appear under the **Camera** pane.
-

Note: The cameras added have the default parameters for all their settings.

4. Under the **Camera** pane, select a camera to change the default parameters for the following settings.
 - **Enable/Disable** - Enables or disables a camera for recording and live video. By default the check box corresponding to a camera to enable live video preview is selected. To disable live video preview, clear the check box corresponding to a camera. The live video appears under **Video Preview** at the bottom right corner of the **Camera** page.
 - **Number** - Displays the camera number. You cannot modify the camera number.
 - **Camera Name** - Displays the camera name. You can type a new camera name limited to a maximum of 50 alphanumeric characters.
 - **IP Address** - Displays the IP address of the camera. You can type the new IP address for the camera as applicable.
 - **Camera Type** - Displays the type of camera.
-

Note:

- For the camera type, “Generic - RTSP”, you must specify the RTSP settings for the camera in the **Camera Advanced Settings** pane. See [RTSP Settings](#) for more information.
 - To add the discovered multi-channel encoders, see [Discovering and Adding Multi-channel Encoders](#).
-

- **Fixed/PTZ** - Indicates whether the camera is a PTZ or fixed.
-

Note: By default, ACUIX cameras are PTZ enabled.

- **Continuous Recording** - All cameras added are defaulted to “24/7” recording. You can choose a different option from the drop-down list.
 - **Event Based Recording** - This is “None” by default. Select an option from the drop-down if you want to do motion based recording.
 - **User Name** - Displays the default user name, “Admin” for the camera. You can type a new user name for the camera as applicable.
-

Note: Change this only if the user has been changed on the camera.

- **Password** - Displays the password, if any, for the camera. You can type a new password for the camera as applicable.

Note: Change this only if the password has been changed on the camera.

Caution: The camera Username and Password in the NVR needs to match the username and password configured on the device for the NVR to be able to connect to the camera and get video.

- **Video Channel Number** - Displays the video channel number for the camera (only applicable to cameras connected through encoders).

5. Click  to open the **Camera Advanced Settings** pane.

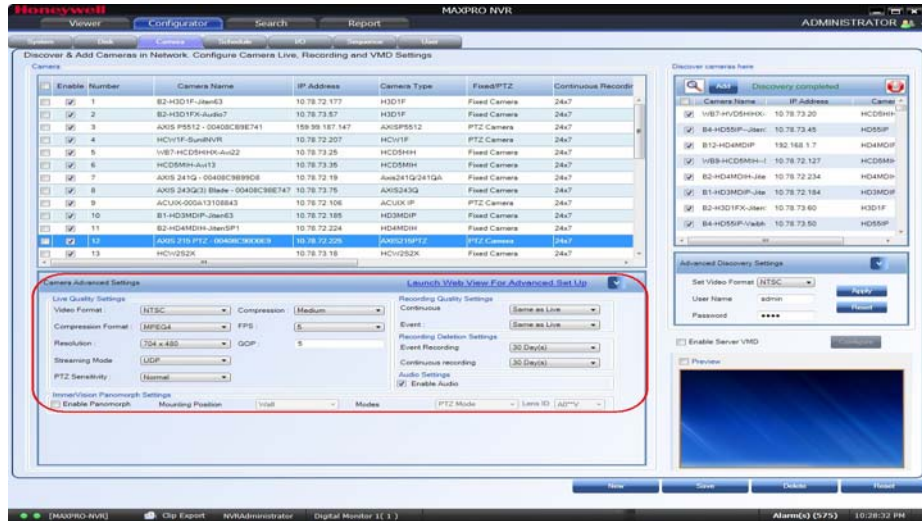


Figure 4-5 Camera Advanced Settings pane

Note: The **Camera Advanced Settings** pane is disabled when there are no cameras available in the system.

6. Click **Launch Web View for Advanced Set Up** to launch the web page for the camera. Use the camera's web page to view IP and firmware settings, bit rate statistics, camera exposure, day night and white balance settings, and set up video motion detection and other analytic events.

7. Under Live Quality Settings

- Select the **Video Format** (NTSC or PAL). The NTSC and PAL are the widely used video formats.
- The **Compression Format** is defaulted to a fixed value based on the camera model.
- The **Resolution** is defaulted to a fixed value based on the camera model (for example, HD3MDIP model defaults to 1280 x 720 resolution).
- Select the **PTZ Sensitivity** for PTZ camera. Available PTZ options are: **Low**, **Normal**, **High** and **Maximum**.

Note: The **PTZ Sensitivity** field is not available for fixed cameras.

- The **Streaming Mode** is defaulted to UDP. You can select TCP streaming mode as applicable.

Note: The **Streaming Mode** is supported only for AXIS and ONVIF Cameras.

- The **Compression** is defaulted to “Medium”. You can select a new Compression ratio as applicable.
- Select the **FPS** for a camera. FPS refers to the number of pictures displayed in exactly one second. FPS is a measure of how much information is used to store and display motion video. The term applies to digital video. Each frame is a still image; displaying frames in quick succession creates the illusion of motion.

Note: For live streaming, 30 FPS is the maximum frame rate in NTSC format, and 25 FPS is the maximum frame rate in PAL format.

- The **GOP** is defaulted to “5”. Type a new **GOP** as applicable. Group of Pictures (GOP) are individual frames (number of pictures) that are grouped together and played back for viewing. A GOP consists of “IFrame” picture type that represents a fixed image independent of other picture types. Each GOP begins with this type of picture.

8. Under Record Quality Settings

- Select the FPS for **Background** recording.
- Select the FPS for **Event** based recording.

Live/Recording Quality can be varied by controlling GOP. The formula for this is calculated as follows: Recording Quality resulting FPS = Live FPS/(GOP*I Frame Number for recording).

For example, in the following table if Live FPS is configured as “30” and Continuous recording is set to record “Every I frame” and Event recording is set to “Same as Live” with GOP value set to “5”, the result is 6 FPS continuous recording quality and 30 FPS event recording quality.

Note: GOP value below 5 may not be achieved from all the cameras.

Live settings		Record quality resulting FPS			
FPS	GOP	Same as Live	Every 1 frame	Every 2nd I frame	Every 3rd I Frame
30	2	30	15	7.5	5
30	3	30	10	5	3.33
30	5	30	6	3	2
30	10	30	3	1.5	1
30	15	30	2	1	0.67
30	16	30	1.88	0.94	0.63
30	20	30	1.5	0.75	0.5
30	30	30	1	0.5	0.33

9. Under **Recording Deletion Settings**

- Select the **Event Recording** clip deletion duration.
- Select the **Continuous Recording** clip deletion duration.

Caution: For Recording Deletion Settings, please exercise caution with **Keep Forever** clip deletion duration setting. Recordings with **Keep Forever** are stored permanently and are not deleted/overwritten even if the disk becomes full. They can be deleted only manually from the **Search** tab.

10. Under **Audio Settings**, select the check box to enable audio.

Note: 1-way audio (camera to NVR) is supported for specific IP cameras. Please refer to the compatibility list on HOTA for the models supported.

11. Click **Save**.

Managing Analog Cameras

MAXPRO NVR Hybrid now supports Analog Capture card through which you can connect up to 16 analog cameras. The following figures depict the MAXPRO NVR Hybrid SE, XE and PE box with analog capture card.

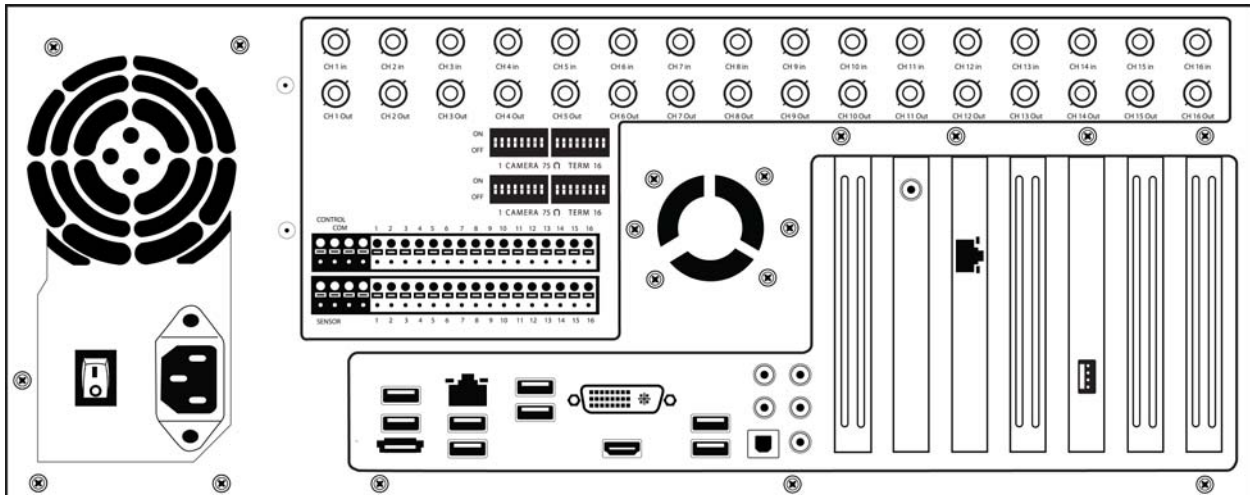


Figure 4-6 MAXPRO NVR Hybrid SE Rear View

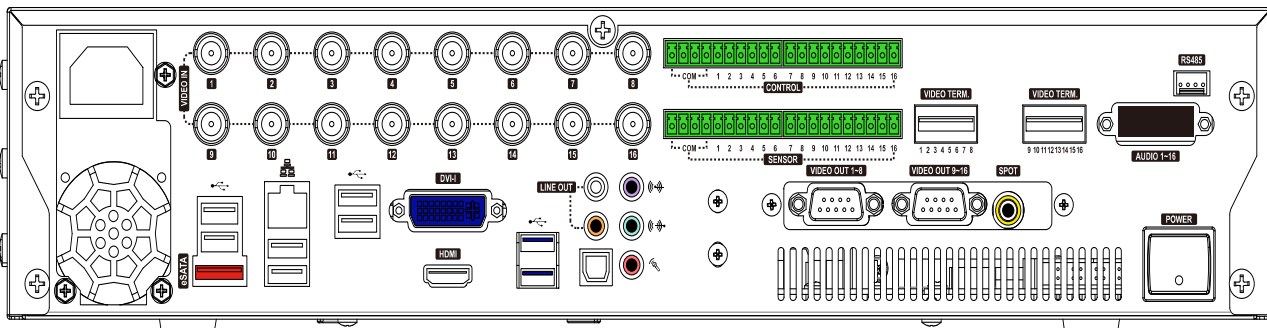


Figure 4-7 MAXPRO NVR Hybrid XE Rear View



Figure 4-8 MAXPRO NVR Hybrid PE Rear View

Adding/Deleting Analog Cameras

To add/delete analog cameras

1. Connect the required number of cameras manually to analog capture card. The maximum number of analog cameras can be connected is 16.
2. Click the **Configurator** tab. The **System** page displays by default.
3. Click the **Camera** tab to open the **Camera** page.

Note: All analog cameras that are pre-configured in the factory image appear in the Camera page when you first open it.

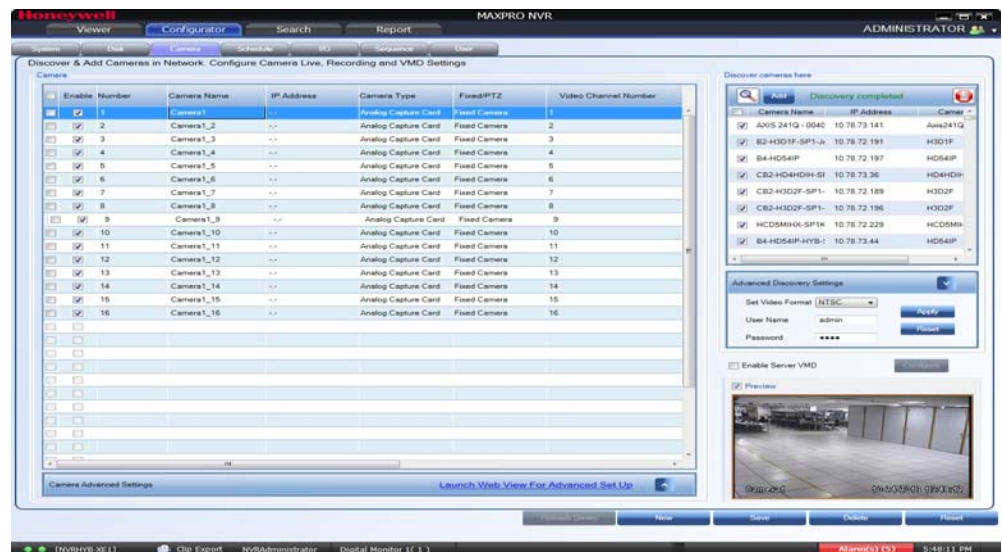


Figure 4-9 Adding or Deleting Analog Camera

- Click **New**. A new camera is added in the camera pane.
 - Under Camera Type** - Displays the type of camera. Select the **Analog Capture Card** option to add analog cameras.

To delete Analog Camera

- Select the required analog camera channel check box.
- Click **Delete**. A confirmation message appears “Do you really want to delete camera(s)”
- Click **Yes** to delete.

Configuring Analog Cameras

Pre-requisite to configure analog cameras: Ensure that you connect the required number of cameras manually to the analog capture card and then perform the below steps.

To configure analog cameras

- Click the **Configurator** tab. The **System** page displays by default.
- Click the **Camera** tab to open the **Camera** page.

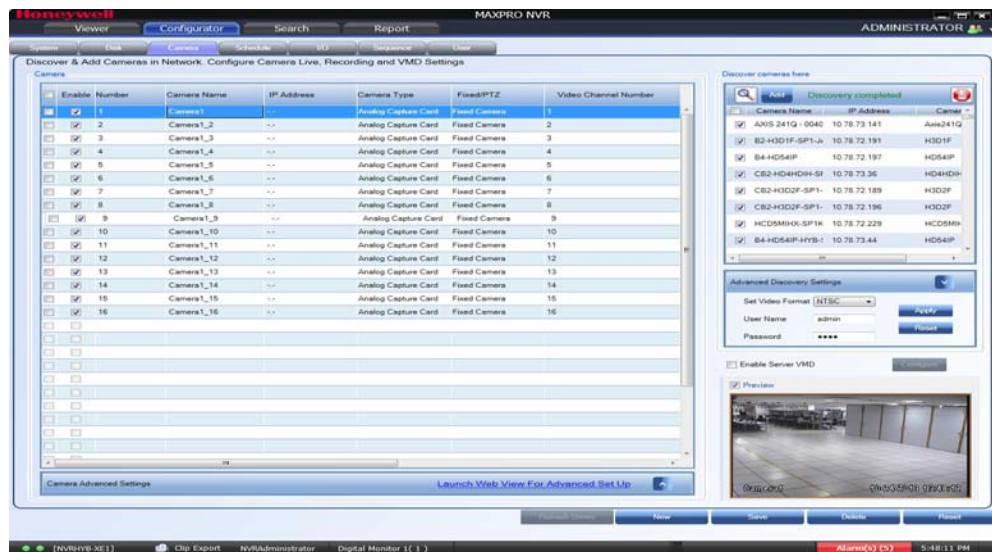


Figure 4-10 Camera page

Note: All analog cameras that are pre-configured in the factory image appear in the Camera page when you first open it.

3. Under the **Camera** pane, select a camera to change the default parameters for the following settings.
 - **Enable/Disable** - Enables or disables a camera for recording and live video. By default the check box corresponding to a camera to enable live video preview is selected. To disable live video preview, clear the check box corresponding to a camera. The live video appears under **Video Preview** at the bottom right corner of the **Camera** page.
 - **Number** - Displays the camera number. You cannot modify the camera number.
 - **Camera Name** - Displays the camera name. You can type a new camera name limited to a maximum of 50 alphanumeric characters.
 - **IP Address** - This is **-.-** by default for analog cameras. You can provide any valid IP if required.
 - **Camera Type** - Displays the type of camera. Select the **Analog Capture Card** option to add analog cameras.
 - **Fixed/PTZ** - Indicates whether the camera is a PTZ or fixed.
 - **Continuous Recording** - All cameras added are defaulted to “24/7” recording. You can choose a different option from the drop-down list.
 - **Event Based Recording** - This is “None” by default. Select an option from the drop-down if you want to do motion based recording.
 - **Video Channel Number** - Specify the physical slot number of the analog capture card.

Note: Based on the Analog Capture Card model, system will prompt a message to add all supported channels by default. Click **Yes** to add all supported channels or **No** to add only 1 channel.

4. Click  to open the **Camera Advanced Settings** pane.

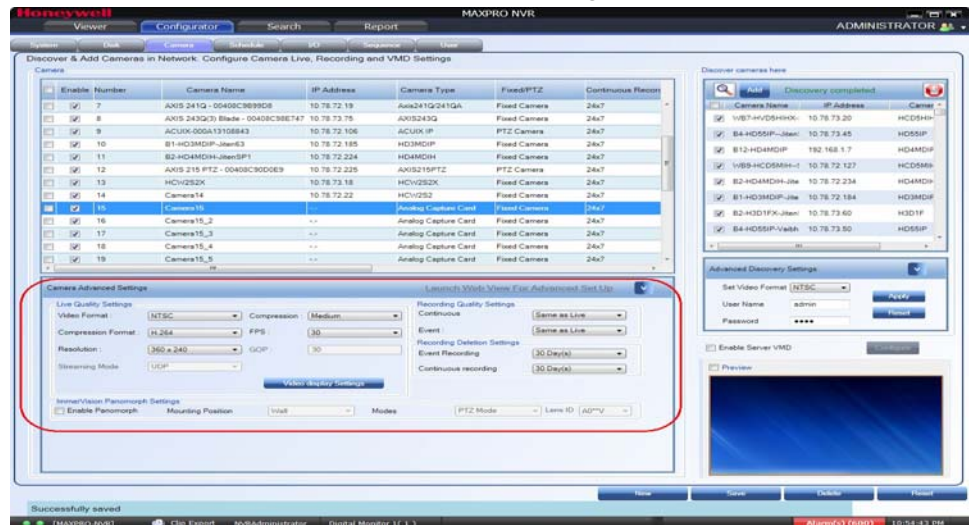


Figure 4-11 Camera Advanced Settings pane

Note: The **Camera Advanced Settings** pane is disabled when there are no cameras available in the system.

5. Under **Live Quality Settings**

- Select the **Video Format** (NTSC or PAL).
 - The **Compression Format** is defaulted to a fixed value based on the camera model.
 - By default the highest supported **Resolution** (720 X 480) is selected with maximum frame rate supported by the card.
 - Select the **FPS** for a camera. FPS refers to the number of pictures displayed in exactly one second. FPS is a measure of how much information is used to store and display motion video. The term applies to digital video. Each frame is a still image; displaying frames in quick succession creates the illusion of motion.
 - Type the **Hardware ID**, if the analog camera type is a PTZ camera. The hardware ID is based on the PTZ Protocol.
-

Note: Based on the model, Analog Capture card supports only 480 frames @ CIF. By default all the 16 cameras will be added. You can add/remove the number of cameras based on the range of FPS and supported resolution.

- Select the **PTZ Sensitivity** for a PTZ camera. Available PTZ options are: **Low**, **Normal**, **High** and **Maximum**. For advanced PTZ settings see [Advanced PTZ Settings](#).
- The **Compression** is defaulted to "Medium". You can select a new Compression ratio as applicable.

6. Under **Record Quality Settings**

- Select the FPS for **Background** recording.
- Select the FPS for **Event** based recording.
By default GOP is equivalent to FPS (1 I-frame per second).

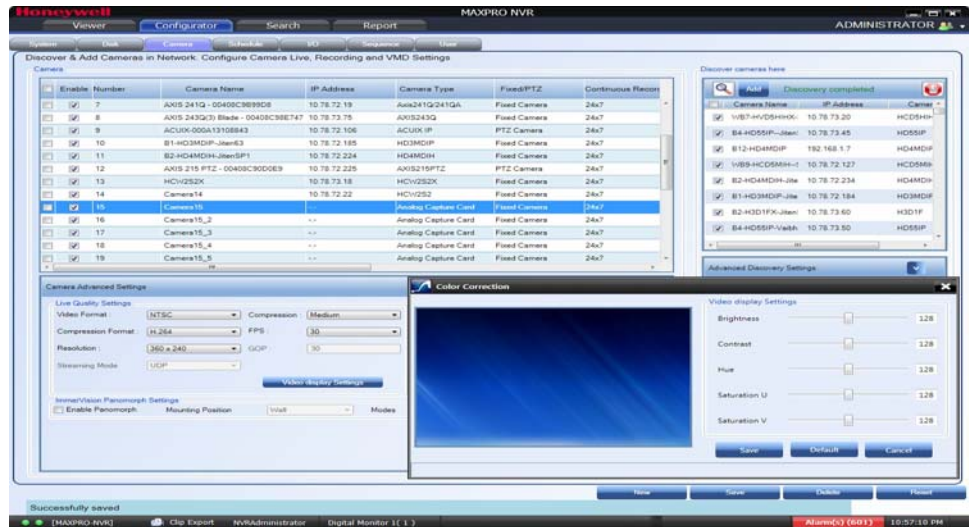
7. Under **Recording Deletion Settings**

- Select the **Event Recording** clip deletion duration.
 - Select the **Continuous Recording** clip deletion duration.
-

Caution: For Recording Deletion Settings, please exercise caution with **Keep Forever** clip deletion duration setting. Recordings with **Keep Forever** are stored permanently and are not deleted/overwritten even if the disk becomes full. They can be deleted only manually from the **Search** tab.

8. Click **Video Display Settings**. The **Color Correction** dialog box appears.

Note: The **Video Display Settings** feature is available only on the desktop local client on the NVR Server machine.



9. Under Video Display Settings

- Move the slider right or left to increase or decrease the **Brightness**, **Contrast**, **Hue**, **Saturation U** and **Saturation V**.
Or
Type the required value in the respective boxes to adjust the video display settings.
Or
Click **Default** to set the default values.

10. Click **Save** to save the display settings.


11. Click **Save** to save the configuration.

Advanced PTZ Settings

MAXPRO NVR now supports the advanced PTZ settings for an analog PTZ camera.

Note: Advanced PTZ settings are available only for analog PTZ cameras.

To set the advanced PTZ settings

1. Select the required analog PTZ camera from the camera pane.
2. Click  to open the **Camera Advanced Settings** pane.

3. Under Advanced PTZ Settings

- Select the **PTZ Protocol**. Available PTZ Protocol options are **VCL, Pelco P, Pelco D, Maxpro, GE Kalatel**.

Note: Vicon protocol is not supported in this release.

- Select the **COM Port name**. Available **COM Port names** options are **COM 1, NONE**
- Select the required **Baud Rate**. Available Baud Rates options are **110, 300,600, 1200, 2400, 4800, 9600, 14400, 19200, 38400, 56000, 57600, 115200, 128000, 256000**.
- Select the **Stop Bits**. Available stop bits options are 1 and 2.
- Select the **Parity**. Available Parity options are **ODD** and **EVEN**.
- Select the **Data Bits**. Available data bits options are 7 and 8.

4. Click Save.

Configuring the Input and Output for an Analog Camera

The input and output hardware configuration for an analog camera in MAXPRO NVR Hybrid is configured by default and when you add an analog camera, then by default the camera is mapped to their respective input and output ports. The first input/output port is mapped to the first camera, similarly the second camera is mapped to the second input/output port of the box and so on. The input output combinations cannot be mapped to any other analog or IP camera other than the default configuration.

The below screen depicts the typical input and output ports (Highlighted in Red) for MAXPRO NVR Hybrid XE and SE Box. The **SENSOR** is the input port and **CONTROL** is the output port for both Hybrid XE and SE Box.

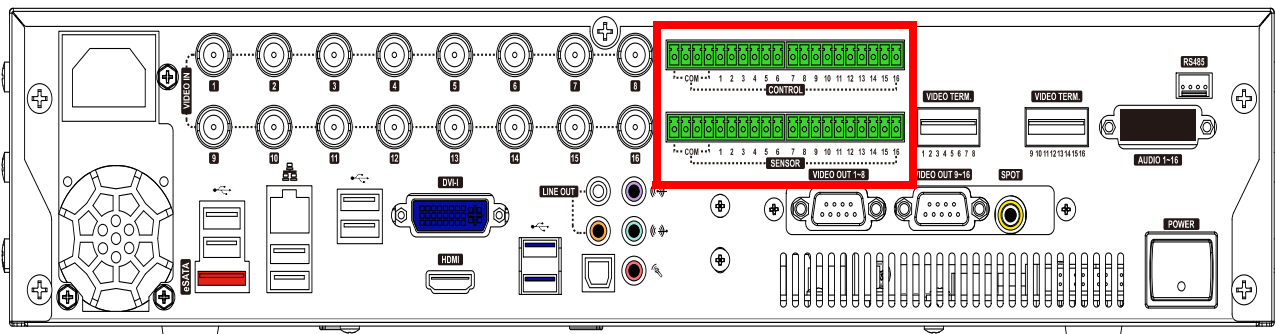


Figure 4-12 Input and Output Ports For MAXPRO NVR Hybrid XE

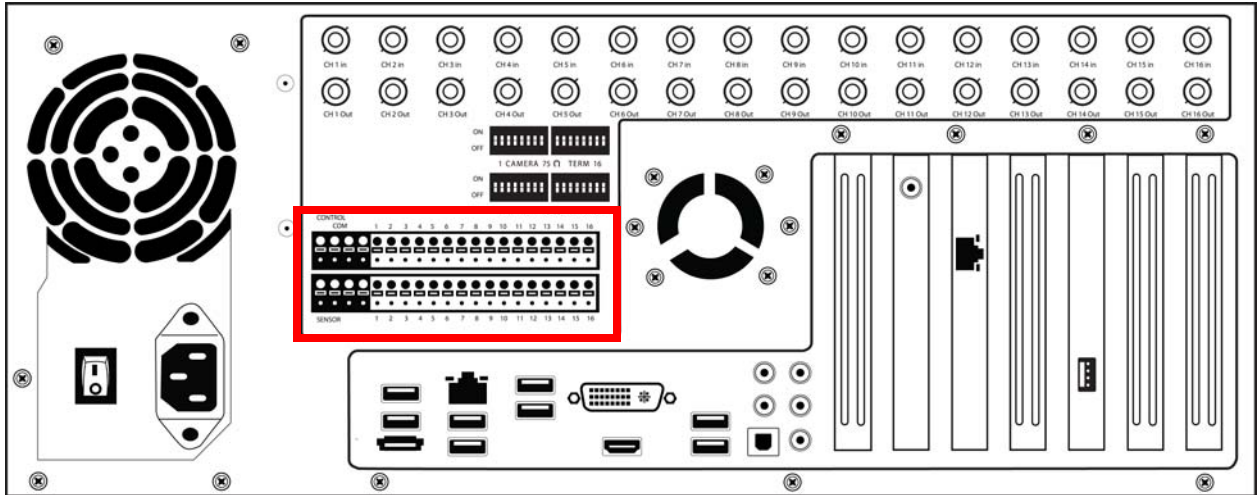


Figure 4-13 Input and Output Ports For MAXPRO NVR Hybrid SE

Spot Monitoring

The Spot Monitoring feature allows you to view the live video of analog cameras from the box. You need to connect a physical monitor to the specific port as shown in [figure 4-12](#) and [figure 4-13](#) for both XE and SE box to view the live video.

Configuring the Panomorph Settings for the Cameras with Immervision Support

ImmerVision's Panomorph lens enables 360 degree Field of View (FOV). This lens is compatible with industry standard analog and IP cameras.

By using the Panomorph lens with your IP/ Analog camera, you can:

- View live, record and playback the complete 360x180 FOV.
- Eliminate blind spots in the FOV.
- Increase the video surveillance coverage.
- Detect, track and analyze throughout the entire area.
- Playback the recorded video with digital watermark for evidence purposes.

Caution: Only Immervision certified camera models have this feature enabled. Before configuring this feature, please check whether your camera has the Panomorph lens.

To configure Panomorph settings

1. On the **Camera** page, under **Panomorph Settings**

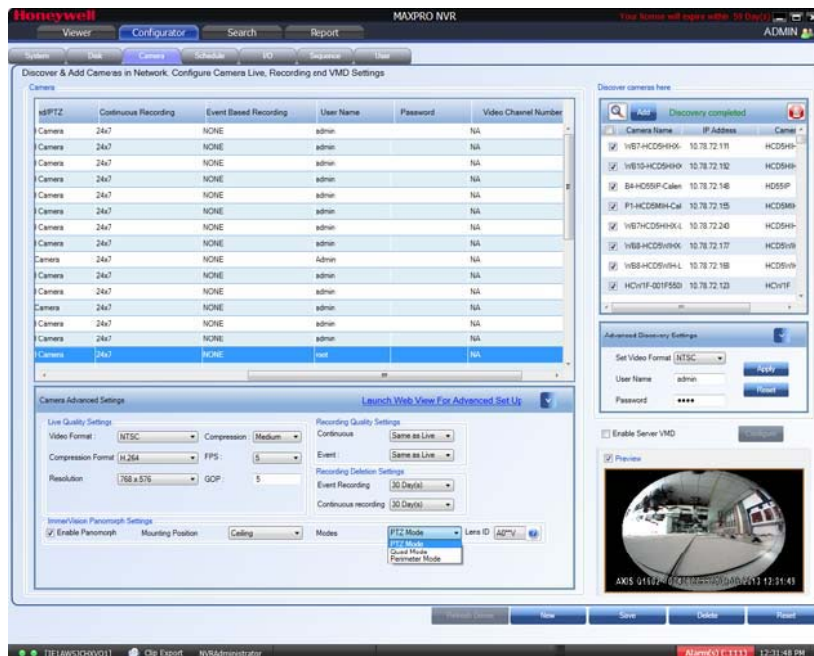


Figure 4-14 Panomorph Settings

- Select the **Enable Panomorph** check box to enable the Panomorph feature.
- Select the **Mounting Position**. You have three options to choose from: **Wall**, **Ceiling**, and **Ground**.
- Select the **Default Mode** for the camera. The available modes are **PTZ Mode**, **Quad Mode**, and **Perimeter Mode**.

Note: The default mode is **PTZ Mode**.

2. Click **Save**.

Note:

- To view live video from Immervision certified cameras, see [Video Viewing Options from Immervision Enabled Cameras](#).
 - The recommended Aspect Ratio for Immervision Certified cameras is 4:3.
-

Configuring Oncam Grandeye Cameras

The integration of the unique 360-degree Oncam Grandeye H.264 IP cameras in MAXPRO NVR enables video surveillance, acquisition and tracking that identifies suspicious behavior enabling the interrogation and verification of a potential threat. This in-turn provides the necessary intelligence needed to make a measured response to any critical situation. Grandeye's customized security solutions are designed to address to meet all of today's security and liability requirements.

MAXPRO NVR supports the following types of Oncam Grandeye H.264 cameras.

- Halocam
- Evolution

The Halocam series cameras support the following views, that help in effective video surveillance of a site:

- Halocam - HalfPanorama2(OnCam-GE-Hal-HalfPanorama2)
- Halocam - FishEye(OnCam-GE-Hal-FishEye)
- Halocam - VGAFishEyeWithPan(OnCam-GE-Hal-VGAFishEyeWithPan)
- Halocam - Composite1 (OnCam-GE-Hal-Composite1)
- Halocam - Composite2 (OnCam-GE-Hal-Composite2)
- Halocam - VGAFishEye (OnCam-GE-Hal-VGAFishEye)

The Evolution series cameras support the following views, that help in effective video surveillance of a site:

- Evolution - FishEye(OnCam-GE-Evo-Fisheye)

Adding Oncam Grandeye Cameras

The Oncam Grandeye cameras are not discovered automatically in MAXRPRO NVR, hence you must add these cameras manually.

Note: For Evolution cameras, please first set the active camera stream (resolution) on the camera web page. Please select the same settings as camera active stream in the NVR-Camera Advanced Settings for video to be displayed.

To add Oncam Grandeye cameras

1. On the **Camera** page, click **New**.

2. Enter the following information:

- **Camera Name**
- **IP address**
- **Camera Type**
- **Fixed/PTZ**
- **Continuous Recording**
- **Event Based Recording**
- **User Name** - Type the default user name, "admin".
- **Password** - Type the default password, "admin".
- **Video Channel Number**

3. Click  to open the **Camera Advanced Settings** pane.

4. Under **Grandeye Panorama Settings**

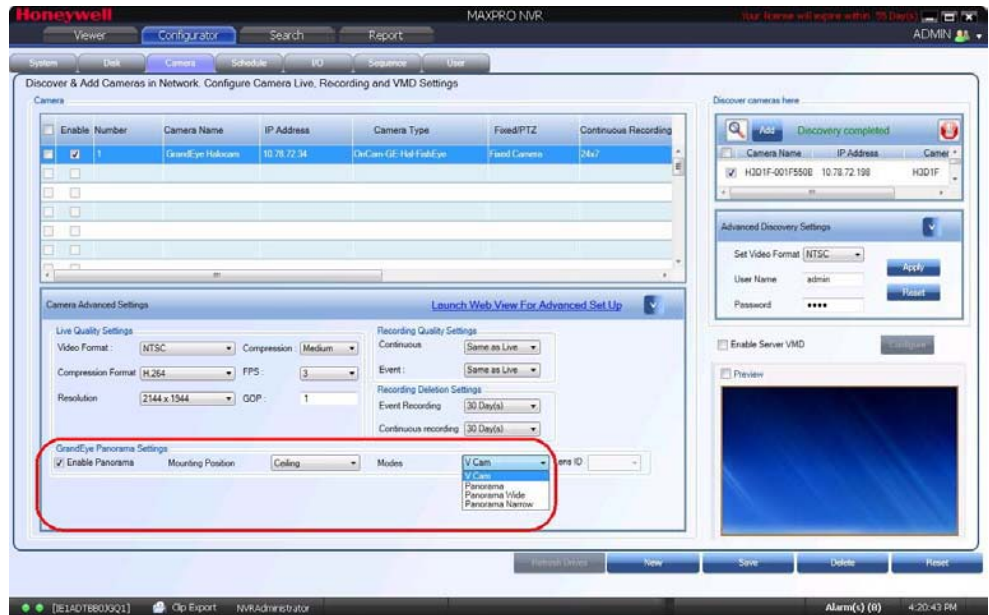


Figure 4-15 Grandeye Panorama Settings

- Select the **Enable Panorama** check box to enable the panorama settings.

Note: For the streamers other than FishEye, the Enable Panorama options are not visible.

- Select the **Mounting Position**. The available options are **Wall**, **Ceiling** and **Ground**.
- Select the **Modes**. The available options are **VCam**, **Panorama**, **Panorama Wide**, and **Panorama Narrow**.

Note: The **Mounting Position** and **Modes** are common to both the Halocam and Evolution cameras.

5. Click **Save**.

Image Stream Combinations for Oncam Grandeye Cameras

Each Halocam and Evolution camera works best when configured with a particular resolution and fps. See [Appendix , Image Stream Combinations for Oncam Grandeye Cameras](#) for the optimum resolution and fps configurations for each of the cameras.

Viewing Live Video from Oncam Grandeye Cameras

See [Video Viewing Options from Oncam Grandeye Cameras](#).

Device Characteristics of Oncam Grandeye Cameras

See [Appendix , Device Characteristics of Oncam Grandeye Cameras](#).

Server VMD (Smart VMD)

Video Motion Detection (VMD) is a built-in intelligent feature that enables you to configure motion detection for the live video streamed by MAXPRO NVR using its connected cameras. Configuring motion detection involves defining one or more Region of Interest (ROI) in the field of view. Regions are drawn in the field of view to specify where the motion should be detected or excluded.

The Server VMD running on the MAXPRO NVR provides superior performance comparing to regular VMD, due to its capability to differentiate real object motion from:

- Image or camera noises
- Irrelevant motion due to weather (example: rain, snow)
- Lighting changes

Few cameras have built-in VMD capabilities. There is a provision included in the MAXPRO NVR user interface to manually configure VMD (known as Server-based VMD) for the cameras that do not have the VMD feature built-in them.

Caution: At a time, a camera can be configured in NVR to only have its built-in (camera based VMD) or the Server VMD (Smart VMD) enabled.

Smart VMD-Technology Overview

Smart VMD uses the same detection module as full analytics.

Smart VMD	Traditional VMD (Cameras and Head-ends)
<ul style="list-style-type: none">• Object based- triggers alarms based on moving objects.• Ignores changes in lighting, video noise, and rain.• Ignores other false alarm triggers that affect pixel-based VMD.• Processing at lower frame rate, simple object validation: low CPU requirements.	<ul style="list-style-type: none">• Pixel based - compares image pixels, detects changes with a single threshold.• Does not adapt to changing environment.• Susceptible to nuisance alarms from illumination changes, rain, moving trees.

Detection of Relevant Motion

- Statistical modeling to maintain high detection sensitivity, while filtering out non-salient motion.
- Significant improvement over standard video motion detection.

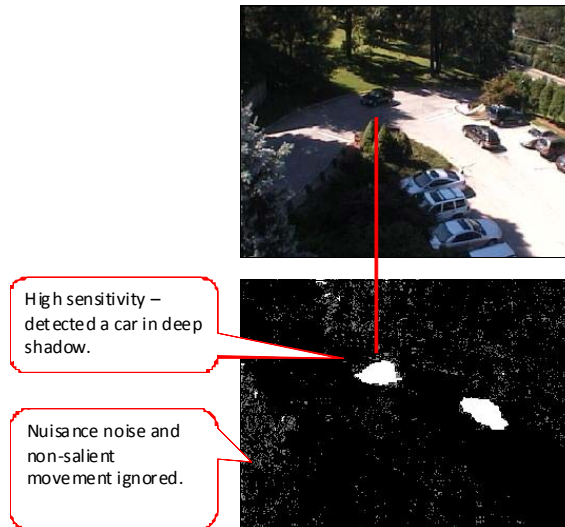


Figure 4-16 *Detection of relevant motion*

To configure Smart VMD

Note: Before enabling Server VMD for a camera configured to stream H.264 or MPEG4 video, please ensure that the GOP size is set to be smaller or equal to the stream frame rate. For objects that do not persist in the region till the stream contains at least 1 iFrame, Smart VMD ignores as noise to reduce false alarms. Example: Insect flying in front of a camera. It is recommended that you configure large enough regions to capture relevant motion in the area of interest. Server VMD is not supported on 360 camera (fisheye or panomorph) views.

1. Select the **Enable Server VMD** check box.
2. Click **Configure**. The **Server VMD Configuration** dialog box appears.
3. Click **Include Region** and a new include region (in green) appears. On the field of view, click and drag the corners of the rectangle to position and resize the region where you want the motion to be detected. Repeat the operation to include more regions.
4. Click **Exclude Region** and a new exclude region (in red) appears. On the field of view, click and drag the corners of the rectangle to position and resize the region where you do not want motion to be detected. Repeat the operation to exclude more regions.
5. To delete a region, select the region from the **Configured Regions** drop-down list, then click **Delete Region**.



Figure 4-17 Server VMD Configuration

Note:

- You can draw a maximum of 10 ROIs (includes **Include** and **Exclude** regions).
- **Include** regions are shown as green rectangles and **Exclude** regions are shown in red rectangles in the field of view.
- Each region is assigned a unique identifier number for easy identification.
- The Exclude region overwrites the Include region. No motion is detected in the area that is inside any of the exclusion regions.

6. Under Alarm Settings

- Type the **Hold Time (sec)**. This indicates the hold time for the motion video after the detected motion stops. When motion is detected and motion video has started being recorded, if motion stops briefly and then resumes within **Hold Time (sec)**, no “Motion stopped” event is generated. This brief gap in detected motion is ignored and motion triggered recording continues without interruption. On the other hand, if motion stops and no new motion is detected within **Hold Time (sec)**, then the “Motion stopped” event is reported. Motion triggered recording is then stopped after additional Post-Alarm duration.

Note: The **Hold Time** range is 0 to 30 seconds.

- The **Object Size Threshold** (the minimum object size required to trigger an alarm) is displayed as a yellow rectangle in the field of view. Click and drag the corners of the rectangle to resize the minimum object size for motion detection.

Note: The Object Size Threshold is a universal threshold across the entire image. By default, the **Object Size Threshold** is set to the smallest size, and therefore even very small motions trigger an alarm. This may not be appropriate for all sites and cameras, and the yellow rectangle size should be adjusted if the default size is not adequate.

7. Click **Save** to save the changes or click **Cancel** to abort the changes.

RTSP Settings

Real Time Streaming Protocol (RTSP) is a control protocol for streaming video over the Internet. It allows you to select the TCP or UDP based streaming modes depending upon what the camera supports. For the camera type "Generic RTSP", you must specify the following RTSP settings.

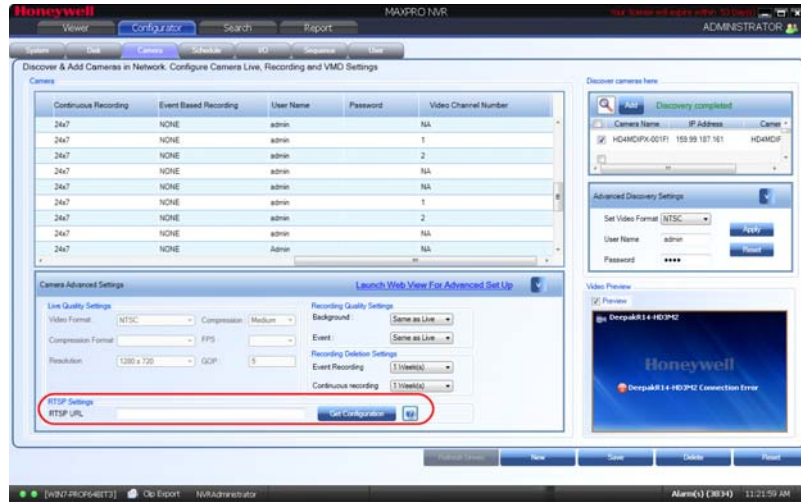



Figure 4-18 RTSP Settings

- Type the **RTSP URL**. Click  for help on RTSP URLs format that can be assigned to different camera types.

Note: The Help that opens lists only a few manufacturers. Most cameras are RTSP, and all RTSP third party cameras can be configured. If the RTSP URL format for a particular camera type is not listed in the Help, then the URL format can be obtained from the camera manufacturer.

- Click **Get Configuration** to get the resolution and compression format for the camera.

Note:

- For RTSP, all settings like FPS must be configured on the camera web page, and the default port **554** must be used.
- If "Get Configuration" fails, a message appears to choose the compression and resolution. You must go to the Camera web page and set both of them, and then configure the same settings in MAXPRO NVR.

8. Click **Save**.

Note: If a particular camera is not discovered by the system, you can add it manually by clicking **New**.

Discovering and Adding Multi-channel Encoders

An Encoder connects to an analog camera using a coaxial cable and converts analog video streams to digital video streams, which can be sent over an IP network.

Each encoder varies based on the number of channels (cameras) supported. Please visit the following URL: <http://www.security.honeywell.com/hota/> for the most up to date list of encoders supported by MAXPRO NVR.

MAXPRO NVR automatically discovers its supported encoders and displays them in the **Discovery** window as shown in the following figure.

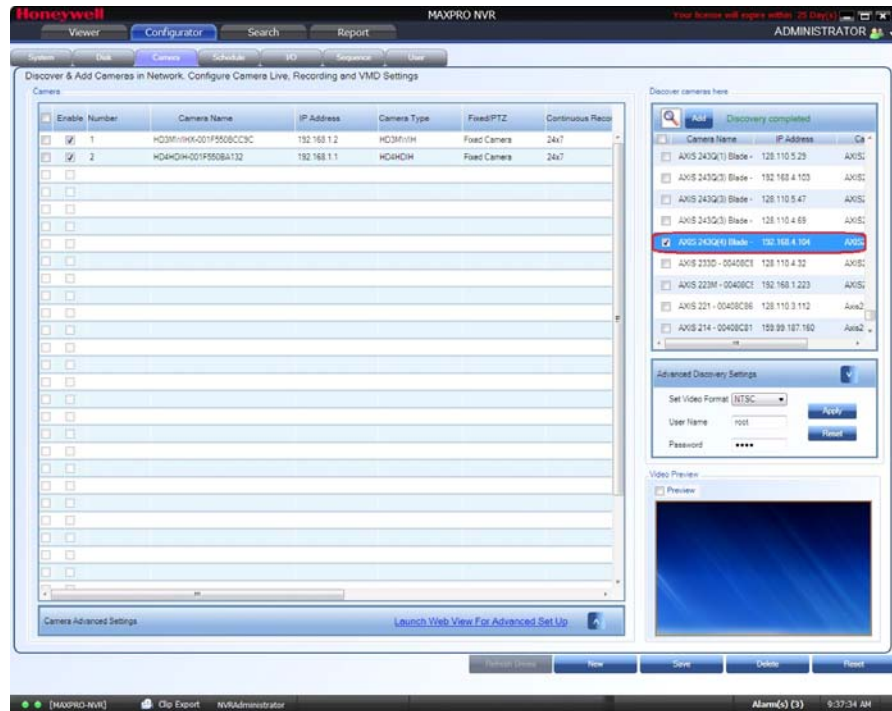


Figure 4-19 Encoder discovery

The encoder is discovered as a single device in the **Discovery** window, and “n” number of cameras (where n is the number of channels supported by the encoder) are added under **Camera** as shown in the following figure.

Note: For AXIS encoders, n+1 streams are typically added (might vary by models) with 1 additional stream providing the matrix view of all cameras. This matrix view added can be deleted if it is not required by the user.

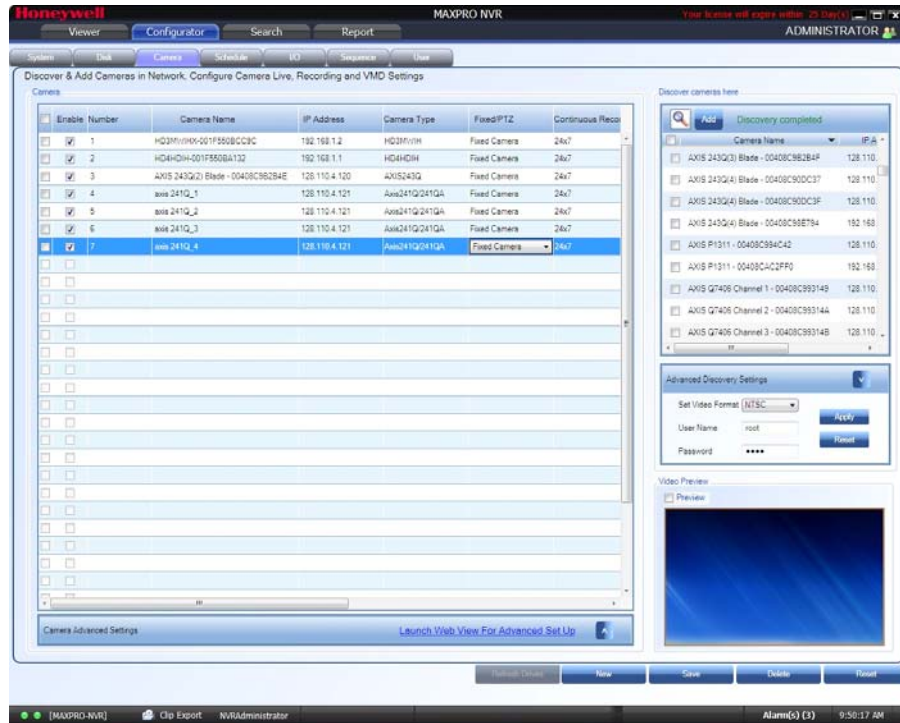


Figure 4-20 Adding the Encoder

Note: The **Video Channel Number** field can be modified, but it is recommended that you do not change the information in this field.

Updating the Cameras

You can modify the settings of a camera to change the camera name, IP address, camera type, fixed/PTZ, advanced camera settings, and so on. You can update the camera settings only if you have admin rights.

To update a camera

1. Click the **Configurator** tab. The **System** page displays by default.
2. Click the **Camera** tab to navigate to the **Camera** page. The list of cameras configured are displayed.
3. Select the row corresponding to the camera you want to modify.
4. Change the settings such as camera name, IP address, and so on.
5. Click **Save**.

Deleting the Cameras

To delete a camera

1. Click the **Configurator** tab. The **System** page displays by default.
2. Click the **Camera** tab to navigate to the **Camera** page.
3. Select the check box corresponding to the camera you want to delete.
4. Click **Delete**. A confirmation message appears at the bottom of the display area.
5. Click **Yes**. The selected camera is deleted.

Configuring the Advanced Discovery Settings

The Advanced Discovery Settings enable you to set the video format (NTSC/PAL), username and password of a camera as it is being added to the NVR from the **Discovery** window. The Username and Password set for the camera in MAXPRO NVR must match the username and password on the camera (actual device) to stream video into MAXPRO NVR.

Note: Advanced Discovery Settings are only applicable for PSIA, ONVIF compliant and AXIS cameras.

To configure the Advanced Discovery Settings

1. On the **Camera** page>**Advanced Discovery Settings** pane, perform the following:
 - Select “NTSC” or “PAL” from **Set Video Format** list.
 - Type a **Username** for the camera.
 - Type a **Password** for the camera.

Note: You are prompted to type the username and password for a PSIA, ONVIF and AXIS cameras.

- Click **Apply** to save the changes or click **Reset** to clear the information entered.

Note: The username and password entered is applicable for all NTSC or PAL cameras. However, the username and password can be changed while configuring a particular camera.

Adding Third Party PSIA, ONVIF and AXIS Cameras

The third party PSIA, ONVIF and AXIS cameras that are discovered in the MAXPRO NVR user interface do not display the model name. However, the **Camera Type** field associated to the ONVIF, PSIA, and AXIS cameras displays “ONVIF DEVICE”, “PSIA DEVICE” and “No Streamer Type” in the **Discovery** window on the **Camera** page. You can also enable audio for these cameras, provided the camera supports the audio feature.

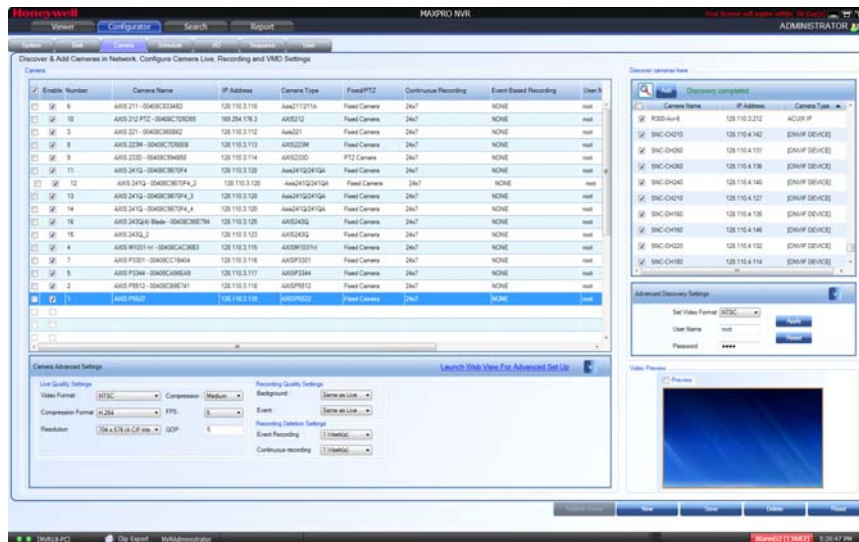



Figure 4-21 Camera Type field displaying “ONVIF DEVICE” for a ONVIF camera

You must add the discovered camera(s) using the **Add** button to view the model name(s). After adding the camera(s), you can view the model name(s) from the **Camera Type** drop-down list in the left pane of the **Camera** page. AXIS and ONVIF cameras also support the TCP and UDP based streaming modes. You can choose the required streaming mode during the configuration depending upon what camera supports.

To add third party PSIA/ONVIF cameras in MAXPRO NVR through Discovery

1. After the discovery, the check boxes corresponding to all the cameras are selected by default. To add the third party PSIA/ONVIF cameras, first clear the check boxes corresponding to all other cameras other than PSIA and ONVIF cameras.
2. Select a third party PSIA/ONVIF camera that you want to add, and click  to open the **Advanced Discovery Settings** pane.
3. Type the **User Name** and **Password** of the third party PSIA/ONVIF camera as shown in the following figure.
4. Click **Apply**.
5. Click **Add** to add the camera.

Note: After adding a third party PSIA/ONVIF camera, you can manually add a new third party PSIA/ONVIF camera, using the **New** button located at the bottom of the **Camera** page.

Configuring the Schedules

A schedule defines the date and times when continuous recording and video analytics (motion detection) functions are enabled for a camera.

Creating a Schedule

You can create schedules for the camera to record video at recurring intervals.

To create a schedule

1. Click the **Configurator** tab. The **System** page displays by default.
2. Click the **Schedule** tab to navigate to the **Schedule** page. By default MAXPRO NVR supports the following 4 default schedules: **24 x 7**, **Weekday**, **DayTime**, and **NightTime**.

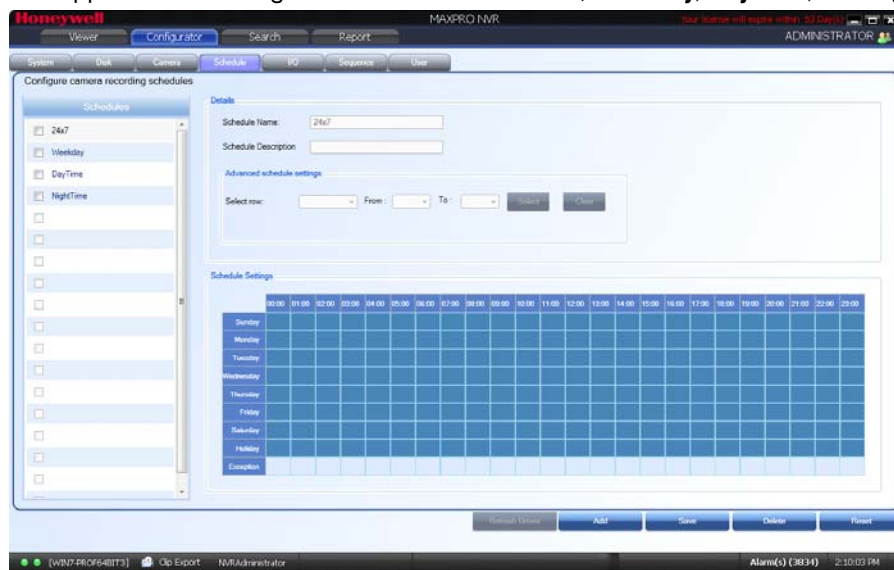


Figure 4-22 Schedule page

Note: You cannot modify/delete any of the default schedules.

3. Click **Add** to create a new schedule.
4. Configure the schedule details as listed in the following table.

Type	Setting
Schedule Name	The schedule name appears by default. You can type a new schedule name as applicable.
Schedule Description	Type the schedule description.
Advanced schedule settings	

Type	Setting
Select row	Select the day of the week.
From	Select the from date.
To	Select the to date.
Select	Click Select . The schedule details entered appear under Scheduler Settings.
Clear	Click Clear to clear the information entered.

5. Click **Save** or click **Reset** to undo the changes.

Note: You can create a maximum of 50 schedules in MAXPRO NVR.

Deleting a Schedule

You can delete a schedule for the camera when you do not want to record video at recurring intervals.

To delete a schedule

1. Click the **Configurator** tab. The **System** page displays by default.
2. Click the **Schedule** tab to navigate to the **Schedule** page.
3. Under **Schedules**, select the schedule you want to delete from the list. The schedule's details appear.
4. Click **Delete**, and then click **Yes** in response to the confirmation message.

Configuring the Input and Output for an IP Camera

Most IP cameras have a monitor input and a control output that can be configured. For example the input of the camera could be connected to a motion detector and the output of the camera to a door opener. Once configured, movement detected at the door would trigger the door to be opened. For electrical characteristics of the input and output refer to the camera documentation.

In MAXPRO NVR, the inputs and outputs of a camera are configured by default in the database while adding a camera. MAXPRO NVR has a specialized interface that lists the inputs and outputs associated to the configured cameras.

To configure input and output

1. Click the **Configurator** tab. The **System** page displays by default.
2. Click the **I/O** tab to open the **I/O** page.

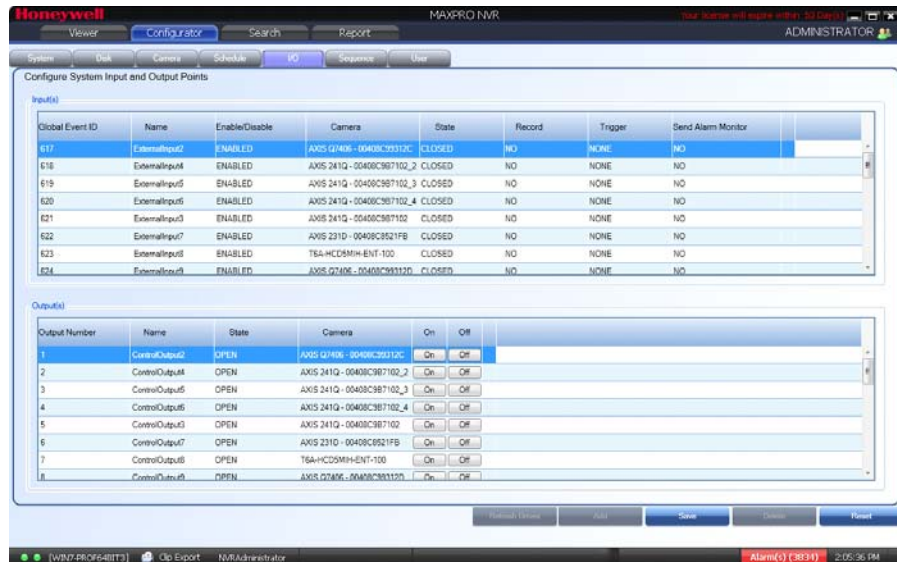


Figure 4-23 I/O page

3. The **Input(s)** pane lists the inputs for the configured cameras. Select the appropriate options in the fields as explained in the following table.

Field	Description
Global Event ID	Unique event ID
Name	External input name.
Enable/Disable	Enables or Disables the input.
Camera	Displays the associated camera name.

Field	Description
State (CLOSED/OPEN)	The default option is CLOSED . Defines the normal (non-alarm or non-active) state of the input. For example a normally closed input would have its input terminal normally connected to common or ground. To activate the normally closed input, the input needs to be opened (connection to ground or common removed). For example: A magnetic door switch raises alarm if the contacts are open when the door opens.
Record (No/Yes)	The default option is No . If set to Yes recording will start when an input is activated. Note Recording is based on the time you set under System tab > Event recording settings . You can specify the Pre-event time and Record For time to record the video.
Trigger (NONE/ControlOutput)	The default option is NONE . If a control output is selected, then the selected output is activated when the corresponding input activates. Note A cameras input can only activate the same cameras output.
Send Alarm Monitor (NO/YES)	The default option is No . If set to YES , video will pop up in the viewer when an input is activated. Ensure that " Display Video on Alarm " check box is selected in the MAXPRO NVR Logon dialog box.

- The **Output(s)** pane lists the outputs for the configured cameras. Select the appropriate options in the fields as explained in the following table.

Field	Description
Output Number	Control output number.
Name	Control output name.
State (CLOSED/OPEN)	The default option is OPEN . Defines the normal (non-alarm or non-active) state of the output relay contacts.
Camera	Displays the associated camera name.
ON/OFF	Manual control of the output. Click ON to close the relay contacts. Click OFF to open the relay contacts.

- In the **Output(s)** pane, select an output and then click **On** to turn on the relay manually or Click **Off** to turn off the relay manually.
- Click **Save** or click **Reset** to undo the changes.

Configuring the Sequences

A sequence is a set of live video streamed one after the other from cameras for a specified time interval. You can select the cameras or presets to be included in a sequence and also specify the time interval for which the video from each camera or preset must be displayed.

Note: Presets must be defined for the cameras before including them in the sequence.

Creating a Sequence

You can create a sequence to display video that is captured from different cameras connected to MAXPRO NVR.

Note: You can add a maximum of 50 sequences in MAXPRO NVR.

To create a sequence

1. Click the **Configurator** tab. The **System** page displays by default.
2. Click the **Sequence** tab to navigate to the **Sequence** page.

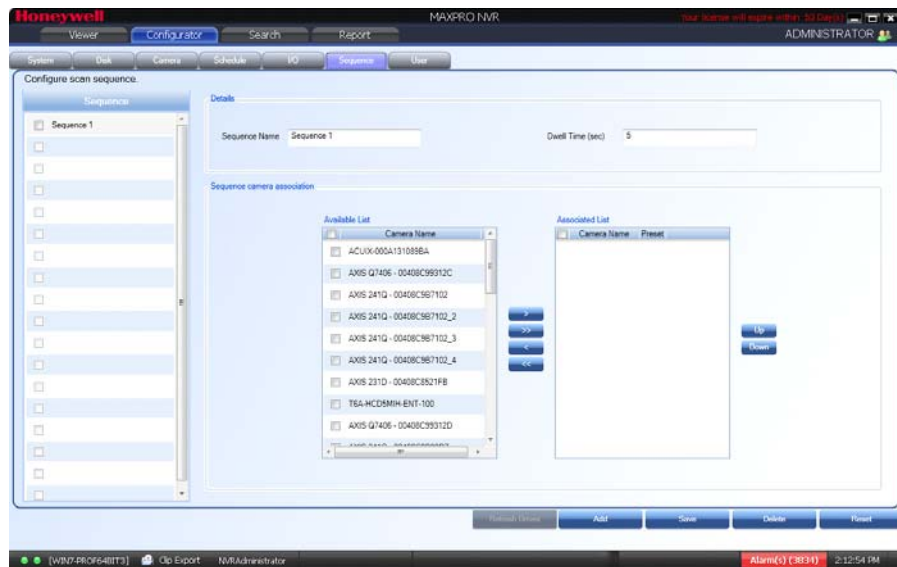


Figure 4-24 Sequence page

3. Click **Add**.
4. Under **Details**
 - The **Sequence Name** appears by default. You can type a new Sequence Name as applicable.

Note: The **Sequence Name** is limited to a maximum of 18 alphanumeric characters.

- The **Dwell Time (Sec)** appears by default. You can type a new Dwell Time (Sec) for the camera to display video before advancing to the next camera.

5. Under Sequence camera Association

- Select the check box corresponding to the camera that must be included in the sequence under the **Available List**, and then click >. The selected camera appears under the **Associated List**.
- Click >> to move all the cameras to the **Associated List**.
- Select the check boxes corresponding to the camera that you do not want to include in the sequence under the **Associated List** and then click <. The selected camera appears under the **Available List**.
- Click << to move all the cameras to the **Available List**.
- To include presets in the sequence, select the preset number from the drop-down list under the **Preset** column next to a camera. The video from each camera in the list is displayed sequentially.

Note: The drop-down list is not visible in the **Preset** column for a fixed camera.

6. Click Save.

Rearranging the Cameras In the Sequence

You can rearrange the cameras and presets in the sequence. When you rearrange them, the sequence of live video streaming from each of the cameras is altered based on the rearrangement.

To rearrange the cameras

1. Select the check box corresponding to the camera you want to rearrange inside the sequence.
2. Click **Up** to move the camera one row up, or click **Down** to move the camera one row down.
3. Click **Save**.

Removing Presets from a Sequence

You can remove a preset when you do not want it to be associated with a sequence.

To remove presets from a camera

1. In the **Preset** column, do not select any preset from the drop-down list.
2. Click **Save**.

Updating a Sequence

Updating a sequence allows you to change the sequence of video display from cameras.

To update a sequence

1. Click the **Configurator** tab. The **System** page displays by default.
2. Click the **Sequence** tab to navigate to the **Sequence** page.
3. Select the check box corresponding to the sequence you want to update.
4. You can change the sequence name, dwell time and sequence of the cameras.
5. Click **Save**.

Deleting a Sequence

To delete a sequence

1. Click the **Configurator** tab. The **System** page displays by default.
2. Click the **Sequence** tab to navigate to the **Sequence** page.
3. Select the check box corresponding to the sequence you want to delete.
4. Click **Delete**. A confirmation message appears on the top of the display area.
5. Click **Yes**.

Performing User Administration

A user in MAXPRO NVR is responsible for performing various operations like viewing video, reporting alarms, and other video surveillance tasks. You can create two types of users in MAXPRO NVR: System Local User and Windows User.

System Local User

A System local user can access only MAXPRO NVR Client. This user may not have access to a client workstation.

Windows User

A Windows user can access a client workstation and also MAXPRO NVR Client.

Users and Roles

Roles are provided to a user. These roles comprise a set of privileges. When a user is associated to a role, the privileges that are available for the role are also assigned to the user.

The various roles available in MAXPRO NVR are as follows:

- NVR Administrator
- Operator
- Supervisor
- Internet Operator
- Live View Operator

The following table lists the various user roles and the privileges applicable to the role.

	Viewer	Configurator	Search	Report
NVR Administrator	X	X	X	X
Operator	X	-	-	-
Supervisor	X	-	X	X
Internet Operator	X	-	-	-
Live View Operator	X	-	-	-

Note:

- “X” indicates that the user’s role has access to the privilege.
- “-” indicates that the user’s role does not have access to the privilege.
- The Internet Operator role is optimized for remote monitoring at lower bandwidths (minimum bandwidth requirements still apply to be able to stream required video data)
- The Live View Operator role can only access live video, and does not have access to playback operations.

When you install MAXPRO NVR for the first time, a default user named “admin” is created. The admin user is assigned the role “NVRAdministrator”. Only the user having “NVRAdministrator” privilege can add new users, assign roles to the added users, add or modify the privileges to the users, and perform various configurations in MAXPRO NVR.

Adding a User

You can add a user by providing a unique user name and a password. Only the “NVR Administrator role” user can add a new user in MAXPRO NVR. You can add up to 1024 users in MAXPRO NVR. After you add a new user, you can assign a role to it.

To add a user

1. Click the **Configurator** tab. The **System** page displays by default.
2. Click the **User** tab to navigate to the **User** page.

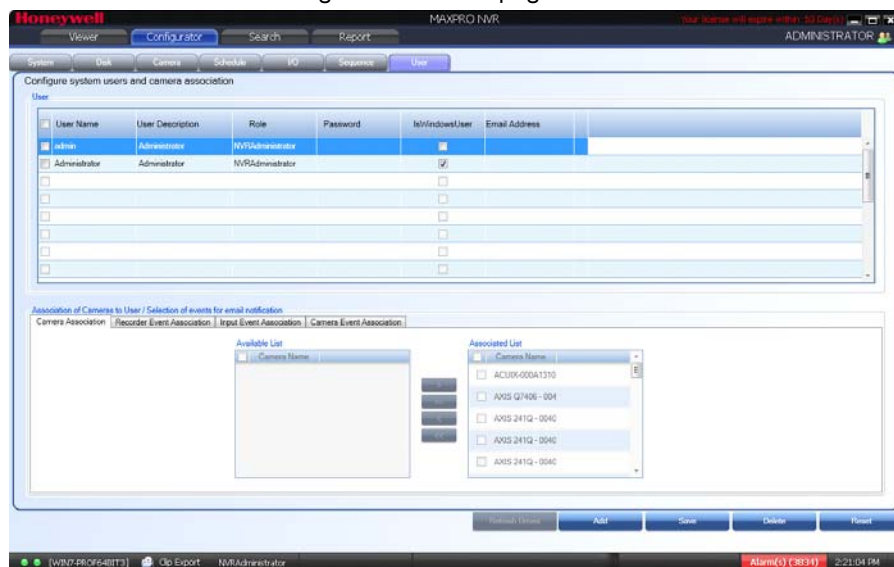


Figure 4-25 User page

3. Click **Add**. A new row is created with a default set of values for the user.
4. Under the **User Name** column, the default user name is displayed. You can type a new user name as applicable.
5. Under the **User Description** column, type a description for the user.

6. Under the **Role** column, select the role you want to assign to the user from the drop-down list.
7. Under the **Password** column, type the user's password.

Note: Minimum length of the password is 6 characters. While adding a User, if the password of other users added before 3.1 release is less than 6 characters then an error message is displayed and all passwords need to be updated to meet the minimum requirement.

8. Under the **IsWindowsUser** column, select the check box if the user is a Window's user.
9. Under the **Email Address** column, type the user's email address.
10. Click the **Camera Association** tab to associate cameras to the user.
 - To associate one camera at a time, under the **Available List**, select a camera and then click >. The selected camera appears under the **Associated List**.
 - Click >> to associate all cameras to the **Associated List**.
 - To remove an associated camera, under the **Associated List**, select a camera and then click <. The selected camera appears under the **Available List**.
 - Click << to disassociate all the cameras to the **Available List**.
11. Click the **Recorder Event Association** tab to associate recorder events to the user.
 - To associate one particular event, under the **Available List**, select the check box corresponding to the event and then click >. The select recorder event appears under the **Associated List**.
 - Click >> to associate all events to the **Associated List**.
 - To remove an event, under the **Associated List**, select a check box corresponding to the event and then click <. The selected event appears under the **Available List**.
 - Click << to disassociate all the events to the **Available List**.
12. Click the **Input Event Association** tab to associate input events to the user.
 - To associate one particular input event, under the **Available List**, select the check box corresponding to the input event and then click >. The selected input event appears under the **Associated List**.
 - Click >> to associate all the input events to the **Associated List**.
 - To remove an input event, under the **Associated List**, select a check box corresponding to the input event and then click <. The selected input event appears under the **Available List**.
 - Click << to disassociate all the input events to the **Available List**.

13. Click the **Camera Event Association** tab to associate camera events to the user.
 - To associate one particular event, under the **Available List**, select the check box corresponding to the event and then click **>**. The select camera event appears under the **Associated List**.
 - Click **>>** to associate all the camera events to the **Associated List**.
 - To remove an event, under **Associated List**, select a check box corresponding to the event and then click **<**. The selected camera event appears under the **Available List**.
 - Click **<<** to disassociate all the camera events to the **Available List**.
 14. Click **Save** to save the information.
-

Note: You can add a maximum of 1024 users in MAXPRO NVR.

Updating a User

You can modify the settings of a user to change the user ID, password, role, description, IsWindowsUser flag, and email address. You can update user settings only if you have admin rights.

Note: Minimum length of the password is 6 characters. While adding a User, if the password of other users added before 3.1 release is less than 6 characters then an error message is displayed and all passwords need to be updated to meet the minimum requirement.

To update a user

1. Click the **Configurator** tab. The **System** page displays by default.
2. Click the **User** tab to navigate to the **User** page.
3. Select the check box corresponding to the user you want to modify.
4. Change the settings such as user name, user description, and so on.
5. Click **Save**.

Deleting a User

You can remove a user from MAXPRO NVR. When you delete a user, all the associations made to the user are also removed.

To delete a user

1. Click the **Configurator** tab. The **System** page displays by default.
2. Click the **User** tab to navigate to the User page.
3. Select the check box corresponding to the user you want to delete.

4. Click **Delete**. A confirmation message appears at the bottom of the display area.
5. Click **Yes**.

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Monitoring a Site

In this chapter...

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Salvo Layouts and Panels

The salvo layout is an arrangement of panels that displays video. You can view the salvo layout when you select the **Viewer** tab. At a time, you can select one of the salvo layouts from the toolbar on the top of the screen (for example, if you want to view video from two cameras, select a salvo layout with two or more panels). Following are the features of the salvo layout:

Easy Video Source selection

You can drag and drop a video source such as a camera or scan sequence from the Site window on the Salvo layout. The video is displayed in the panel of the salvo layout. You can also double-click the video source name to select it.

Multiple video source selection

You can drag and drop multiple video sources from the **Site** window on the salvo layout. The salvo layout starts displaying video from the devices in different panels.

Note: Ensure that enough panels are available before you drag and drop multiple video sources on the salvo layout. This is necessary to avoid automatic closing of the present video display. For example, if a salvo layout consists of only one panel displaying video, select another salvo layout containing more panels before dragging and dropping multiple video sources.

Multiple panel selection

You can select multiple panels on the salvo layout. This enables you to perform actions on multiple video displays simultaneously. For example, you can select multiple video display and start recording video, apply color correction, and perform other similar actions. See [Video Control Options in the Panel Toolbars](#).

Context menu commands

When you right-click on a panel, a context-menu appears. The commands in the context-menu vary based on the type of video display such as live or recorded. See [Viewing Live Video](#) and [Playing Recorded Video using the Timeline](#).

Enlarged display

You can double-click a panel to maximize its size and view an enlarged display of the video. Double-click the panel again to restore the panel to its original size.

Surrounding Cameras

The Surrounding Cameras feature allows you to associate a group of cameras to each camera. This feature is particularly useful when you want to view video from a group of cameras at the same time; for example, when you want to view video from cameras located in the same area. See [Surrounding Cameras](#).

Salvo Views

Salvo views enable you to save a salvo layout. The cameras and scan sequences displaying video in a salvo layout is saved in a salvo view. When you want to view video from the same cameras and scan sequences again, you can select the corresponding salvo view. See [Salvo View](#).

Swapping of video display between panels

The video display in a panel can be dragged and dropped on another panel. This feature lets you swap the video display between panels.

Panel Toolbars

Hovering the mouse over a panel displays a toolbar. The toolbar that appears on top of a panel enables you to view the name of the video source and close the video display. The toolbar that appears on the bottom of a panel consists of icons that enable you to zoom in and zoom out of the video display, flip the video display, view the mirror image of the video display, cancel the digital PTZ effects on the video display, and perform color correction on the video display. You can also move the camera to a preset position, save a preset position, and start recording video. See [Video Control Options in the Panel Toolbars](#).

Salvo View


A salvo layout that is customized based on your preference is a salvo view. You can select the cameras and scan sequences from which you want to frequently view video and save the salvo layout as a salvo view. The salvo view is saved and appears as an option in the Views window. When you want to view the video from the preferred cameras and scan sequences, you can select the salvo view. The video from the cameras and scan sequences are displayed in the salvo layout.

Creating a salvo view

To create a salvo view

1. Click the **Viewer** tab.

Note: Before you create a salvo view, select the salvo layout you want and the preferred cameras and scan sequences. The selected salvo layout, cameras, and scan sequences are saved in the salvo view.

2. Right-click on the toolbar, and then click **Create Salvo view** or click  on the toolbar on the top of the salvo layout. A drop-down box appears.



Salvo Bar

A salvo bar appears on top of a salvo view. The salvo bar indicates the name of the salvo view. You can save a salvo view after you realign the cameras using the **Save** option on the Salvo Bar. You can also use the **Save As** option to save an existing salvo view with a different name. The context menu options on the salvo bar include **Create Salvo View**, and **FullScreen**.



Surrounding Cameras

You can associate a camera to a group of cameras using the “Surrounding Cameras” feature. This feature enables you to view video from a group of related cameras at the same time; for example, when you want to view video from cameras located in the same area.

To define the surrounding cameras for a camera

1. Click the **Viewer** tab.
2. Click  on the toolbar on the top of the salvo layout. The surrounding cameras salvo layout appears.
3. Select the camera for which you want to associate a group of cameras from the Devices window. You need to drag and drop the camera in the central panel of the salvo layout. The panel starts displaying video from the camera.
4. From the **Site** window, select the cameras you want to associate with the camera selected in the previous step. The panel starts displaying video from the cameras.
5. Click  to save the surrounding cameras salvo layout.

Switching to the Surrounding Camera View for a Camera

- Click  on the toolbar. The surrounding cameras salvo layout appears. Select the camera from the **Site** window. The surrounding cameras salvo layout starts displaying video from the camera and the associated cameras.
- Or
- Hover the mouse over the panel displaying video from the camera. A panel toolbar appears. Click  in the panel toolbar. The surrounding cameras salvo layout starts displaying video from the camera and the associated cameras.

Live Video

You can view live video and play any selected sequence using the options available in MAXPRO NVR.

Viewing Live Video

The panels in the salvo layout display video. You can select the video source such as cameras or sequences from the **Devices/Site** window.

To view live video

1. Click the **Viewer** tab.
2. Double-click the video source in the **Devices/Site** window. You can also drag and drop the video source on a panel in the salvo layout.

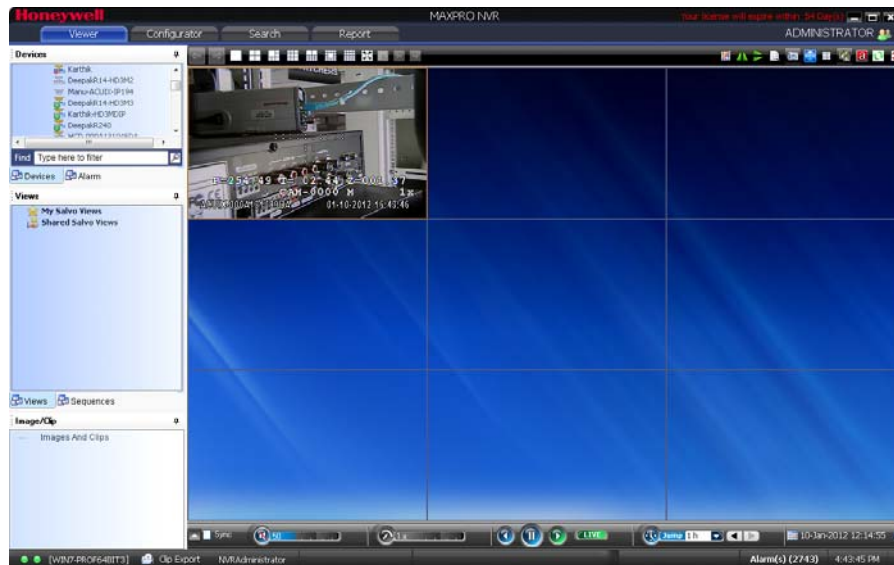


Figure 5-1 A panel displaying live video

You can select multiple video sources and view live video in different panels of the salvo layout. When you hover the mouse over a video display, toolbars appear over the panel. The toolbars enable you to perform actions such as flipping the video display, applying color correction, and so on. See [Video Control Options in the Panel Toolbars](#).

Video Viewing Options from Immervision Enabled Cameras

You can drag and drop Immervision enabled cameras, and view live video. These cameras enable different modes for viewing live video, which is described in the following sections.

Perimeter Mode

The Perimeter mode displays live video in perimeter (divided into two parts) form.



Figure 5-2 Perimeter Mode

Quad Mode

In Quad mode, you can see four different fisheye views on a single salvo panel. In each of the views, you can Zoom in, Zoom out, Pan up, pan down, Tilt up, and Tilt down the video.

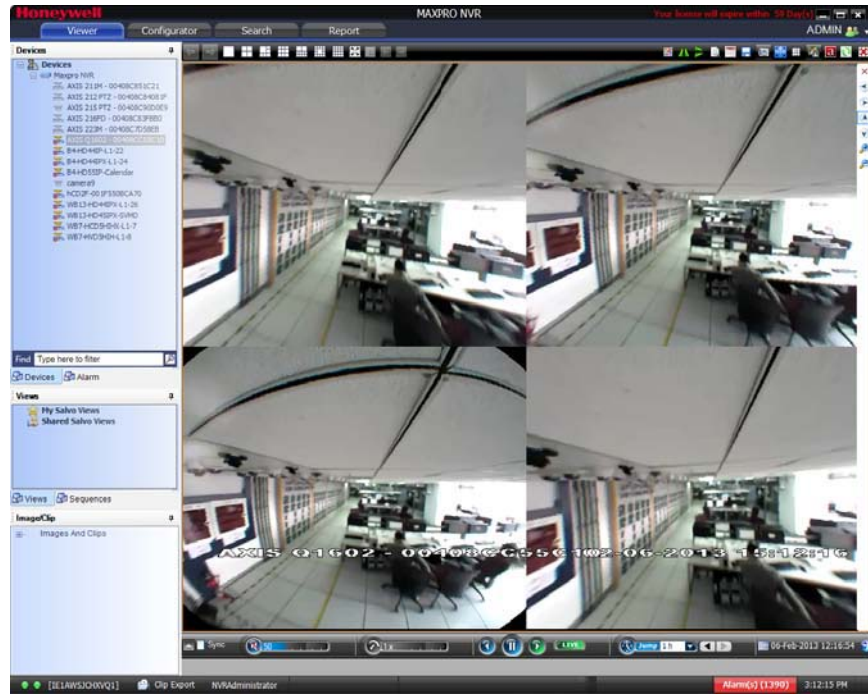


Figure 5-3 Quad Mode

PTZ Mode

In PTZ mode, you can see a single view, which enables you to Zoom in, Zoom out, Pan up, Pan down, Tilt right, and Tilt left the video.

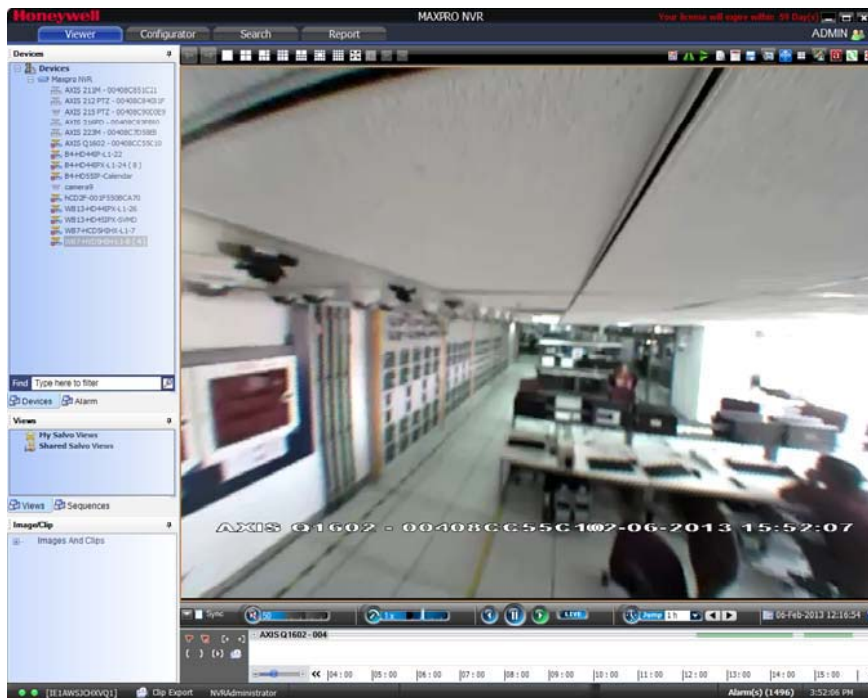


Figure 5-4 PTZ Mode

Panomorph Settings in the Viewer

At any point of time, while viewing video in a particular mode, you can switch to a different mode using the Panomorph settings available in the Viewer.

To view video in different modes

- Right-click the panel displaying live video, point to **Panomorph Settings**, and then select one of the modes (**PTZ Mode/Quad Mode/Perimeter Mode**) as applicable.

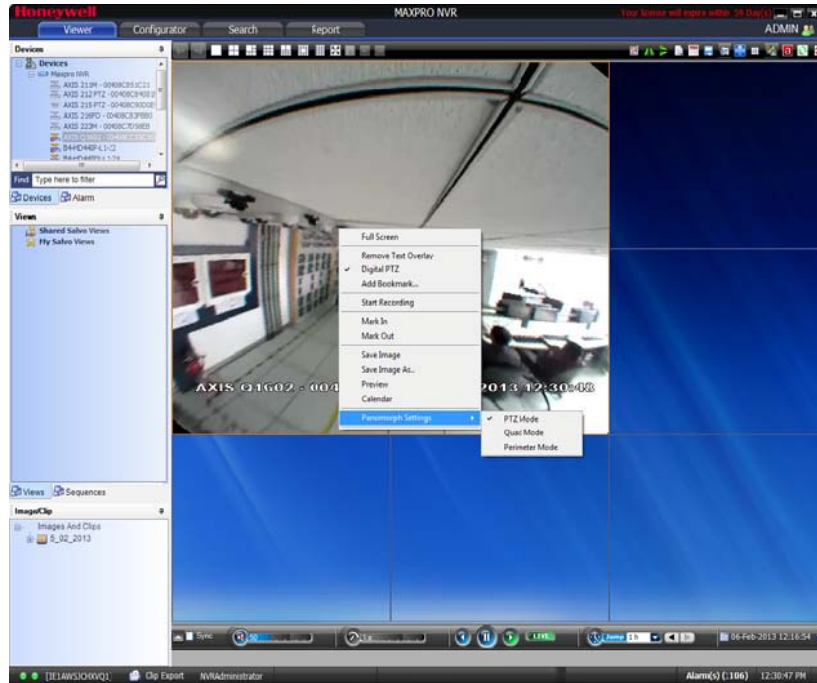


Figure 5-5 Panomorph Settings in the Viewer

Video Viewing Options from Oncam Grandeye Cameras

You can drag and drop Oncam Grandeye cameras, and view live video. The live video for some of the Halocam and Evolution cameras is shown in the following illustrations.



Figure 5-6 Halocam-VCam Mode

Note: Right-click the pane displaying live video (for a Halocam or Evolution camera), point to **Oncam GE-Dewarping settings**, and then select any mode to view live video.



Figure 5-7 Halocam-Panorama Mode

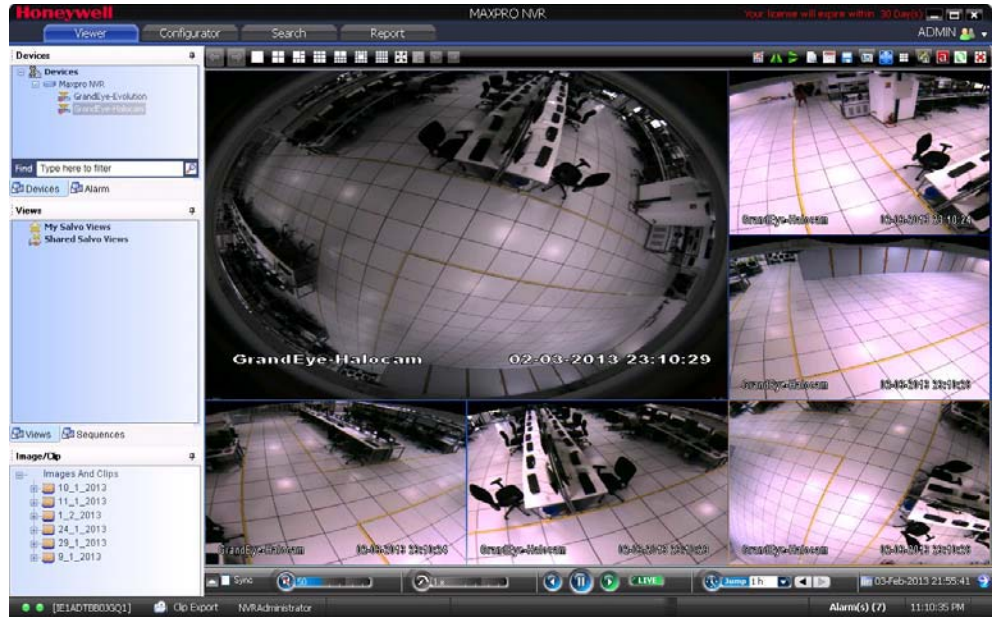


Figure 5-8 Halocam- All Quad Positions Mode

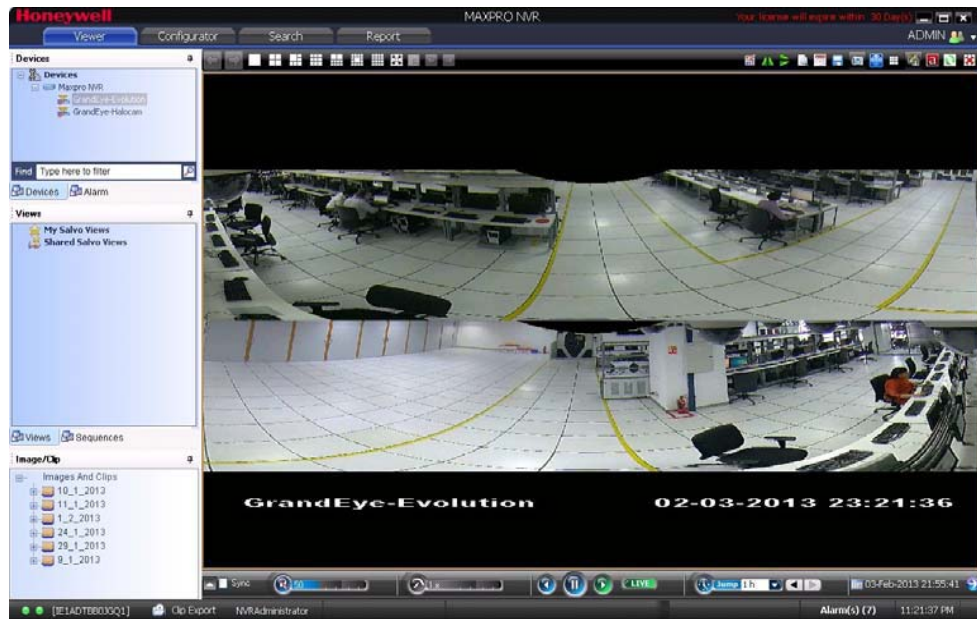






Figure 5-9 Evolution-Panorama Mode

Context Menu Options

When you right-click on a panel displaying live video, a context menu appears. The following table lists the commands in the context menu.

Command	Click to...
Full Screen	maximize the salvo layout to full screen. Alternatively, you can click  in the toolbar on the top of the salvo layout.
Remove Text Overlay	remove text overlay displayed on the video. Alternatively, you can click  in the toolbar on the top of the salvo layout.
Digital PTZ	enable digital PTZ. See Panning, Tilting, and Zooming for information on digital PTZ.
Add Bookmark	add a bookmark in the timeline. You can also add a bookmark by pressing the CTRL + B keys. See Video Recording and Viewing .
Mark In	add a mark in point in the timeline. You can also add a mark in point by pressing the CTRL + I keys. See Video Recording and Viewing .
Mark Out	add a mark out point in the timeline. You can also add a mark out point by pressing the CTRL + O keys. See Video Recording and Viewing .
Save Image	save the frame displayed in the panel as an image in the BMP format. Alternatively, you can click  in the toolbar on the top of the salvo layout to save the image in BMP format.
Save Image As	save the frame displayed in the panel in different image formats such as JPG, PNG, and GIF. See Saving Images .
Preview	view the preview of the video at any given time. You can view a list of previewed videos with the corresponding date and time stamp. Select a previewed video, and click  to export the previewed clip.
Show Surrounding Cameras	to view video from the associated cameras. See Surrounding Cameras .
Calendar	to open the Calendar search view, which enables searching for the recorded video. See Calendar Search .

Playing a Sequence

A sequence is a set of live video streamed one after the other from cameras for a specified time interval.

To play a sequence

1. Click the **Viewer** tab.
2. Click the **Sequences** window.
3. Double-click the sequence you want to play or select the sequence, and then click **Play Sequence**. You can drag and drop the sequence on a panel in the salvo layout.

Caution: For MAXPRO NVR XE and MAXPRO NVR Hybrid XE, it is recommended that you run only 1 sequence at a time on a client (remote or local).

Video Recording and Viewing

Video Recording

In the Configurator tab, you can configure the settings to record video for the cameras connected to MAXPRO NVR. Three types of record settings are available for the cameras connected to MAXPRO NVR. They are user activated, scheduled/ background recording, and motion detected recording.

About the Recording Settings for MAXPRO NVR

User Activated

You can configure the user activated settings for recording moments of interest while viewing live video from the camera. After configuring the user activated settings, the operator can start recording of video when needed. The video is recorded for the time period specified in the settings for user activated recording.

See [Video Control Options in the Panel Toolbars](#) for information on how to start the user activated recording of video from a camera.

Motion Detected Recording

After configuring the motion detection settings, the camera starts recording video when motion is detected.

Scheduled Recording

After configuring the scheduled recording settings, the camera starts recording video on the specified date and time.

Viewing Recorded Video

You can use the following to play recorded video:

Timeline

You can easily retrieve and view recorded video using the timeline and the date and time controls in the Timeline window. When you select a camera from the Devices window to view video, a timeline appears in the Timeline window. The name of the corresponding camera appears on the left of each timeline. You can add comments and mark points of interest in the timeline using the bookmark feature. The bookmarks are helpful for future review of recorded video.

You can also add mark in and mark out points in a timeline. Recorded video between a mark in and mark out point can be played repeatedly. This feature is referred to as loop playback of video.

You can view the frames from the recorded video as thumbnails in the timeline. You can also create clips from recorded video.

Player Controls

You can play recorded video at speeds ranging from 1/64X to 256X. You can also forward and reverse play the video. The frames from the recorded video can also be viewed one at a time in the panel.

Using the time jump feature, you can skip time intervals while viewing recorded video. This feature is helpful when viewing recorded video that spans across a long time interval.

See [Playing Recorded Video using the Timeline](#) for more information on timeline and player controls.

Timeline




Playing Recorded Video using the Timeline

Timeline enables you to play recorded video from a particular date and time. A timescale is displayed in the lower part of the Timeline window. You can refer to the divisions in the timescale to locate a video recording in the timeline. Using the date and time calendar box in the timeline window, you can select a date and time from which you want to play recorded video.


You can add comments and mark points of interest in the timeline using the bookmark feature (See [Marking Points of Interest in the Timeline using Bookmarks](#)). This enables you to locate moments of interest when reviewing recorded video. You can also add mark in and mark out points in a timeline (See [Playing Recorded Video Using Mark In and Mark Out Points in the Timeline](#)) to play a selected part of video repeatedly. Clips of the video recorded in MAXPRO NVR can be created from marked points in the timeline.


To play recorded video using the timeline

1. Click the **Viewer** tab.
2. Select the camera. To select the camera, double-click the video source in the **Site** window. You can also drag and drop the camera on a panel in the salvo layout. The video is displayed in the panel. Alternatively, you can click on a panel displaying video to select the corresponding camera from which you want to view video. A timeline appears in the Timeline window with the name of the camera on the left in full timeline mode.
3. Play the recorded video from a date and time in one of the following ways.
 - Click on the timeline from where you want to view video. You can refer to the divisions on the timescale that is displayed in the lower part of the timeline window to locate the date and time.

Note: You can set any timescale between seconds and days using the  slider. Move the slider left or right as required. This helps you to locate the video recording in the timeline. Click  to view the divisions on the left of the timescale. Click  to view the divisions on the right of the timescale.



Or

- Select the date and time in the date and time calendar box 

and then click . The video recording is played from the selected date and time.

In the timeline, the time duration for which recording is available is indicated in green color. The time duration for which recording is not available is indicated in white color. This helps you to locate the video recording in the timeline.

Note: The timeline shows the green color and gray color only for the cameras connected to MAXPRO NVR. You can click the timeline to play the recorded video. The following table lists the colors that appear in the timeline.

Color	Indicates...
	recording is available for the corresponding date and time.
	recording is not available for the corresponding date and time.





Viewing Thumbnails

To view the thumbnail frames







- Expand the camera name in the left of the timeline. The thumbnail frames appear.

Player Controls

You can do the following actions using the player controls:

- Play the video
 - Click the  icon to play video. The icon changes to the . You can click this icon to pause the playing of video.
- View frames in the recorded video
 - Click the  icon to view the forward frames or click the  icon to view the reverse frames.

Note: You can view the frames only when video is paused.

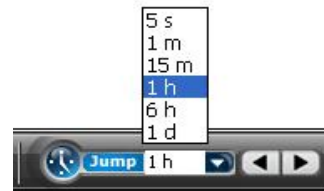
- Adjust the volume for audio enabled cameras
 - Click the  to un mute the audio
 - Hover the mouse over the  while video is playing and move the slider to adjust the volume.
- Play video that is paused
 - Click the  icon or the  icon to forward play video. To reverse play the video, click the  icon.
- Change the playing speed
 - Hover the mouse over the  while video is playing and move the slider to change the playing speed.

Note: To move the slider you can use the mouse scroll wheel. Scrolling up increases the speed and scrolling down decreases the speed.

The speed appears in the icon when you move the slider. For example, 1x in the icon indicates the playing speed.

- Skip time intervals using the time jump control

Skipping enables you to easily locate the portion you want to view in a video recording. This is particularly useful when the video recording spans across a long time interval.



Click the drop-down arrow on the **Jump** button while video is playing and select a time interval. Click to jump backward or click to jump forward. The video jumps to the selected time interval.

- Sync video

Sync video allows you to synchronize the display of video from multiple cameras. In the salvo layout, select the cameras, then select the **Sync** check box on the timeline window or click on the tool bar above salvo layout to enable sync playback mode. Any actions performed like jump and forward is synced in the entire salvo layout. When a new camera is dragged and dropped, the video from that camera is also synced.


Note

- The Sync video feature only consumes one playback session out of 32 playback sessions available in MAXPRO NVR.
- Using this feature, you can playback the selected camera's sync time with a camera in playback mode using a single playback session.
- Reverse playback mode is not supported. Use Jump to traverse reverse.
- The maximum number of playback streams supported is 9 in sync mode.

Context Menu Options

A context menu appears when you right-click on a panel displaying live video. The following table lists the commands in the context menu:

Command	Click to...
Full Screen	maximize the salvo layout to full screen. Alternatively, you can click in the toolbar on the top of the salvo layout.
Remove Text Overlay	to remove text overlay displayed on the video. Alternatively, you can click in the toolbar on the top of the salvo layout.
Digital PTZ	enable digital PTZ. See Panning Tilting and Zooming for information on digital PTZ. See Panning, Tilting, and Zooming .
Add Bookmark	add a bookmark in the timeline. You can also add a bookmark by pressing the CTRL + B keys.

Command	Click to...
Mark In	add a mark in point in the timeline. You can also add a mark in point by pressing the CTRL + I keys. See Video Recording and Viewing .
Mark Out	add a mark out point in the timeline. You can also add a mark out point by pressing the CTRL + O keys. See Video Recording and Viewing .
Save Image	save the frame displayed in the panel as an image in the BMP format. Alternatively, you can click  in the toolbar on the top of the salvo layout to save the image in BMP format. See Saving Images .
Save Image As	save the frame displayed in the panel in different image formats such as JPG, PNG, and GIF. See Saving Images .
Show Surrounding Cameras	to view video from the associated cameras. See Surrounding Cameras .

Playing Recorded Video Using Mark In and Mark Out Points in the Timeline

Mark in and Mark out feature is useful when you want to play a portion of video repeatedly. You can add a mark in point to mark the start date and time in the timeline. To mark the end date and time, add a mark out point in the timeline. The portion of the timeline between a mark in and mark out point is referred to as a loop.


You can add bookmarks between a loop to identify moments of interest in the video. See [Marking Points of Interest in the Timeline using Bookmarks](#). The video in a loop can also be saved as a clip. See [Creating Clips](#).

Creating a Loop by adding a Mark In and Mark Out Point in the Timeline

To create a loop


1. Click to select the timeline in the **Timeline** window in which you want to add mark in and mark out points.
Or
Click a panel displaying video to select the corresponding timeline.
2. To set the start date and time of the loop, add a mark in.

To add a mark in

Click the point in the timeline where you want to add a mark in and click . Alternatively, you can right-click the point in the timeline where you want to add a mark in and click **Add Mark In** in the context menu. The mark in can also be added from a panel displaying video. Right-click the panel and click **Add Mark In** in the context menu. The mark in is added at the corresponding date and time in the timeline.

3. To set the end date and time of the loop, add a mark out.

To add a mark out

To add a mark out, click the point in the timeline where you want to add a mark out and click . Alternatively, you can right-click the point in the timeline where you want to add a mark out and click **Add Mark Out** in the context menu. The mark out can also be added from a panel displaying video. Right-click the panel and click **Add Mark Out** in the context menu. The mark out is added at the corresponding date and time in the timeline.


Note: You can add multiple mark in and mark out points in the same timeline. However, you cannot add two mark in points in succession. A mark out point needs to be added after each mark in point.

Playing Video from the Loop

To play video from the loop


1. To select the loop, click anywhere between the mark in and mark out points.

Note: A tool tip appears when you hover the mouse over a loop. The tool tip indicates the start time and end time of the loop.

2. Click  to play the loop. You can also right-click on a loop to display a context menu and click **Play Loop**.

To Stop Playing Video

To stop playing video


1. In the **Timeline** window, click to select the loop.
Or
Click the panel displaying video pertaining to the loop. The corresponding timeline is selected.
2. Click the  icon. Alternatively, you can right-click the loop to display a context menu and click **Stop Loop**.

Marking Points of Interest in the Timeline using Bookmarks

You can add bookmarks in a timeline to mark points of interest in a video recording. For example, if you notice an event in the video and you want to review the portion later, you can add a bookmark. You can also add comments to the bookmarks and browse from one bookmark to the other in the timeline. In addition, you can cut and copy a bookmark and paste it at a different point in the timeline. The bookmark comments appear as tool tips in the timeline at marked points and are helpful while reviewing recorded video.

Adding a Bookmark

You can add a bookmark in one of the following ways:

- Click the point in the timeline where you want to add a bookmark and click .
- Right-click the point in the timeline where you want to add a bookmark and click **Add Bookmark** in the context menu.
- Right-click on the panel displaying video and click **Add Bookmark** in the context menu. You can also select a panel and press the **CTRL + B** keys to add a bookmark. The bookmark is added at the corresponding point in the timeline.

Adding Comments to a Bookmark

To add comments to a bookmark



1. Right-click the bookmark in the timeline and click **Add Comments** in the context menu. A dialog box appears.
2. Type your comments and click **OK**. The comments are saved and appear as ToolTip when you hover the mouse over the bookmark.

Note: To edit the comments, right-click the bookmark and click **Edit Comments** in the context menu. Modify the comments in the dialog box and click **OK**.

Browsing from One Bookmark to the Other

Using this feature, you can skip those portions in the timeline that are not bookmarked. This enables you to selectively view video only from bookmarked portions in the timeline.

To browse from one bookmark to the other

1. Select a timeline by clicking it in the **Timeline** window. You can also click on a panel displaying video to select the corresponding timeline.
2. Click the  icon to view video from the next bookmarked point or click the  icon to view video from the previous bookmarked point.

Or

Right-click a bookmark in the timeline to display a context menu. Click **Next Bookmark** to view video from the next bookmarked point or click **Previous Bookmark** to view video from the previous bookmarked point in the timeline.

Cut, Copy, and Paste Bookmarks


To cut, copy and paste bookmarks

1. Right-click a bookmark in the timeline to display the context menu. Click the **Cut** or **Copy** command in the context menu as needed.
2. Right-click the point in the timeline where you want to paste the bookmark and click **Paste** in the context menu.

Deleting a Bookmark

You can delete a bookmark in any of the following ways.








- Right-click the bookmark you want to delete. A context menu appears. Click **Remove Bookmark** in the context menu.












-
- Click to select the bookmark you want to delete and then click the  icon or press the **DELETE** key.



Video Control

Video Control Options in the Panel Toolbars

The panel toolbars appear when you hover the mouse over the video displayed in a panel. The toolbar that appears on top of a panel enables you to view the name of the video source and close the video display. The toolbar that appears on the bottom and on the right of a panel consists of icons that enable you to perform the following actions:

Icon	Click to...
	zoom in to the video.
	zoom out of the video.
	flip the video display. Alternatively, you can click this icon in the toolbar on the top of the salvo layout.
	view the mirror image of the video display. Alternatively, you can click this icon in the toolbar on top of the salvo layout.
	reset the digital PTZ effects on the video display.
	display the color correction window. Move the sliders to set the brightness, contrast, hue, and saturation. You can select the Blur check box to blur the video display and the Sharpness check box to increase the image sharpness or clarity. Alternatively, you can click this icon in the toolbar. Note: Select the Apply color changes check box to save the settings. Clicking the Reset button sets the color correction settings to default values.
[Select] 	displays a drop-down list of presets. You can select a preset for the camera. Note: The drop-down list is disabled when digital PTZ is enabled. You need to disable the digital PTZ feature to select a preset. See Panning, Tilting, and Zooming for information on enabling and disabling the digital PTZ feature.

Icon	Click to...
	<p>move a preset camera position.</p> <p>To move a preset, select a preset number from the drop-down list and then click the icon. The camera position (pan, tilt, and zoom) is moved to the selected preset.</p> <p>Note: The icon is disabled when digital PTZ is enabled. You need to disable the digital PTZ feature to move a preset. See Panning, Tilting, and Zooming for information on enabling and disabling the digital PTZ feature.</p>
	<p>store a preset camera position.</p> <p>To store a preset, select a preset number from the drop-down list and then click the icon. The camera position (pan, tilt, and zoom) is saved in the selected preset.</p> <p>Note: The icon is disabled when digital PTZ is enabled. You need to disable the digital PTZ feature to store a preset. See Panning, Tilting, and Zooming for information on enabling and disabling the digital PTZ feature.</p>
	<p>view video from associated cameras. See Surrounding Cameras.</p>
	<p>pan left</p>
	<p>pan right</p>
	<p>tilt up</p>
	<p>tilt down</p>
	<p>iris open</p>
	<p>auto iris</p>
	<p>iris close</p>
	<p>focus near</p>

Icon	Click to...
	auto focus
	focus far

Panning, Tilting, and Zooming

You can pan, tilt, and zoom (PTZ) the video displayed in a panel. Using the digital PTZ feature in MAXPRO NVR, you can perform panning and tilting on live and recorded video and clips. The digital PTZ feature when enabled allows you to perform panning and tilting on the video display that is zoomed or enlarged.

Zooming the Video Display

Use the mouse scroll wheel to enlarge (zoom in) or reduce (zoom out) the video display in the panel. Alternatively, hover the mouse over the video display. A toolbar appears in the lower part of the panel. You can click to zoom in and to zoom out the video display.

Panning and Tilting

To perform digital PTZ

1. Right-click on the video display in a panel. A context menu appears.
2. Select **Digital PTZ**. The digital PTZ feature is enabled for the video display in the panel.
3. Zoom the video display.
4. Center-click anywhere on the video panel. A point along with left, right, up, and down arrows appear.
5. Move the mouse in the required direction to pan and tilt.
6. Center-click again to stop panning and tilting.

PTZ Panel Bar

The PTZ panel bar provides you with the additional options to view the live video. It can be accessible by hovering the mouse on live video as shown in the below screen.



Figure 5-10 PTZ Panel Bar

Calendar Search

The Calendar Search feature helps you to search for recorded video from a particular camera. You can filter the search based on the month, day, hour, and minute. By default when you first select this feature, the recorded videos for the current month appear.

To use the Calendar Search feature

1. Click the Calendar icon on the toolbar as shown in the following figure.



Figure 5-11 Clicking the Calendar icon

Or

Right-click the camera on the salvo panel and click **Calendar** as shown in the following figure.

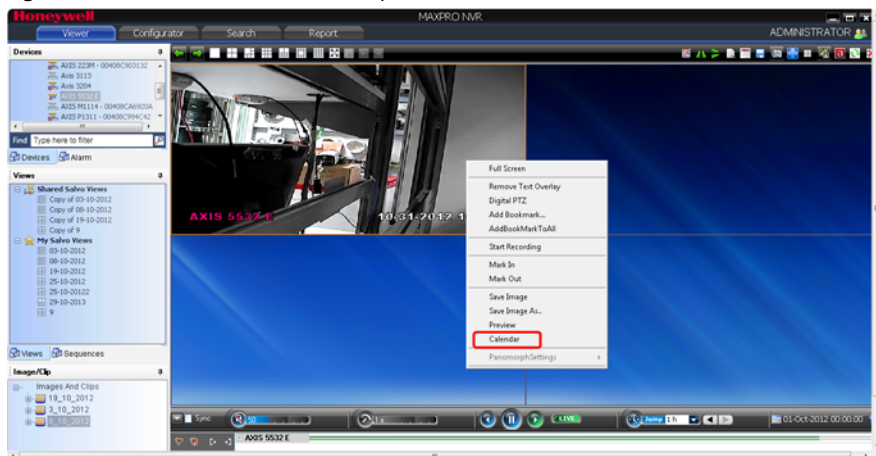


Figure 5-12 Right-clicking the camera in the salvo panel

Or

Right the camera in the device tree and click **Calendar** as shown in the following figure.

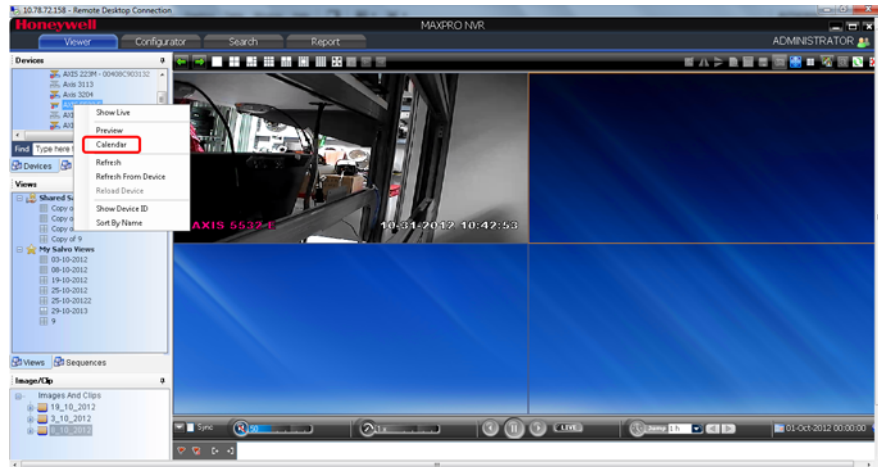
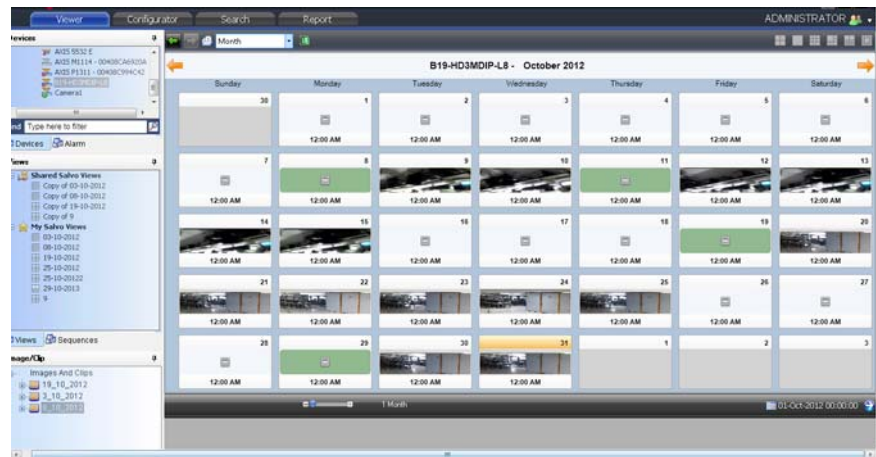


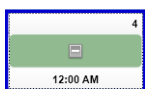


Figure 5-13 Right-clicking the camera in the device tree

The Calendar Search view displays as shown in the following figure.

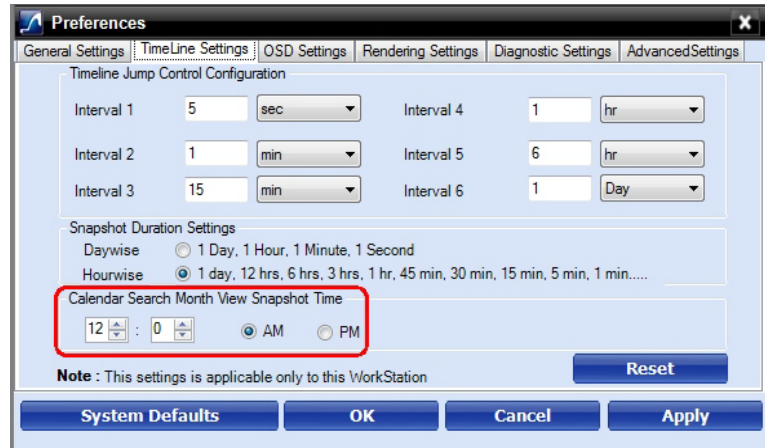


Legends

Legend	Description
	Indicates that there are no recordings available for the particular day/hour/minute.
	Indicates that the recordings are available for the particular day/hour/minute.
	Indicates that there is recording for that particular time frame, and not exactly at that particular time stamp.

Note

- By default, the monthly view of all the recordings for the current month appear. You can see a maximum of 31 recordings, each representing a day of the month.
- You can change the **Month** view recording time in the **Preferences** dialog box as shown in the following figure.



2. You can switch to the **Day**, **Hour** and **Minute** views by clicking the respective option in the drop-down list as shown in the following figure.

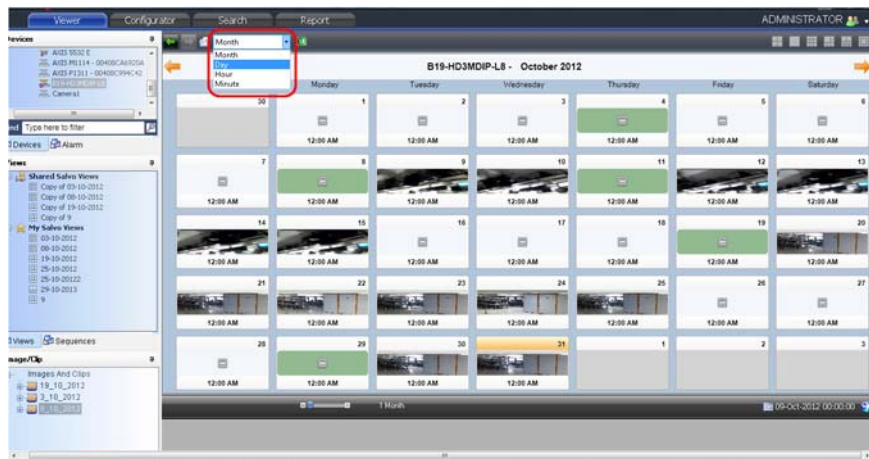


Figure 5-14 Switching to the day, hour, minute views by selecting from the drop-down list

Alternatively, move the slider to the right as shown in the following figure to switch to the **Day**, **Hour** and **Minute** views.

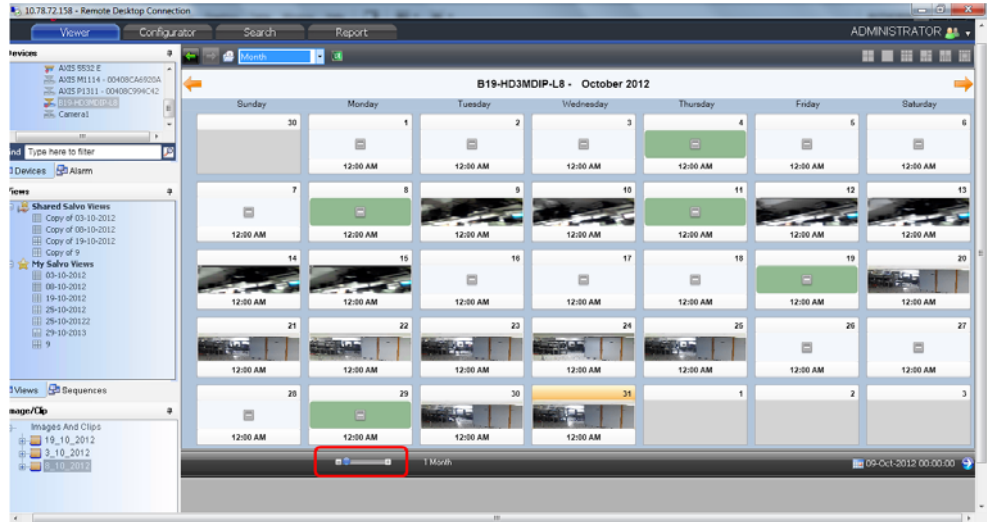




Figure 5-15 Switching to the day, hour, minute views by moving the slider

Note

- If you select **Day**, a maximum of 24 recordings appear, each representing an hour.
- If you select **Hour**, a maximum of six recordings appear, each representing a 10 minute recording of the selected hour.
- If you select **Minute**, a maximum of 10 recordings appear, each representing a minute.

Navigation Tips

- While viewing the month wise recordings, use the  and  buttons to navigate to the next or previous month in sequence that you are viewing.

Note: Follow the similar procedure to view day/hour/minute wise recordings.

- At any point of time, click the Live view icon as shown in the following illustration to go back to the Live video view.

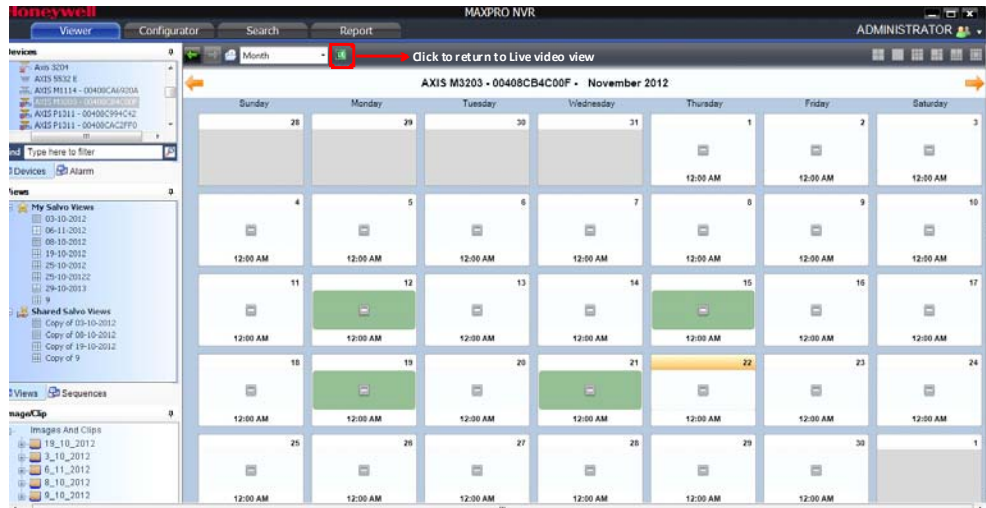


Figure 5-16 Returning to Live Video View

Options Available on the Panel

The following table lists the options available when you right click a panel in the Calendar Search view.

Option	Description
Save Image	Saves the frame displayed in the panel as an image in the BMP format.
Save Image As	Saves the frame displayed in the panel as an image in the other formats such as JPG, GIF, PNG and soon.
Show Video	Displays the video.

Creating Clips

You can create clips for the recorded video.

- Click the Clip Export icon on the toolbar as shown in the following figure.

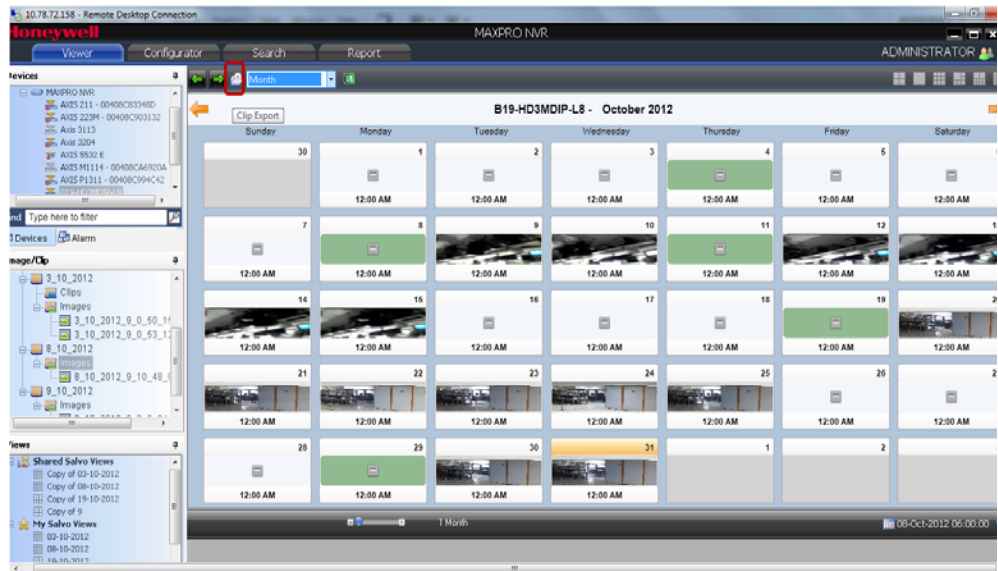


Figure 5-17 Creating Clips

Note: See the [Creating Clips](#) section for more information on creating clips for recorded video.

Preview Search

The Preview Search feature helps you to search for recorded video from a particular camera. Unlike Calendar search, you can only filter the search for a particular day. You also cannot drag and drop a camera on the preview pane.

To use the preview search

1. Right-click a camera in the device tree, and then click **Preview**.

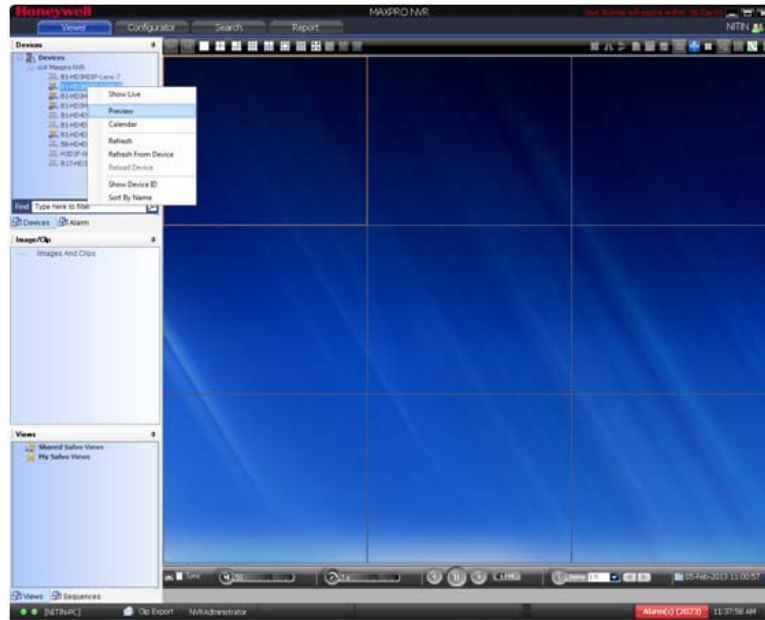


Figure 5-18 Preview Search - Right-clicking the camera from the Device tree

Or

Right-click the panel displaying live video and click **Preview**.

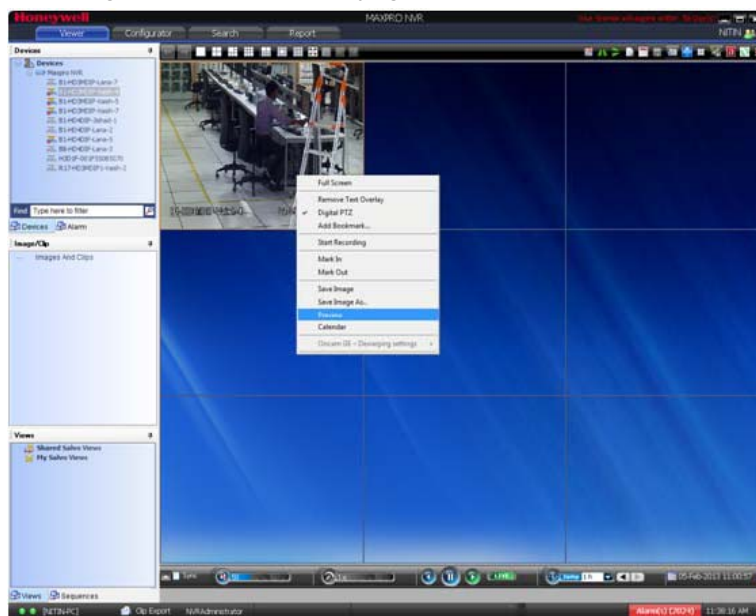


Figure 5-19 Preview Search- Right-clicking the Live Video pane

Or

Select the desired video panel and click the Preview icon on the toolbar.

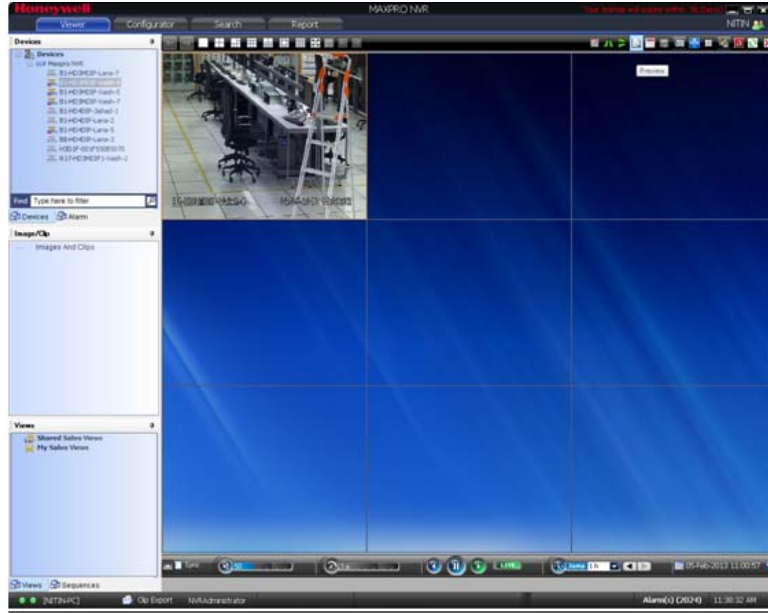


Figure 5-20 Preview Search - Clicking the Preview icon

A list of recordings for the particular day appear.

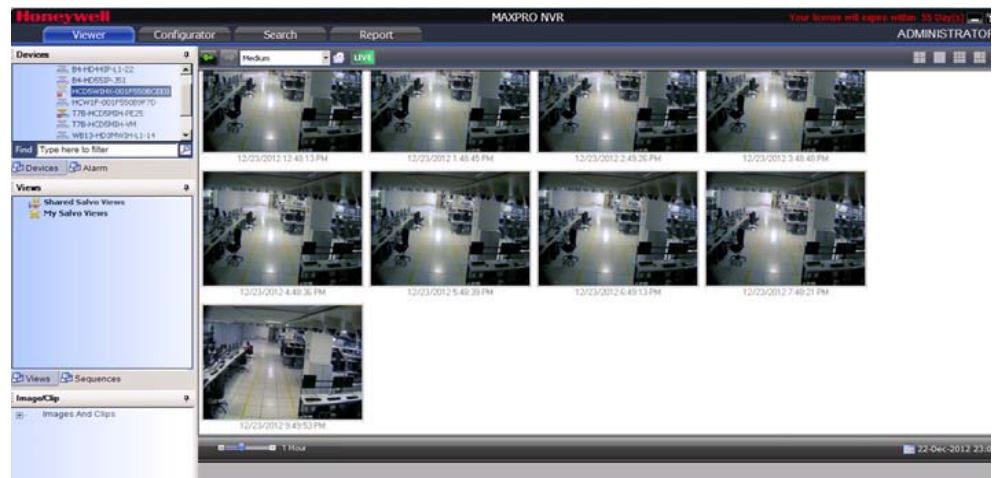


Figure 5-21 Preview Search - Results

Note: By default, medium sized snapshots(recordings) are displayed.

- To view small or large snapshots, select the appropriate option from the drop-down list as shown in the following figure.

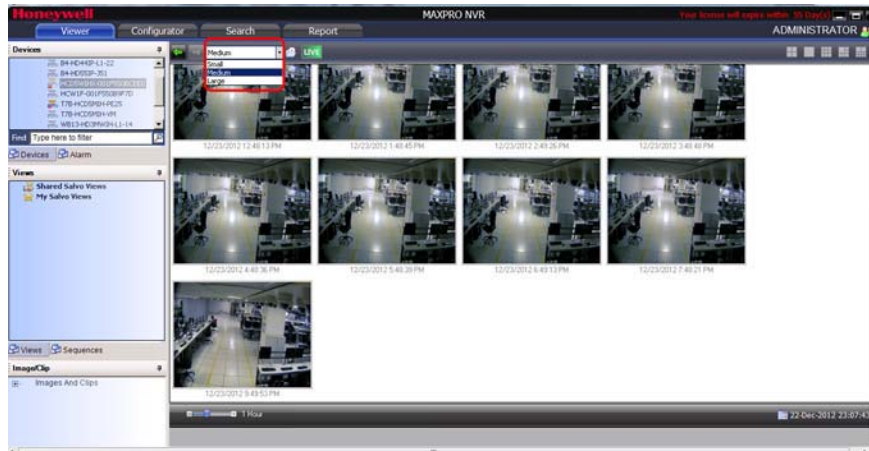


Figure 5-22 *Selecting the Large/Small options for the Snapshots*

- To change the snapshot duration, double-click it or move the slider as shown in the following figure.

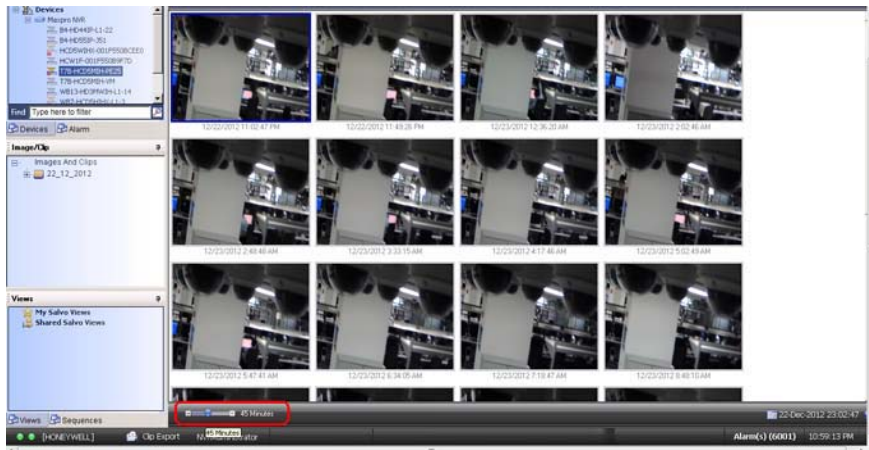


Figure 5-23 *Changing the Snapshot duration*

Navigation Tips

- At any point of time, click the Live view icon as shown in the following figure to go back to the Live video view.

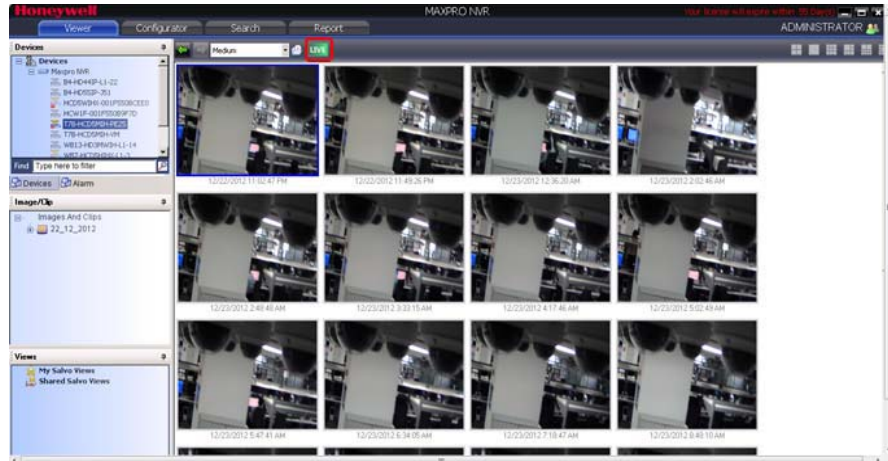


Figure 5-24 Returning to Live Video View

Options Available on the Panel

The following table lists the options available when you right click a panel in the Preview Search view.

Option	Description
Save Image	Saves the frame displayed in the panel as an image in the BMP format.
Save Image As	Saves the frame displayed in the panel as an image in the other formats such as JPG, GIF, PNG and soon.
Show Video	Displays the video.

Creating Clips

You can create clips for the recorded video.

- Click the Clip Export icon on the toolbar as shown in the following figure.

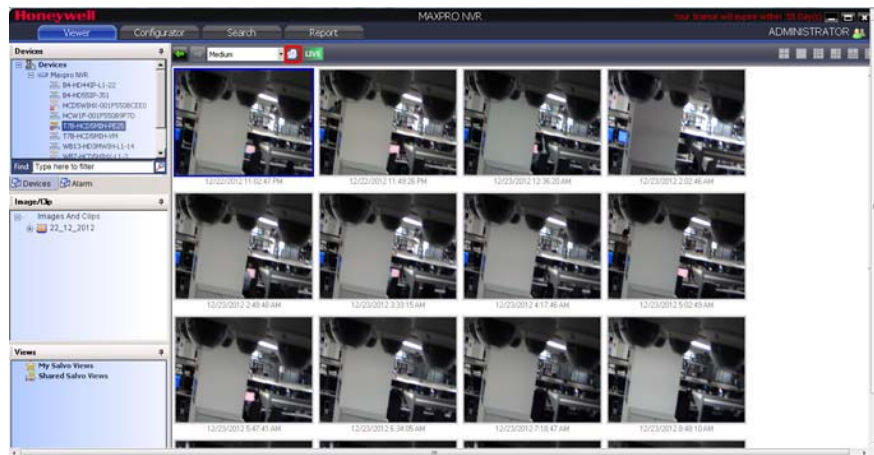


Figure 5-25 Creating Clips


Note: See the [Creating Clips](#) section for more information on creating clips for recorded video.

Images and Clips

Saving Images

While viewing video in the panel, you can save a frame of the video as an image. The image can be saved in Bitmapmed Graphics (BMP), Joint Photographic Experts Group (JPG) format, Portable Graphics format (PNG), and Graphics Interchange Format (GIF).


To save a frame displayed in a panel as an image

1. Click the **Viewer** tab.
2. Right-click the panel to display a context menu.
3. Select **Save Image** to save the image in BMP format. Alternatively, you can click  on the toolbar on top of the salvo layout. The images are saved in the **ImagesAndClips** folder at the location in the hard drive in which MAXPRO NVR files are installed. For example, **X:\Program Files\Honeywell\TrinityFramework\ImagesAndClips**. Here, **X:** is the hard drive.

Or

Select **Save Image As** to save the image in other formats. The **Save As** dialog box appears when you select the **Save Image As** command. You can select the format in the **Save As Type** box and type the **File Name**. You can also select a folder to save the image.

To save the salvo layout as an image

- Click  on the toolbar on top of the salvo layout.


The salvo layout is saved as an image (.BMP format) in the **ImagesAndClips** folder.

Note: The images saved in the **ImagesAndClips** folder appear in the **Image/Clip** window. See [Viewing Images and Clips](#) for information on how to view images.

Creating Clips

You can create clips from recorded video. These clips can be saved with digital signatures. Digital signatures ensure authenticity of clips. Digital signatures are primarily used to authenticate videos that are produced in courts as evidence. A digital signature generates a unique string for the clip using algorithms recommended by the W3C. The World Wide Web Consortium (W3C) is an international consortium where member organizations, a full-time staff, and the public work together to develop Web standards. If the video in the clip is modified, a verification check for the unique string fails indicating that the content is tampered. When a clip is saved with the digital signature, a package file with the.PKG extension is created to save the clip.

To create a clip

1. Click the **Viewer** tab.
2. Specify the loop for which you want to create a clip.
3. Click  in the **Timeline** window. A dialog box appears with the name of the cameras from which video is displayed in the salvo layout.


Or
Right-click a loop in the Timeline window and select **Export Clip** in the context menu. A dialog box appears.

4. Select one of the following options in the dialog box:

Option	Select to...
Include only marked area and Auto split on recording gap	save one or more loop in the timelines as clips.
Create clip for entire duration	specify the time duration of video that you want to save in the clip. After selecting this option, the date and time (start and end) can be specified in the From and To boxes.

5. Under **Streams**, select the cameras. Only the video from the selected cameras are saved as clips.

Note: Exported clips only include the video streams from the selected cameras and any recorded audio is not included. Clip export does not support audio currently.

6. Under **Stream**, select the required **Format**.
7. Type the **Job Name** or retain the default name assigned by MAXPRO NVR.
8. Select the **Location** (folder in which you want to save the clip). You can click  to select another folder location.
9. To archive the clip with the digital signature, select the **Archive and Digital Signature** check box. A package is created with all the exported clips and stored in the specified location.
10. Type the **Comments** for the job to be created.
11. Click **OK** to create the clip. The clip creation status is indicated in the status bar. The clip is saved with an automatically generated name.

Note: The playback session is closed while creating a clip from the cameras connected to the recorder with playback limitation. You have to restore playback session manually after the clip creation is complete.

To cancel the clip creation

1. Click the clip creation status indicator in the status bar. The **Clip Export Status** dialog box appears.
2. Right-click the job name that you want to cancel, and then select **Cancel**. To cancel all the jobs, select **Cancel All**.

Naming Convention for Clips

The following table explains the automatic naming convention for a clip using an example.
Example of a clip name: 080109125809_CameraDoor_(1).WMV.

Clip Name	Description
080109	The first two digits indicate the year, the next two digits indicate the month, and the last two digits indicate the date of clip creation.
125809	The first two digits indicate the hour, the next two digit indicate the minutes, and the last two digits indicate the seconds.
CameraDoor	The name of the camera.
(1)	The file extension for the clip.
WMV	The file extension for the clip.

Viewing Images and Clips

From the **Images/Clip** window, you can view the images and clips saved in the **ImagesAndClips** folder at the location in the hard drive in which MAXPRO NVR files are installed.



To view the list of saved images and clips

1. Click the **Viewer** tab, and then click the **Images/Clip** tab.
2. In the **Images/Clip** window, expand the **Images and Clips** folder. Folders with names indicating the date in which the images and clips are created appears. The first two digits of the folder indicate the date, the next two digits indicate the month, and the last digits indicate the year.
3. Expand the folder corresponding to the date on which the image or clip you want to view is saved. Inside the folder, the clips are saved in the **Clips** sub-folder and images are saved in the **Images** sub-folder.
4. You can refresh the list of images and clips in the **Image/Clip** window to update the list. Refreshing the list displays the latest images and clip names. To refresh, right-click in the **Image/Clip** window to display a context menu and click **Refresh**.

Images

To view the images

In the **Images/Clip** window, right-click the image to display a context menu and select **Image View**. The salvo layout changes and the image is displayed on the screen.

Note: You can click  on the toolbar to view the salvo layout again. To view the image again from the salvo layout, click .

Viewing Options for Images

Option	Description
Image Size	On the toolbar, you can select the image size in the box. The image sizes available are Small, Medium, and Large.

Viewing Video Related to an Image

If video recording is available, you can view video from the date and time of saving the image.

- In the **Image/Clip** window, right-click the image to display a context menu and click **Show Video**. The video is played from the starting date and time of saving the image.

Clips

To view the clips

- In the **Images/Clip** window, right-click the clip to display a context menu and select **Show Video**. The video is displayed in the salvo layout.
Or
- Double-click the clip.
Or
- Drag the clip on a panel in the salvo layout.

To view the clips folder

- In the **Images/Clip** window, right-click the **Clips** folder or any clip to display a context menu and click **Show In Folder** to view the folder in which the clips are saved.

You can view the first frame of video in a clip as an image.

To view the first frame as an image

- In the **Images/Clip** window, right-click the clip to display a context menu and select **Image View**. The salvo layout changes and the first frame from the clip is displayed on the screen.

Deleting Images and Clips

In the **Image/Clip** window, you can delete the images and clips that you do not need.

To delete an image or clip

1. Click the **Viewer** tab.
2. Expand the folder in which the image or clips is saved in the **Images/Clip** window.
3. Right-click the image or clip which you want to delete. A context menu appears.
4. Click **Delete**.

Alarms

Alarms notify the occurrence of events to the operators. You can configure alarms to be triggered for the following events: adding a camera, recorder disk space nearing full, motion detection, and so on. The events that trigger an alarm can be selected while configuring MAXPRO NVR.

Each alarm goes through the following states.

New or Unacknowledged

When an alarm is triggered it appears in the **Alarm** window. The state of the alarm after it is triggered is referred to as unacknowledged. You can view the list of all the unacknowledged alarms in a table in the **Alarm** window. For each unacknowledged alarm, the following details are listed.

Column	Indicates...
Description	name of the event that triggered the alarm. For example, camera motion detected.
Event Details	name of the event attribute. Only the key event attribute is displayed in this column.
Device	name of the device such as recorder, camera associated with the event. For example, the name of the camera that detected motion.
IO Status	displays the input and output status.
Date:Time	date and time when the alarm is triggered.
Severity	severity of the alarm.
Site	site name where the device is located.
Global ID	global unique identification number of the event.

The number of unacknowledged alarms is displayed in a blinking mode in the status bar in red color (for example, **Alarms (10)** indicate that there are ten unacknowledged alarms).

Acknowledged

An acknowledged alarm indicates that the operator has taken the necessary action. After acknowledging the alarm, it is moved to the acknowledged alarms list in the **Alarm** window.

Cleared

After the response action is taken, you can remove or clear the alarms from the acknowledged list in the Alarm window.

Beep on alarm

The beep on alarm option can be selected if you want the beep sound to occur when there is an active alarm. The option is selected by default. To deselect the option, right-click the alarms indicator on the status bar, and then click to clear the **Beep on Alarm** check box.

Acknowledging Alarms

You can acknowledge an alarm to accept that the necessary response action is being taken.

To acknowledge an alarm

1. Click the **Viewer** tab, and then click **Alarm** tab.
2. Click to select the alarm you want to acknowledge in the **Alarm** window. The unacknowledged alarms are listed in the first table in the Alarm window.

Note: To select more than one unacknowledged alarm, press the **CTRL** key.

- Click **Acknowledge**. The acknowledged alarm appears in the second table in the Alarm window.

If you have selected multiple alarms, all the alarms are acknowledged and appear in the second table in the **Alarm** window.

Context Menu Options

When you right-click on the list of unacknowledged alarms in the first table, a context menu appears. The following table lists the commands in the context menu:

Command	Click to....
Ack	acknowledge the selected alarm.
Clear on Ack	automatically clear the alarms when they are acknowledged.
Ack All	acknowledge all the alarms.
Show Video	view video from the time corresponding to the occurrence of the event that triggered the alarm. The video is played in the currently selected panel in the salvo layout. Note: The video is played only when the video recording is available.
Show Preview Pane	view video related to the alarm in a four panel salvo layout. See Setting Preferences for more information.
Show Details	view the details of the alarm. This feature lists the device from which the alarm was triggered, description, date time when the alarm was triggered, status of the alarm, global event ID, and the event attribute associated to the alarm. You can also use the previous and next buttons to view the details of the alarms listed in the alarms window.
Freeze	stop receiving the new or unacknowledged alarms in the Alarm window. You can click this command again to start receiving the alarms. This feature is useful when the Alarm window contains many unacknowledged alarms and it becomes difficult to manage them. You can stop receiving the alarms momentarily and start receiving again when needed.
Receive Alarms Only	list only the alarms in the Alarm window. Alarms are listed only when the severity level of the corresponding event that triggered the alarm is greater than or equal to the alarm severity threshold value. See Setting Preferences for more information.
Receive Events Only	list only the events in the Alarm window. Events whose severity level is greater than or equal to the alarm severity threshold value are listed. See Setting Preferences for more information.
Receive Both Alarms and Events	list both alarms and events in the Alarm window.

Clearing Acknowledged Alarms

You can clear the acknowledged alarms after taking the necessary action.

To clear an acknowledged alarm

1. Click the **Viewer** tab.
2. Click to select the alarm you want to clear in the **Alarm** window. The acknowledged alarms are listed in the second table in the **Alarm** window.

Note: To select more than one unacknowledged alarm, press the **CTRL** key.

3. Click **Clear**. The alarm is removed from the list of acknowledged alarms.

If you have selected multiple alarms, then all the alarms are cleared.

To clear all the acknowledged alarms

- Click **Clear All**. All the acknowledged alarms are cleared and removed from the list of acknowledged alarms.

Context Menu Options

When you right-click on the list of acknowledged alarms in the second table, a context menu appears. The following table lists the commands in the context menu:

Command	Click to....
Clear	clear the selected acknowledged alarm.
Clear All	clear all the acknowledged alarms.
Show Video	view video from the time corresponding to the occurrence of the event that triggered the alarm. The video is played in the currently selected panel in the salvo layout. Note: The video is played only when the video recording is available.
Show Preview Pane	view video related to the alarm in a four panel salvo layout. See Setting Preferences for more information.
Show Details	view the details of the alarm. This feature lists the device from which the alarm was triggered, description, date time when the alarm was triggered, status of the alarm, global event ID, and the event attribute associated to the alarm. You can also use the previous and next buttons to view the details of the alarms listed in the alarms window.

Command	Click to....
Freeze	stop receiving the new or unacknowledged alarms in the Alarm window. You can click this command again to start receiving the alarms. This feature is useful when the Alarm window contains many unacknowledged alarms and it becomes difficult to manage them. You can stop receiving the alarms momentarily and start receiving again when needed.
Clear on Ack	automatically clear the alarms when they are acknowledged.
Receive Alarms Only	list only the alarms in the Alarm window. Alarms are listed only when the severity level of the corresponding event that triggered the alarm is greater than or equal to the alarm severity threshold value. See Setting Preferences for more information.
Receive Events Only	list only the events in the Alarm window. Events whose severity level is greater than or equal to the alarm severity threshold value are listed. See Setting Preferences for more information.
Receive Both Alarms and Events	to list both alarms and events in the Alarm window.

Searching Recorded Video in MAXPRO NVR

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Overview

You can search for video recorded from cameras connected to MAXPRO NVR. You can filter the search for recorded video based on search conditions like video recorded today, yesterday, and others.

To search for recorded video and events

1. Click the **Search** tab. By default MAXPRO NVR is displayed under **Recorders** in the **Filter** window.

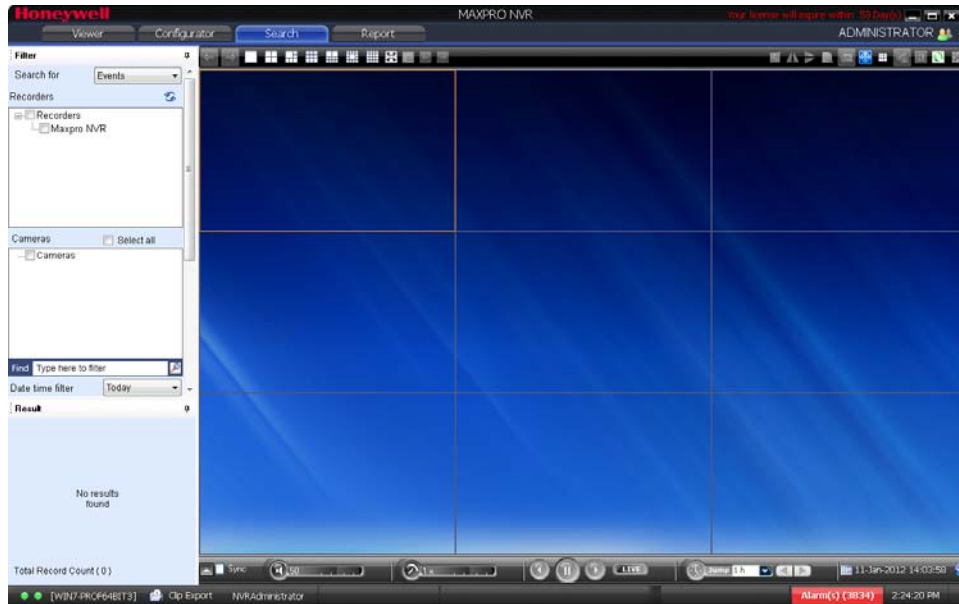



Figure 6-1 Search tab

2. Select “Events” or “Recordings” from the **Search for** list.
3. The list of cameras that are connected to MAXPRO NVR are displayed under the **Cameras** section (in the **Filter** window). Select the check box next to the cameras from which the video is recorded. Select the **Select all** check box to select all the cameras.
4. Select one of the following search conditions corresponding to **Date time filter**.
 - **Today** - video recorded in MAXPRO NVR today.
 - **Yesterday** - video recorded in MAXPRO NVR yesterday.
 - **Last 7 Days** - video recorded in MAXPRO NVR in the last seven days.
 - **Last 30 Days** - video recorded in MAXPRO NVR in the last 30 days.
 - **On** - video recorded on a particular date in MAXPRO NVR. The **From** box to select the date is enabled when you select **On**.
 - **On or Before** - video recorded in the MAXPRO NVR up to a particular date. The **From** box to select the date is enabled when you select **On or Before**.
 - **Between** - video recorded in the MAXPRO NVR between a time duration. The **From** and **To** boxes are enabled when you select **Between**. You can select the start time and date in the **From** box. The end time and date can be selected in the **To** box.
5. In the **Type** list, select the check boxes for the events you want to include in the search result. Select the **Select All** check box to include all the events.

- Click the  icon. The recorded video is searched based on the search conditions. The search results are listed in the **Results** window.

Playing Video after Searching

Drag and drop the search result from the **Results** window on the salvo layout. The panel starts displaying the recorded video.

Note: To select more than one search result, press the **CTRL** key.


Deleting the Recorded Video

Caution: Deleting the recorded video from the search result also deletes it from the MAXPRO NVR.

To delete the recorded video

- Select the recorded video from the list of search results.

Note: To select more than one search result, press the **CTRL** key.

- Click the  icon. The recorded video is deleted from MAXPRO NVR.

Intellisense Search

The Intellisense search option makes the search of cameras simpler and easier. When a part of the camera name is typed in the text box, the Intellisense search displays the list of cameras that are connected to various recorders in the Devices window. For example, if you are searching for Camera 2 connected to particular recorder, then type **Ca** in the text box, the list of camera names that contain 'ca' appears.

Intellisense search also supports wild characters while searching. For example,



ca* — camera names that begin with 'ca' are displayed.

*ca — camera names that end with 'ca' are displayed.

ca — camera names that contain 'ca' are displayed.

! ca — cameras that do not have 'ca' in their name are displayed.

Select the required filter string and click on the filter button. You can toggle between the

Filter On and Off mode using the  option or right-click , and select between **Filter ON** and **Filter OFF**. The hot key to activate Intellisense search is **F4**.

Timeline Search

Note: See [Timeline](#) for more information.

Calendar Search

Note: See [Calendar Search](#) for more information.

Preview Search

Note: See [Preview Search](#) for more information.

MAXPRO NVR Web Client

In this chapter...

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Introducing Web Client

The MAXPRO NVR Web Client allows you to remotely access the MAXPRO NVR server using a web browser like Internet Explorer and perform video surveillance. It gives you the flexibility to view live video and perform the basic video surveillance functions remotely over the web.

MAXPRO NVR Web client is available with MAXPRO NVR 3.1 build 65. By default MAXPRO NVR installs the Web client and MAXPRO Web Configurator along with the NVR 3.1 installation. You can use the web client once you have installed the NVR 3.1 build 65.

MAXPRO NVR Web Client functions involve the following tasks

- Viewing the live video
- Viewing Recorded Video (Playback)
- Taking Snapshot
- Viewing Presets

Installing Web Client

By default MAXPRO NVR 3.1 Build 65 installs the Web Client component on your machine. It also installs the MaxproWEBConfigurator utility to change or update the system and server configuration. If you want to access the MAXPRO NVR Server using Web Client remotely through a supported web browser then you should install Silverlight on the remote machine.

Prerequisites to access MAXPRO NVR Server Remotely

The following are the prerequisites to access the MAXPRO NVR server remotely.

- **Silverlight** : Ensure that Silverlight version 4 and above is installed on your machine. If you don't have the Silverlight plug-in on your machine, you can download it from the following Microsoft link. "<http://www.microsoft.com/getsilverlight/Get-Started/Install/Default.aspx>"
- **Web Browsers Supported on Windows Systems**: Ensure that Internet Explorer version 8 or above, or Firefox version 15.0.1 or above or Chrome version 32.x or above is installed on your PC.
- **Web Browsers Supported on MAC systems**: Ensure that Safari version 7 or above is installed on your MAC machine.

Setting the MAXPRO Web Configurator

MAXPRO NVR by default installs the Web Configurator and  is displayed on your desktop.

MAXPRO NVR Web Configurator is a utility and it allows you to perform the following:

1. System Configuration
2. Server Configuration

System Configuration tab: The system configuration tab allows you to:

- update the administrator user credentials used by the web server. By default , admin is the username and trinity is the password. It is recommended not to change the default settings.

Note: You can update only the Administrator credentials used by Web Server only. The Administrator credentials used by the Web Server should be configured as a non-Windows Administrator user in the MAXPRO NVR through the desktop client.

- allows you to enable the PTZ operations for cameras from web client. It is not recommended to use this feature in the current release.
- allows you to select the FPS for a better Stream quality. It is recommended not to change the default settings.
- select the protocol for secure communication. The available options are HTTP and HTTPS. By default HTTP is set .

Server Configuration tab: The server configuration tab allows you to update the Web Server and MAXPRO NVR Server IP details.

To set the Web Configurator

1. Double-click  on the desktop. The **MAXPRO Web Configurator** dialog box appears.

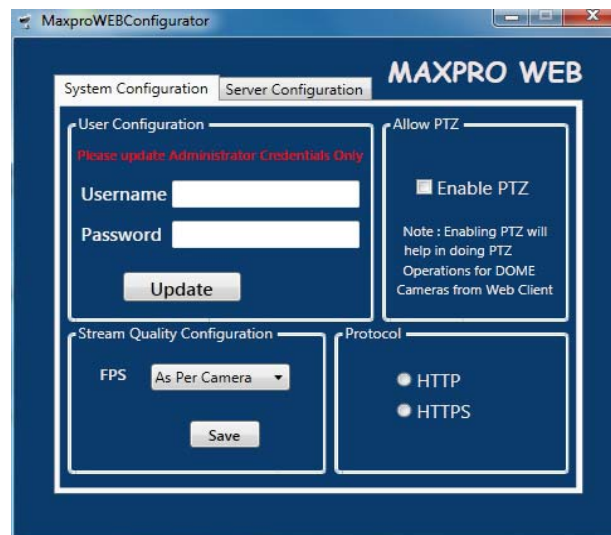


Figure 3-1 MAXPROWebConfigurator

Note: By default the System Configuration tab is selected.

2. Under **User Configuration:** When the (non-window) Administrator login name and password is changed then you can update the credentials here to change the login and password of MAXPRO NVR Web Client to logon to web client .
 - Type the **Username** and **Password** and then click **Update**.

Note: You can update only the Administrator credentials used by the Web Server. If you are changing the default administrator user credentials (admin/trinity) in NVR through the desktop client, then you should change and update the credentials in MaxproWEBConfigurator as well for Web Server to communicate with NVR and Web Clients to work.

The Administrator credentials used by the Web Server should be configured as a non-Windows Administrator user in the MAXPRO NVR through the desktop client. As a good security practice, it is recommended to update the default credentials on your system.

3. Under **Allow PTZ:**

- Select the **Enable PTZ** check box to perform PTZ operations on a PTZ camera from Web Client. It is not recommended to use this feature in the current release.
-

Note: PTZ feature is not supported and It is not recommended to use this feature in the current release.

4. Under **Stream Quality Configuration:**

- Select the required **FPS** options as applicable and then click **Save**. The available options are:
 - **As Per Frame:** Select this option to view the video as per the camera stream settings. If the camera supports 30 frames per second to stream the video then you can view 30 frames per second and accordingly your bandwidth is consumed. By default **As Per Frame** option is selected and it is recommended not to change this option, because this provides you with the best quality video.
 - **Only IFrame:** select this option if your bandwidth is low and if you want to view only one IFrame per second.

- Note** MAXPRO NVR Web Client supports streaming quality resolution up to 1080p. Cameras configured above 1080p resolution are not supported. If you drag and drop a camera configured with megapixel resolutions (above 1080p) resolution then a message appears and video is not displayed as shown below.



5. Under **Protocol**:

- Click the appropriate **Protocol** options for secure communication. The available options are **HTTP** and **HTTPS**. By default HTTP protocol is selected.

- Note:** If you want to access the web client using secured connection then click the HTTPS option. When you access the MAXPRO NVR server using the URL **https://<MAXPRO NVR Server IP or Machine name>/MAXPROWEB/** then the following message is displayed. Click **Continue to this website** to proceed.



The above message appears by default when you access the NVR server for the first time. You can choose to buy a domain name specific certificate, create it and then install it. See [Creating Self Signed Certificate](#) and [Installing the Certificate](#).
Or
You can create a self signed certificate and then install it. See [Creating Self Signed Certificate](#) and [Installing the Certificate](#).
The above settings are applicable to Internet Explorer, Chrome, Firefox and Safari web browsers and these settings are valid if the web client is accessed using the Domain/Host Name. If you access the web client using the IP then the above settings are not valid.

- Click the **Server Configuration** the following screen appears.




Figure 3-2 MAXPROWebConfigurator-Server Configuration

Note: The Web Server and MAXPRO Server are both installed on the NVR server machine by default and the IPs are set by default to local IP or machine name. It is recommended to change these settings to NVR Server (local) machine name, if it is not set by default in your system. For Honeywell supplied NVR boxes, default machine name is MAXPRO-NVR and can be updated in the configuration from the tool.

- **Web Server IP:** If the MAXPRO NVR server machine name or IP (as applicable) is changed then you should change the Web Server IP. Type the new machine name or IP (as applicable) in this box and then click **Update**.
 - **MAXPRO Server IP:** If the MAXPRO NVR server machine name or IP (as applicable) is changed then you should change the MAXPRO Server IP. Type the new machine name or IP (as applicable) in this box and then click **Update**.
-

Note: Both Web Server IP and MAXPRO Server IP should be same.

- Click  to close the MaxproWebConfigurator.

Logging on to MAXPRO NVR Web Client

To log on to MAXPRO NVR Web Client

1. Type the URL **http://<MAXPRO NVR Server IP or Machine name>/MAXPROWEB/** in your web browser and then press **Enter**. The login page appears.

Note: <MAXPRO NVR Server IP or Machine name> needs to be replaced by the IP address or machine name (as applicable) of the MAXPRO NVR Server machine on which both the Web Server and NVR Server are installed by default.

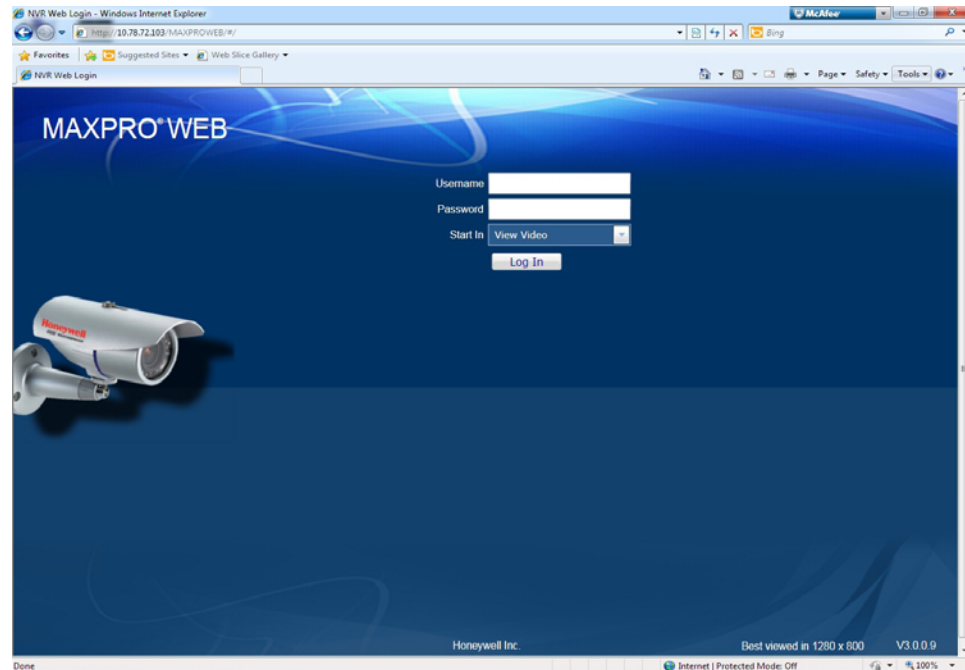


Figure 3-3 MAXPRO NVR Login page

Note: If Silverlight is not installed on your machine then a message



is displayed. If you are using Internet connection then you can click the link **Get Microsoft Silverlight** to download the Silverlight. See [Prerequisites to access MAXPRO NVR Server Remotely](#) to install Silverlight.

2. Type your **Username**. The default user name is “admin”.
3. Type your **Password**. The default password is “trinity”.

Note: User credentials are configured in NVR and the default administrator credentials (Username and Password) which are configured in MAXPRO NVR are, “**admin**” and “**trinity**”.
By default the **Start In** drop-down list is selected with **View Video** option.

4. Click **Login**. The below MAXPRO NVR Web page appears if your credentials are successfully validated. The name of the currently logged in user is displayed as **admin** on the top left of the page.

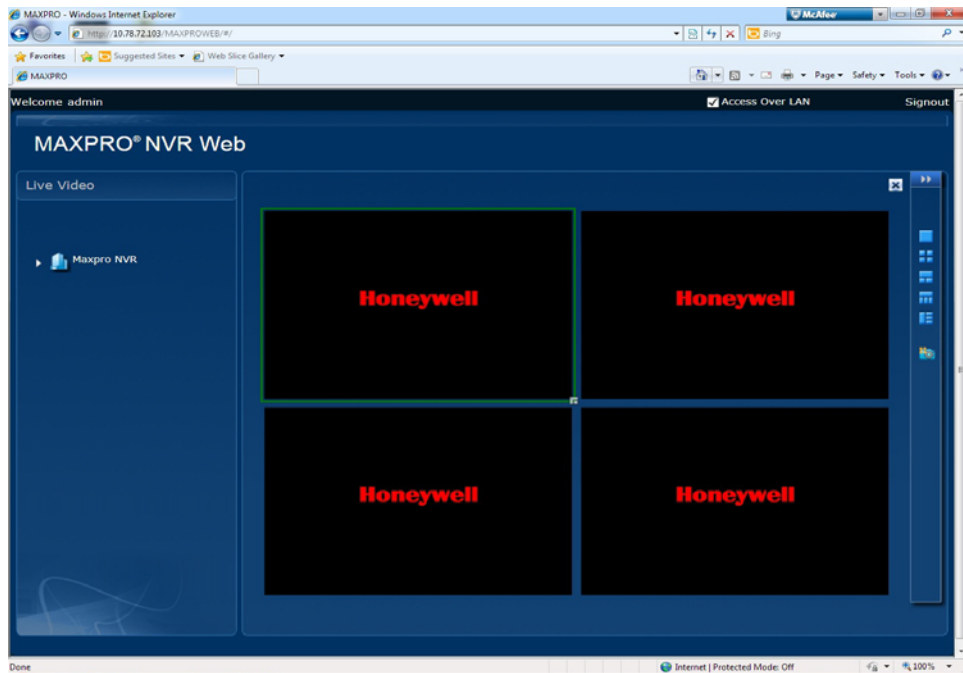


Figure 3-4 MAXPRO NVR Web Page -Initial View

5. Under **Live Video** pane, click the **MAXPRO NVR** node. The list of cameras configured in the MAXPRO NVR server is displayed.

Note: The list of cameras displayed is based on the user or operator permissions configured in the MAXPRO NVR Server.

Signout

To signout from the MAXPRO NVR Web Client page

- Click **Signout** on the top right corner of the page.

Familiarizing with the Web Client Page

The web page of MAXPRO NVR Web client consists of tree-structure, floating window, and icons. On opening the page, you see the following: **Live Video Pane** and default **Salvo view**.

MAXPRO NVR Web Page

The following figure illustrates the MAXPRO NVR Web Page.

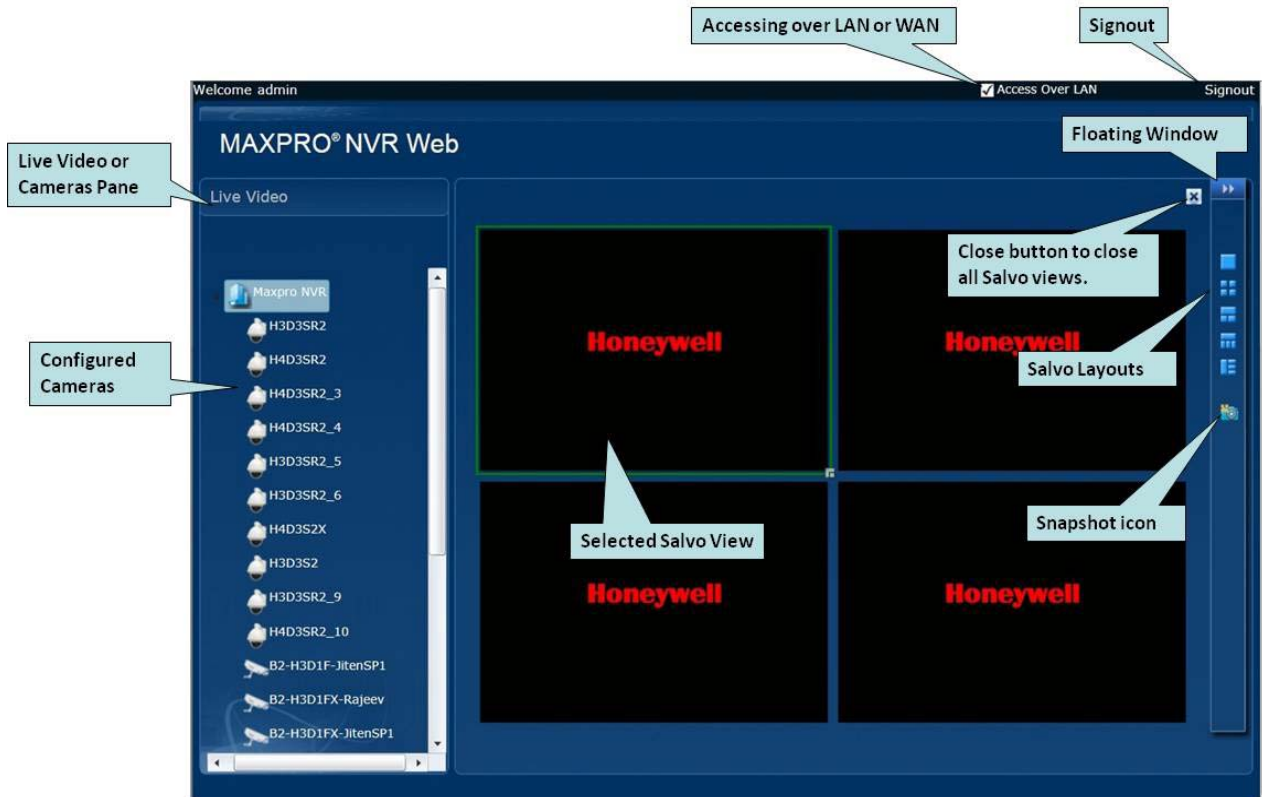


Figure 3-5 MAXPRO NVR Web Client Page-Familiarization



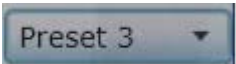




The following components are displayed on the screen.



Component	Description
Live Video or Camera Pane	Displays the list of cameras which are configured in MAXPRO NVR.
Configured Cameras	List of configured cameras which are available to render video. Note To view the list of cameras in Live video pane, you should configure the cameras in MAXPRO NVR. See Configuring the Cameras . The list of cameras listed is based on the user or operator permissions configured in the MAXPRO NVR.

Component	Description
Accessing over LAN or WAN	Select this check box if you want to access web client using LAN connection. Clear this check box if you want to access web client using WAN connection. Note By default this check box is selected when you login the web client page.
Salvo Layout	An arrangement of panels in which video is displayed. Select the required layouts to view the video. The Salvo views can be resized. See Resizing the Salvo .
Snapshot Icon	Click to take a snapshot of entire salvo layout.
Floating Window	Click to display different salvo layouts and snapshot icon. You can select the required salvo view to view the video in the panel.
Close Button	Click to close all the panel at once.

Video Control Options

The toolbar that appears on top of a panel enables you to view the name of the video source and take snapshot for a particular video panel. The toolbar that appears on the bottom and on the right of a panel consists of icons that enable you to perform the following actions:

Icon	Click to...
	set the date and time for playback. See Viewing Recorded Video .
	view the live video. See Live Video .
	displays a drop-down list of presets. You can select a preset for the camera. See Viewing Presets and Creating Self Signed Certificate .
	display the playback settings. See Viewing Recorded Video .
	view the live video while you are in playback. See Viewing Recorded Video .
	take a snapshot for the required panel. You can view this icon when you hover the mouse on the top of a panel. See Taking a Snapshot .
	to close the required panel. You can view this icon when you hover the mouse on the top of a panel

Icon	Click to...
 A vertical toolbar icon containing several small square buttons, representing the salvo view.	select the required salvo view to arrange the panels. See Resizing the Salvo .
 A small square icon with a white 'X' on a blue background, representing a close button.	to close all the panels in a salvo layout.

MAXPRO NVR Web Client Features

MAXPRO NVR Web Client features includes viewing live video, playback, taking snapshots and viewing presets.

Live Video

You can view live video using the option available in MAXPRO NVR web client. The panels in the salvo layout display video. You can select the video source from cameras on the Live Video pane.

Note: To view the list of cameras in Live video pane, you should configure the cameras in MAXPRO NVR. See [Configuring the Cameras](#). The list of cameras listed is based on the user or operator permissions configured in the MAXPRO NVR.

To view live video

- Drag and drop the required video source from the **Live video** pane on a panel in the salvo layout.

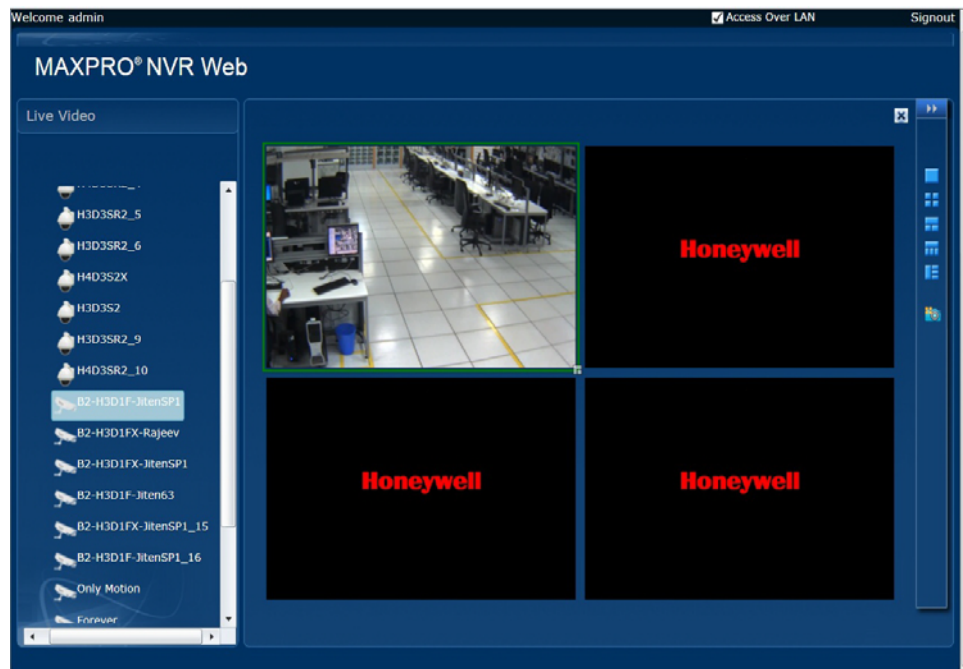


Figure 3-6 Web Client - Live Video

Troubleshooting Tip

If the video is not streaming through web client then perform the below steps to reset Internet Explorer (browser) to default settings except user specific settings like favorites, bookmarks etc:

1. In Internet Explorer navigate to **Tools -> Internet Options -> Advanced** tab and then click the **Reset** button. The **Reset Internet Explorer Settings** dialog box appears.

2. Select 'Delete personal settings' check box and then click the **Reset** button.
3. Close and then open the Internet explorer.

Note MAXPRO NVR Web Client supports streaming quality resolution up to 1080p. Cameras configured above 1080p resolution are not supported. If you drag and drop a camera configured with megapixel resolutions (above 1080p) then a message appears and video is not displayed as shown below.



You can view live video in different panels of the salvo layout. When you hover the mouse over a video display, a toolbar appear over the panel. The toolbar enables you to perform actions such as Playback, Live video, taking snapshots and viewing Presets.

Note: Each MAXPRO NVR box has a limit of 32 streams for both live and playback feature combined. Even if the same camera is opened for live in multiple web clients then it consumes only 1 stream. Each playback function consumes 1 additional stream always.

Resizing the Salvo

You can view the salvo layout when you select the available options on the floating window tab. At a time, you can select one of the salvo layout .For example: If you want to view video from two cameras, select a salvo layout with two or more panels.

To resize the salvo layouts

- Click the required salvo layout options available on the floating window.

Viewing Recorded Video

You can easily retrieve and view recorded video using the date and time controls in the panel toolbar. When you select a camera from the live video pane to view video, a toolbar appears.

Note: Each MAXPRO NVR box has a limit of 32 streams for both live and playback feature combined. Even if the same camera is opened for live in multiple web clients then it consumes only 1 stream. Each playback function consumes 1 additional stream always.

To play recorded video

1. Drag and drop a camera from the **Live video** pane into the panel.
2. Hover the mouse at the bottom of a panel over live video. A tool bar appears.

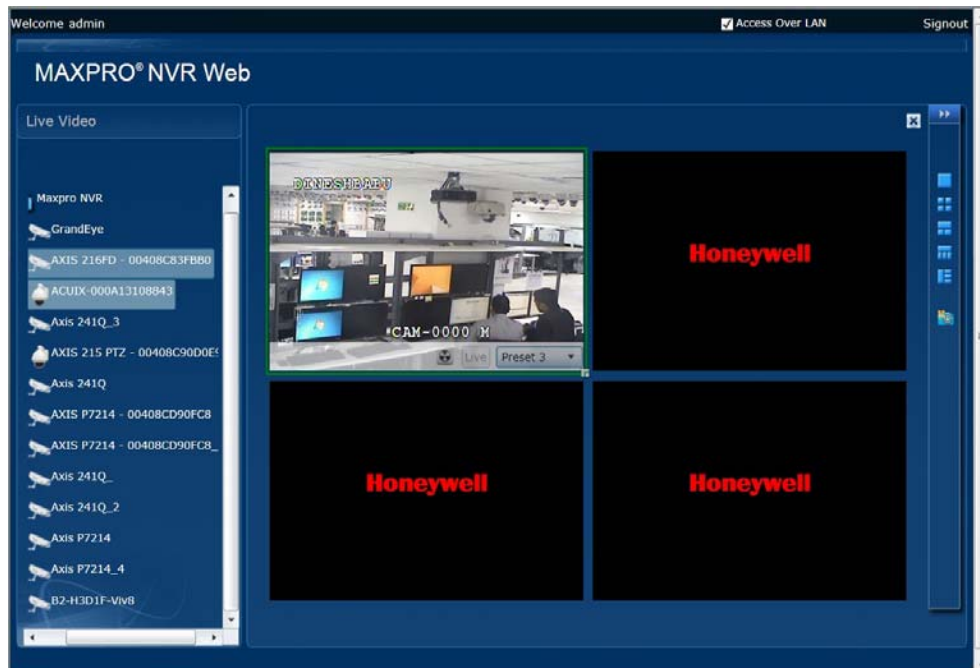





Figure 3-7 Web Client - Playback

3. Click the  icon.
4. Select the date and time in the date and time calendar box  and then click . The video recording is played from the selected date and time.

Navigation Tip

At any point of time, click  to go back to the Live video view.

Viewing Presets

Preset can be viewed in web client if the camera is a PTZ camera. To view Presets in web client you need to define the presets in MAXPRO NVR. To configure presets in MAXPRO NVR, see Creating a Sequence.

To View Presets

1. Hover the mouse at the bottom of a panel over live video. A tool bar appears.

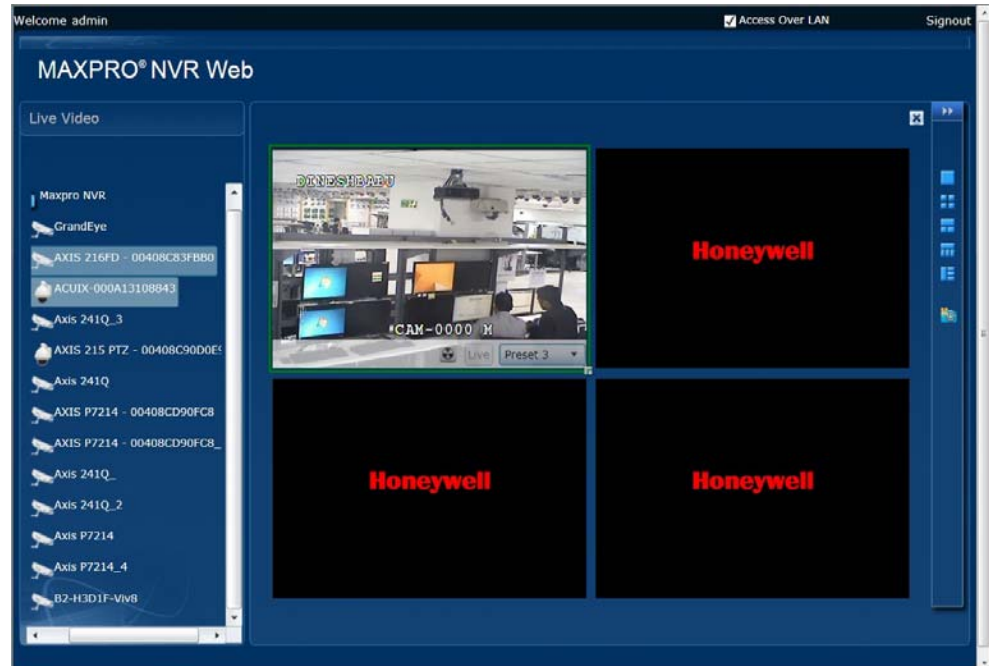
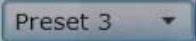


Figure 3-8 Web Client - Presets

2. Click  and then select the required preset from the drop-down list to view the configured preset.


Note: To view Presets in web client you need to define the presets in MAXPRO NVR. See Creating a Sequence.

Taking a Snapshot

You can take snapshot of the single video panel in a salvo and also all video panels in a salvo.

Note: Snapshot feature is not supported on Mac and print screen feature in Mac can be used alternatively.

To take a snapshot of all the video panels in a salvo

1. Click  on the rightmost pane of the web page. A confirmation message appears.

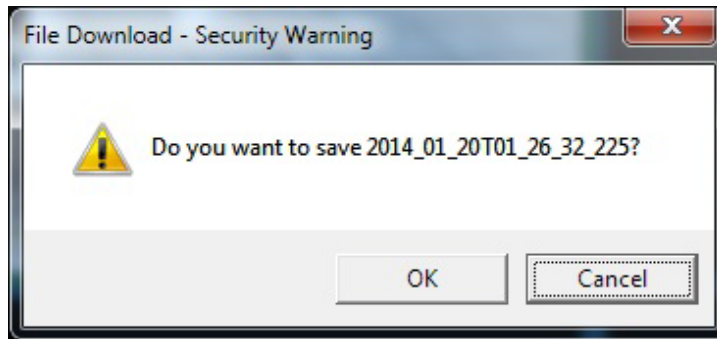



Figure 3-9 Confirmation dialog - All Salvo Views

2. Click **OK** to save the snapshot.

To take snapshot of the single video panel

1. Hover the mouse at the top of a panel over a live a video. A tool bar appears.
2. Click the  icon. A confirmation message appears

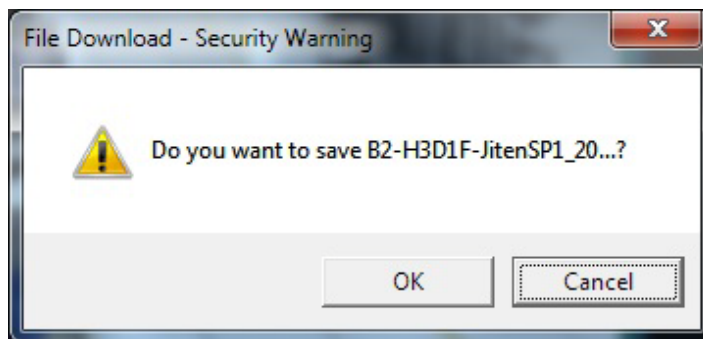


Figure 3-10 Confirmation dialog - Single Video Panel

3. Click **OK** to save the snapshot.

Creating Self Signed Certificate

Self signed certificate is required if you want to access the MAXPRO NVR server using your domain name. You should create a certificate, bind it to the https and then install the certificate to access the server using the web browser (Internet Explorer, Chrome, Firefox and Safari).

To create self signed certificate

1. Open the **Internet Information Manager (IIS)** window.
2. Select the server node under **Connections** pane.
3. Under **IIS**, double -click the **Server Certificate** option as shown below.

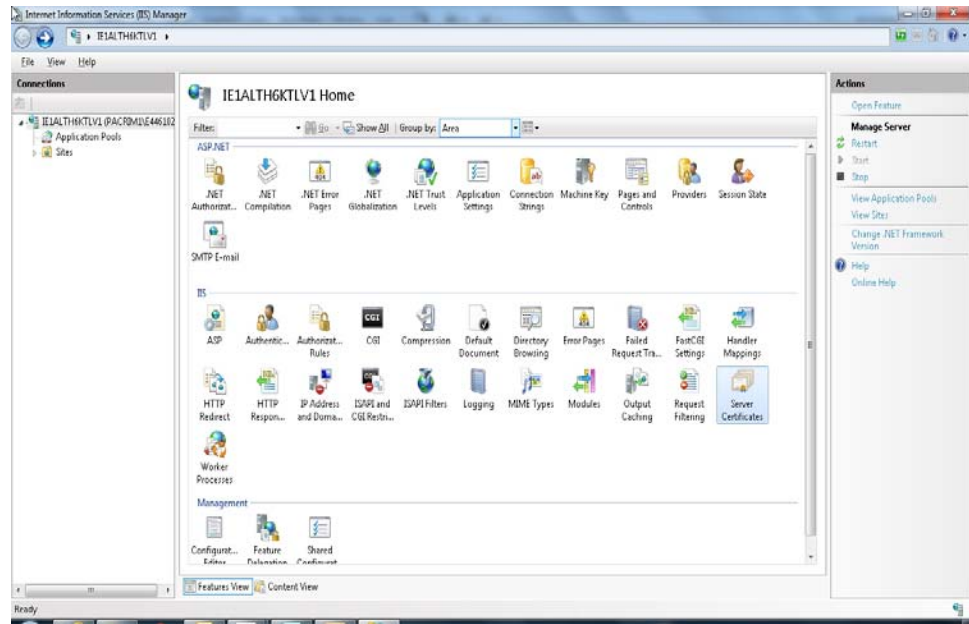


Figure 3-11 Server Certificate.

The **Server Certificate** window is displayed as shown below.

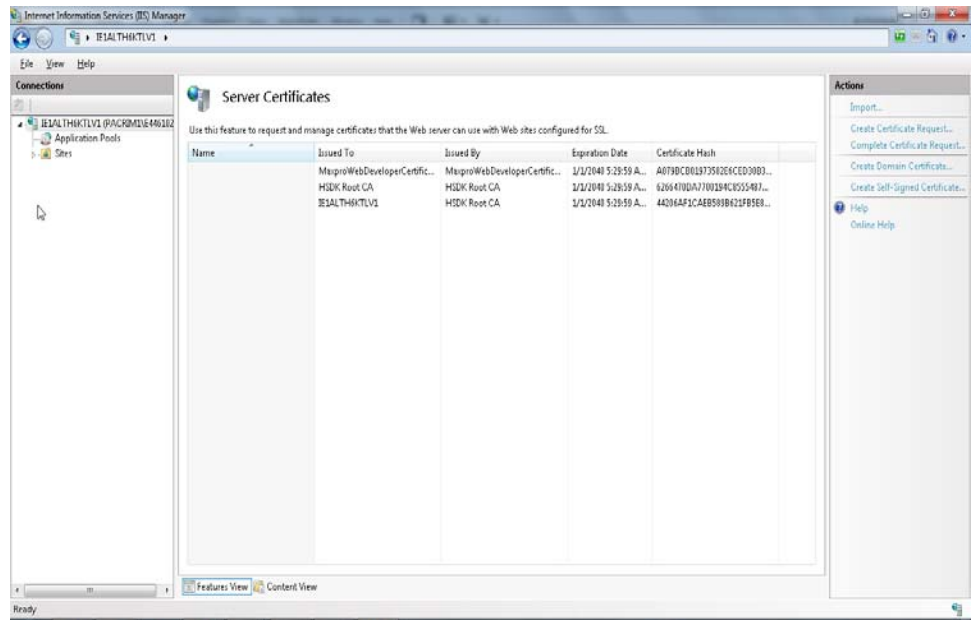


Figure 3-12 Server Certificate

- Click the **Create Self-Signed Certificate** on the rightmost pane. The **Specify Friendly Name** dialog appears.

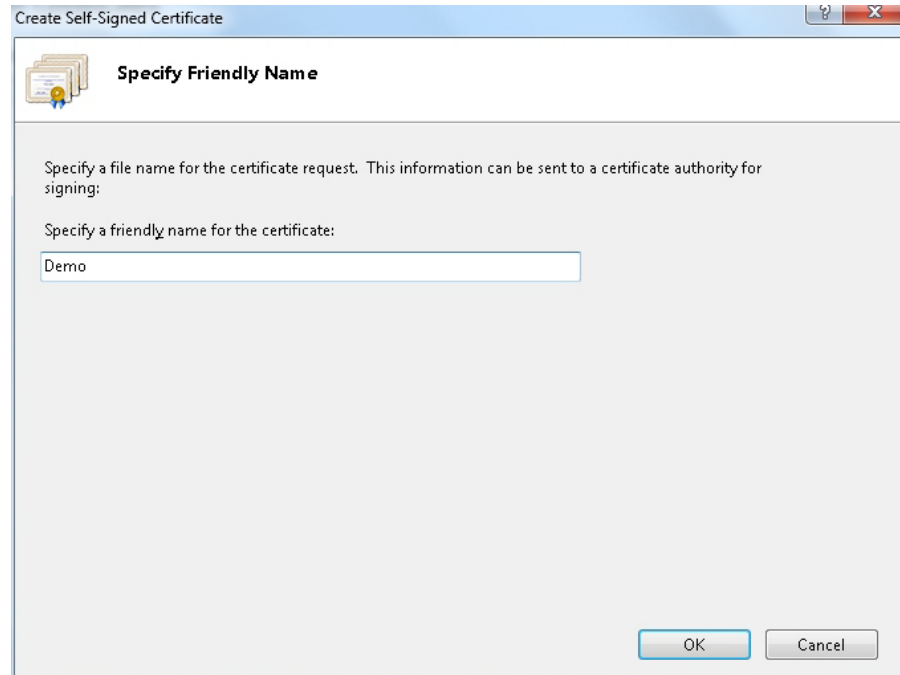


Figure 3-13 Specify Friendly Name

5. Type a friendly name for the certificate and then click **OK**. A new certificate is generated and listed under server certificates list as shown below.

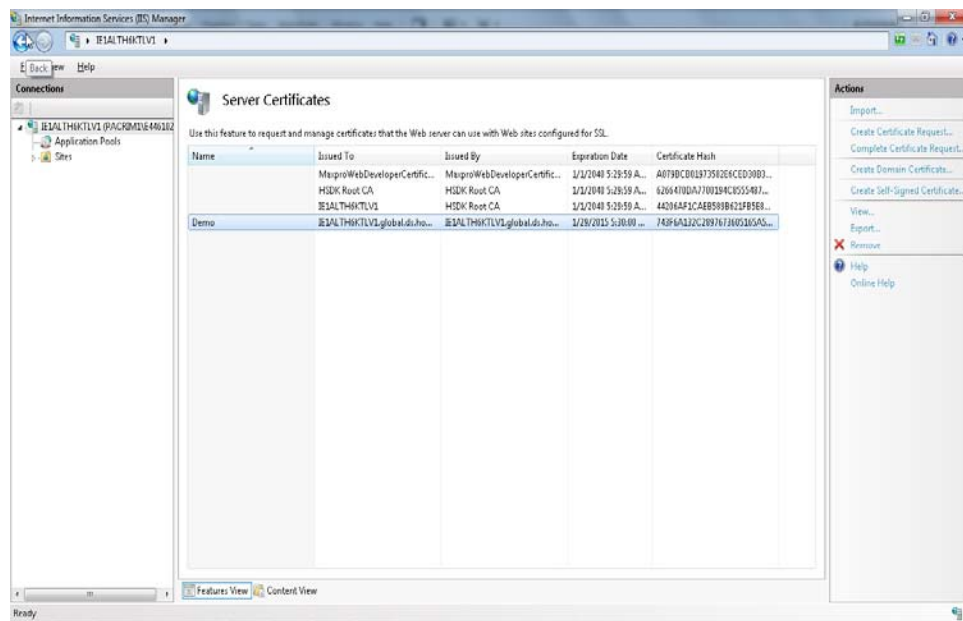


Figure 3-14 Generated Certificate

Binding the generated certificate with https

To bind the generated certificate with the https

1. In the **Internet Information Manager (IIS)** window, expand the server node under **Connections** pane.
2. Navigate to **Sites > Default Web Site**.
3. Click **Bindings** in the rightmost pane. The **Site Bindings** dialog appears.

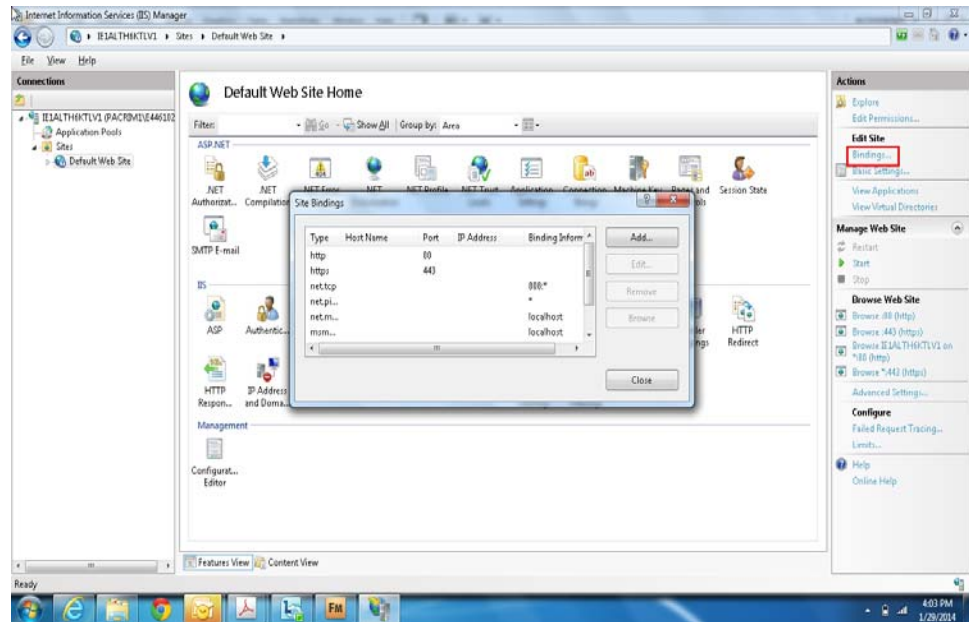


Figure 3-15 Site Bindings Dialog

4. Select the type as **https** and then click **Edit..** The **Edit Site Bindings** dialog appears.

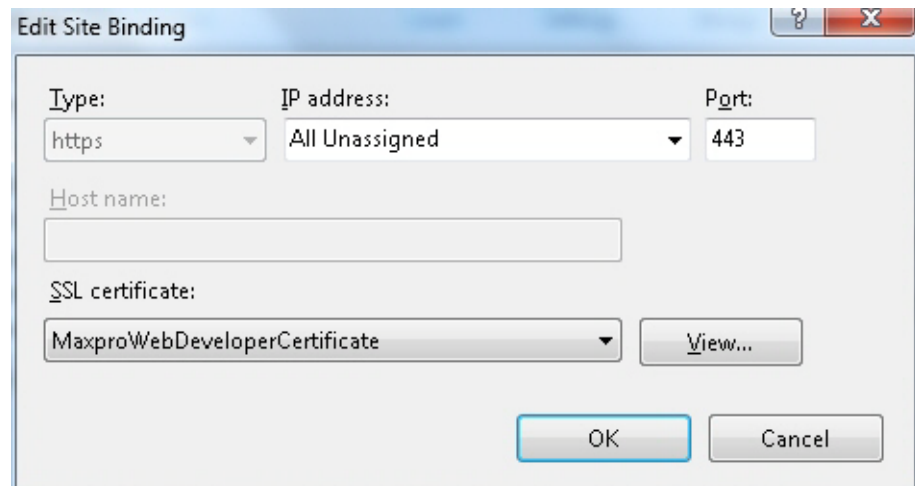


Figure 3-16 Edit Site Bindings

5. Select the **Demo** SSL certificate from the **SSL Certificate** drop-down list.
6. Select **All Unassigned** from the **IP Address** drop-down list.

Note: Ensure that you select All Unassigned option from the IP Address drop-down list and the port should be 443.

7. Type the port number as **443**.
8. Click **OK**.

Installing the Certificate

Once you have created a self signed certificate you need to install the certificate in the Internet Explorer on machines accessing the web client. If you do not install the certificate then the web browser displays the following error.

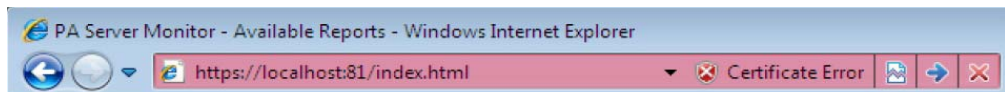


Figure 3-17 Certificate Error

To view the error details, click on the **Certificate Error** message. A **Untrusted Certificate** message box is displayed as shown below.

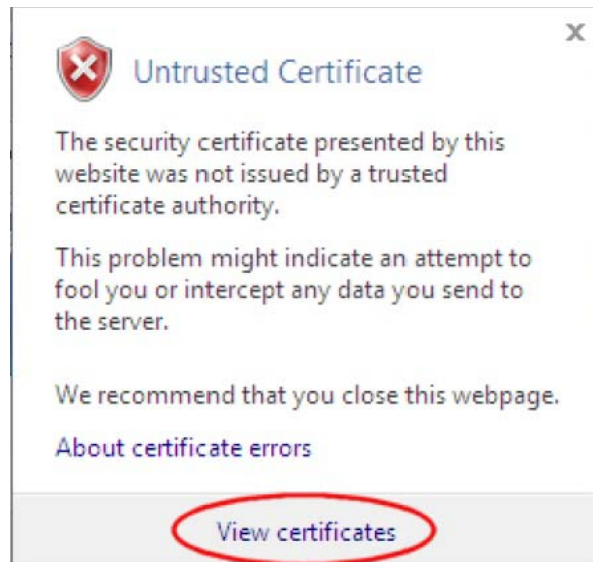


Figure 3-18 Untrusted Certificate

To install the certificate

1. Click **View Certificate** as shown in [figure 3-18](#). The **Certificate** dialog box appears

Note: You can install the certificate using Internet Explorer. Once the installation is done you can access the MAXPRO NVR server using other browsers on the same machine using your domain name.

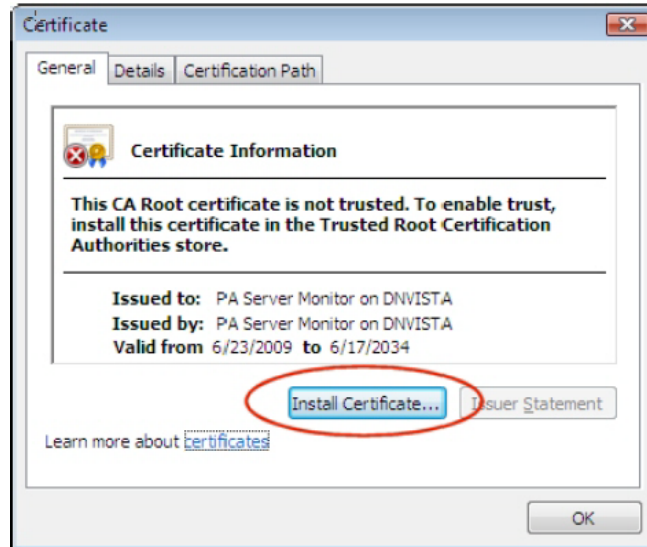


Figure 3-19 Certificate

2. Click the **Install Certificate** button. **Certificate Import Wizard** dialog box appears

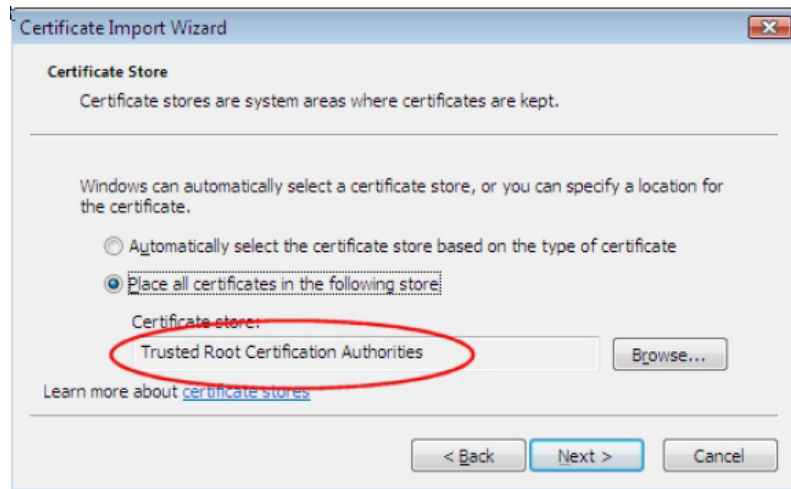


Figure 3-20 Certificate Import Wizard

3. Click the **Browse** button and then select the **Trusted Certificate Authorities** option.
4. Click **Next** until **Finish** button is displayed.
5. Click the **Finish** button. A confirmation message **“you want to add the new certificate”** is displayed.

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Generating Reports

In this chapter...

Section	See page...
Overview	184
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Generating the Operator Log Report	187
Viewing, Printing, and Saving the Report	188

Overview

You can generate the following two types of reports: Event History report and Operator Log report.

Event History Report

The event history report can be generated for cameras and recorders. The event history report lists the events related to a device during a time period. For example, for a camera, you can generate the event history report to know the occurrence of events like enabling of camera motion detection, starting of background recording, and others. You can select the device and list of events that you want to view while generating the report.

Operator Log Report

The operator log report can be generated to view the activities performed by users. The operator log report lists the activities performed by users during a time period. For example, creating clips, adding bookmarks, and other actions performed by a user. You can select the users and the list of activities you want to view while generating the report.

Generating the Event History Report

To generate an event history report

1. Click the **Report** tab.
2. In the **Reports** window, select the **Event History Report**.
3. Click **Show Report**. The **Event History Report** dialog box appears.

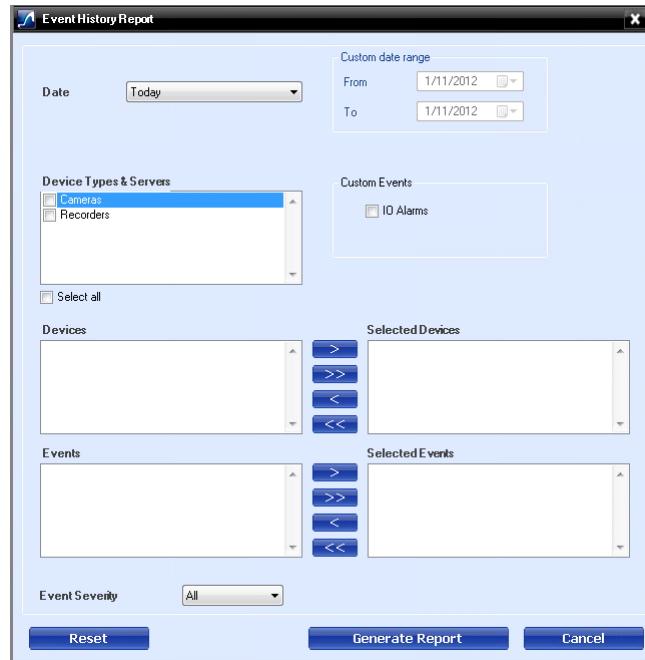










Figure 7-1 Event History Report

4. In the **Date** box, select the date for which you want to view the list of events. The following table lists the options in the **Date** box:

Option	Description
Today	event history report for today's events.
Yesterday	event history report for yesterday's events.
Last 7 days	event history report for the last seven day's events.
Custom Date Range	event history report between a start date and end date. The From and To boxes under Custom Date Range are enabled when you select this option. You can select the start date in the From box and the end date in the To box.

5. Select the **Site**.
6. In the **Device Types** box, select the check box next to the type of device for which you want to generate the event history report. You can select more than one type of device. You can select the **Select all** check box to select all the device types. Based on the selection in the **Device** Type box, the list of devices appear in the **Devices** box. For example, if you have selected **Video Inputs** in the **Device Types** box, all the camera names appear in the **Devices** box.
7. Under **Custom Events**, select the **IO Alarms** check box to include the input and output alarms.

8. In the **Devices** box, select the device for which you want to generate the event history report. The selected devices appear in the **Selected Devices** box.
 - **To select a device**
Select the check box next to the device name and click . You can select more than one device. To select all the devices in the **Devices** box, click .
 - **To remove a device**
Select the check box next to the device name and click . You can select more than one device. To remove all the devices in the **Selected Devices** box, click .
9. In the **Events** box, select the events that you want to include in the event history report. The selected events appear in the **Selected Events** box.
 - **To select a device**
Select the check box next to the event name and click . You can select more than one event. To select all the events in the **Events** box, click .
 - **To select a device**
Select the check box next to the event name and click . You can select more than one event. To select all the events in the **Selected Events** box, click .
10. In the **Event Severity** list, select the severity of the event.
11. Click **Generate Report**. The event history report is generated and appears in the display area.

Generating the Operator Log Report

To generate the operator log report

1. Click the **Report** tab.
2. In the **Reports** window, select the **Operator Log Report**.
3. Click **Show Report**. The **Operator Log Report** dialog box appears.

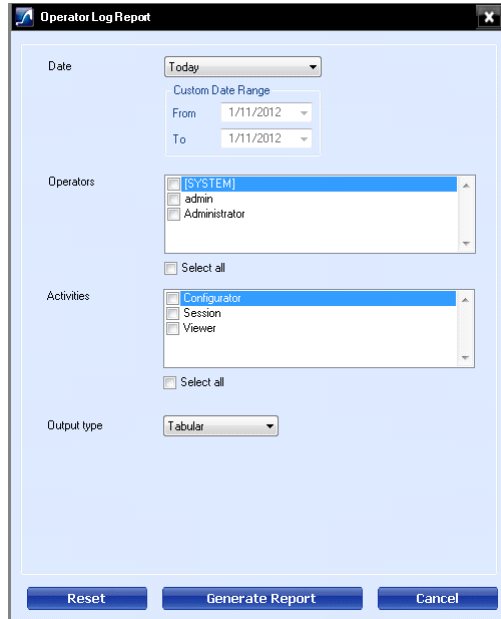


Figure 7-2 Operator Log Report












4. In the **Date** box, select the date for which you want to view the list of events. The following table lists the options in the **Date** box:

Option	Description
Today	operator log report for today's events.
Yesterday	operator log report for yesterday's events.
Last 7 days	operator log report for the last seven day's events.
Custom Date Range	operator log report between a start date and end date. The From and To boxes under Custom Date Range are enabled when you select this option. You can select the start date in the From box and the end date in the To box.

5. In the **Operators** box, select the check box next to the operators for which you want to generate the operator log report. You can select the **Select All** check box to select all the operators.
6. In the **Activities** box, select the check box next to the activities which you want to view in the operator log report. You can select the **Select all** check box to select all the activities.
7. In the **Output type** box, select the type of operator log report you want to generate. You can select **Tabular** to view the operator log report in a table or **Graphical** to view the operator log report in a graph.
8. Click **Generate Report**. The operator log report is generated and appears in the display area.

Viewing, Printing, and Saving the Report

You can use the following options in the toolbar on top of the report:

Icon	Click to...
	save the report. By default, the report is saved in Crystal Reports (.rpt) format. You can also save the report in Adobe Acrobat PDF (.pdf), Microsoft Excel (.xls), Microsoft Excel Data Only (.xls), Microsoft Word (.doc), and Rich Text (.rtf) formats.
	print the report.
	toggle the display of report names on the left of the display area.
	view the first page.
	view the previous page.
	view the next page.
	view the last page.
	go to a page number.
	search for text in the report.
	enlarge (zoom in) and reduce (zoom out) the report view.
	close the current view.

Appendix A

Image Stream Combinations for Oncam Grandeye Cameras

For Oncam Grandeye Halocam Cameras

Camera Type	Resolution	Best fps (MAX)(H.264)
FullPanorama	640x208	10
	1024x336	10
HalfPanorama1	640x208	10
	1024x336	10
HalfPanorama2	640x208	10
	1024x336	10
FishEye	1424x1424	5
	1024x1024	8
	2144x1944	3
VGAFishEyeWithPan	640x480	10
Composite1	640x480	10
Composite2	640x480	10
VGAFishEye	640x480	10
	320x240	15

For Oncam Grandeye Evolution Cameras

Camera Type	Resolution	Best fps (MAX)(H.264)
Evolution	1056x960	15
	2144x1944	10
	1448x1360	15
	528x480	15

Device Characteristics of Oncam Grandeye Cameras

Characteristic	Camera Type	Comments
<p>Camera provides variable fps. Example: For highest resolution, 2144x1944, maximum fps a camera can provide is 3. On several occasions, it is seen that fps varies from 1 to 3, and very rarely a camera provides 3 fps.</p>	Halocam	As per Grandeye, fps varies and cannot go beyond the maximum value, 3. This is the design specific behavior of the the camera.
<p>Camera provides variable fps. Example:For highest resolution, 2144x1944, maximum fps a camera can provide is 10. On several occasions, it is seen that fps varies from 6 to 10, and very rarely a camera provides 10 fps.</p>	Evolution	As per Grandeye, fps varies and cannot go beyond the maximum value 10. This is the design specific behavior of the the camera.
<p>Before streaming, the active Camera stream (Resolution) must be set in the Camera Web page. In MAXPRO NVR, if you do not select the active stream, video is not displayed.</p>	Evolution	As per Grandeye this is the design specific behavior of the the camera.

MAXPRO Mobile App

This section describes how to connect to a MAXPRO® NVR using the MAXPRO® Mobile app on an Apple® or Android™ mobile device. It also covers how to use the MAXPRO Mobile app for remote live video viewing, searching for recorded video, taking snapshots for forensic purposes, and other daily tasks.

MAXPRO Mobile app Installation

The MAXPRO Mobile app is compatible with all MAXPRO NVRs.

Minimum Requirements

The MAXPRO Mobile app minimum requirements are:

- Apple iPad, iPhone, and iPod touch running IOS 3.2 and later
- Android phones and tablets running v2.2 and later
- Internet connection to the MAXPRO NVR
- Wifi or 3G connection for the Apple or Android device

Installing the MAXPRO Mobile app

To install the MAXPRO Mobile app on your mobile device

1. Download the app by searching for MAXPRO Mobile from the appropriate mobile app store, either the Apple App Store or the Google Play Store (<https://play.google.com/>).

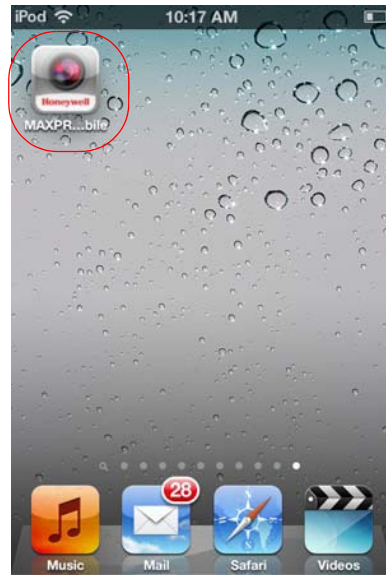
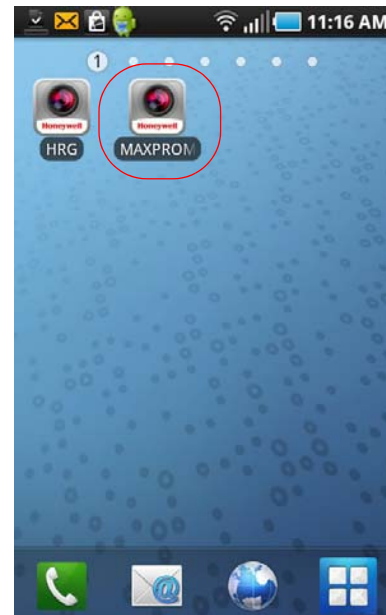
Apple mobile device




Android mobile device



- When the application is successfully installed, the Honeywell MAXPRO Mobile icon appears on the device.

Apple mobile device

Android mobile device


MAXPRO NVR Update

Note If your MAXPRO NVR has the MAXPRO NVR Mobile server software pre-installed, the desktop icon is on your desktop (). Please proceed to **Typical Network Configuration and Settings**, on **page 195**.

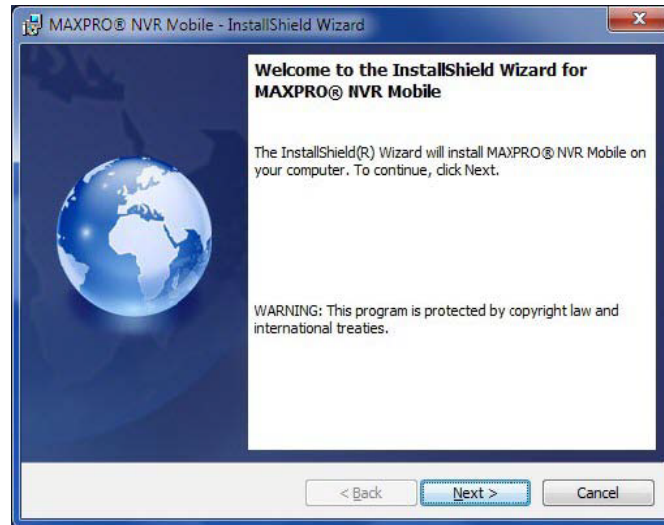
If the MAXPRO NVR Mobile server software is not pre-installed (you do not have the desktop icon), please follow the instructions in **Installing the MAXPRO NVR Mobile Software Update on the NVR**.

Installing the MAXPRO NVR Mobile Software Update on the NVR

To install the most current MAXPRO NVR Mobile software on the NVR

- Check for the latest software update from the Download Center at <https://www.hascim.com/cim/FilesAndDrivers/NVR.aspx>. Download the most current file to your NVR.

2. On the MAXPRO NVR, double-click the *MAXPRO NVR Mobile Setup* file and then follow the InstallShield Wizard.



3. Accept the terms in the license agreement and then click **Next**.

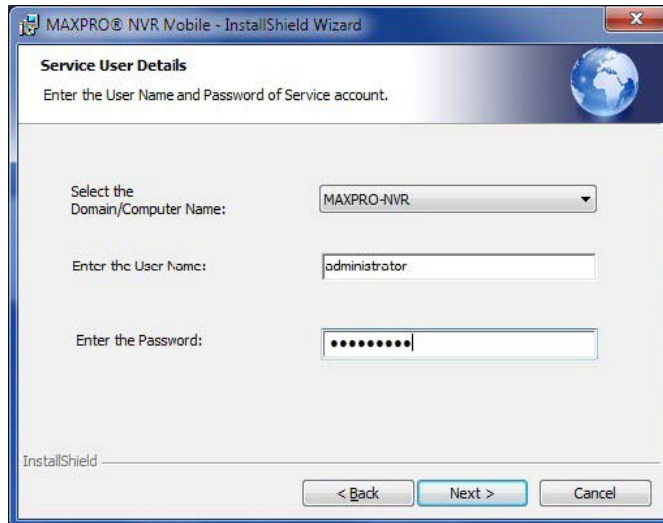


4. On the **Service User Details** dialog, set up the service account as follows:

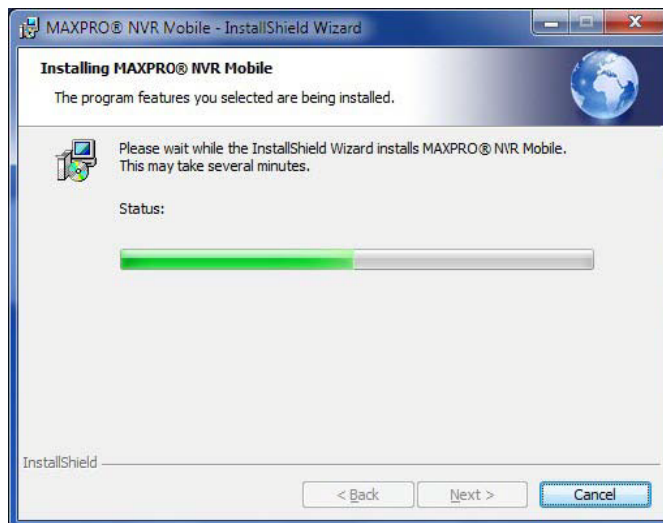
Note The values listed in **step a** to **step c** below are the factory default values. These instructions assume that the default values have not been previously user-modified. For non-default values, please use the Windows User name and Password.

- a. In the **Domain/Computer Name** drop-down list, select **MAXPRO-NVR**.
- b. In the **User Name** field, type in **administrator**.
- c. In the **Password** field, type in **Password1** (case sensitive).

d. Click **Next**.



5. Follow the InstallShield Wizard to complete the application setup.



6. When the InstallShield Wizard Completed window appears, click **Finish**.



Typical Network Configuration and Settings

Figure a-1 shows a typical system setup. In applications where the mobile device connects to the MAXPRO NVR through a public router, you must configure port forwarding on the router as shown in **Table 1-1**. Please contact your Network Administrator for assistance.

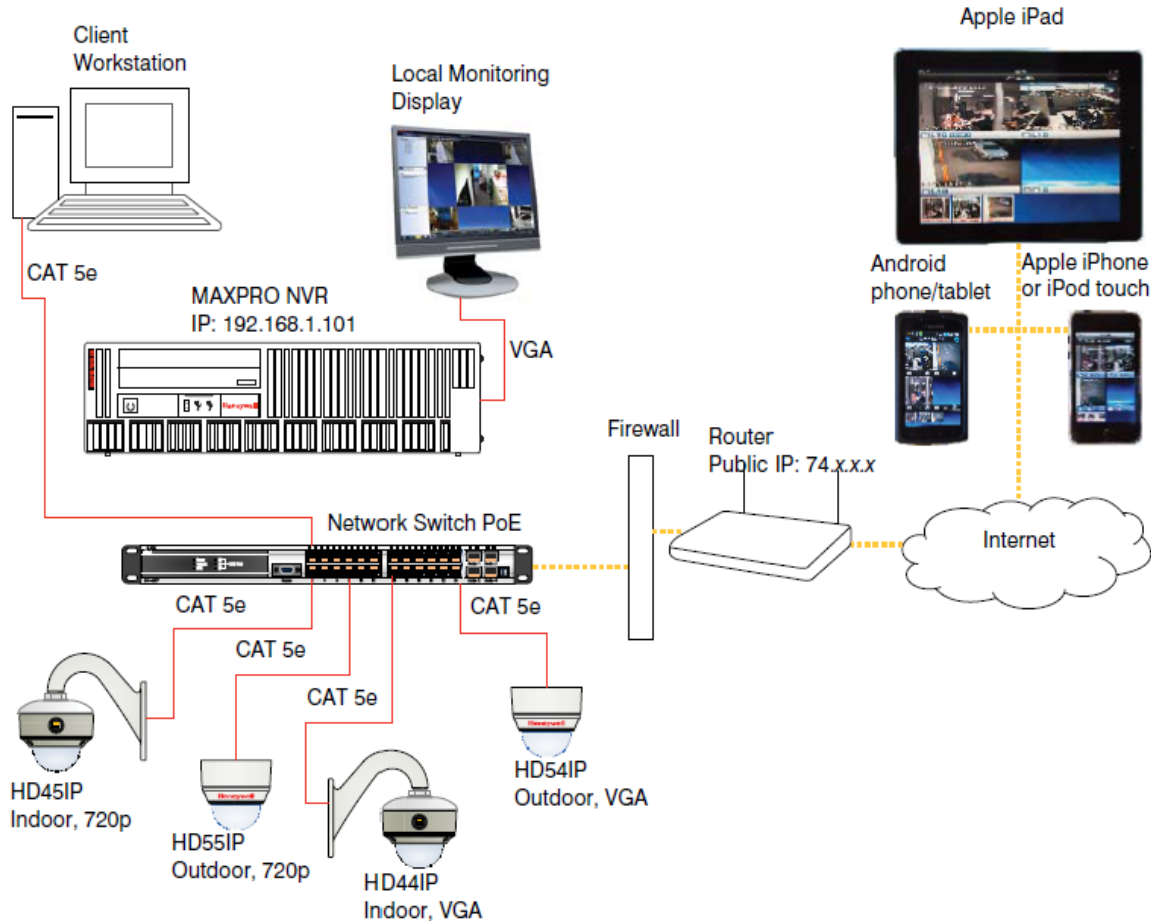


Figure a-1 System Diagram

Note Up to three mobile devices can be used simultaneously to view video from the NVR.


Note The default port for the Mobile app on MAXPRO NVR is 80. See **Changing Default Port 80 for the MAXPRO Mobile app and MAXPRO Web Client** for instructions on how to change the port number if Port 80 is already used or if there is more than one MAXPRO NVR behind the router in the network.

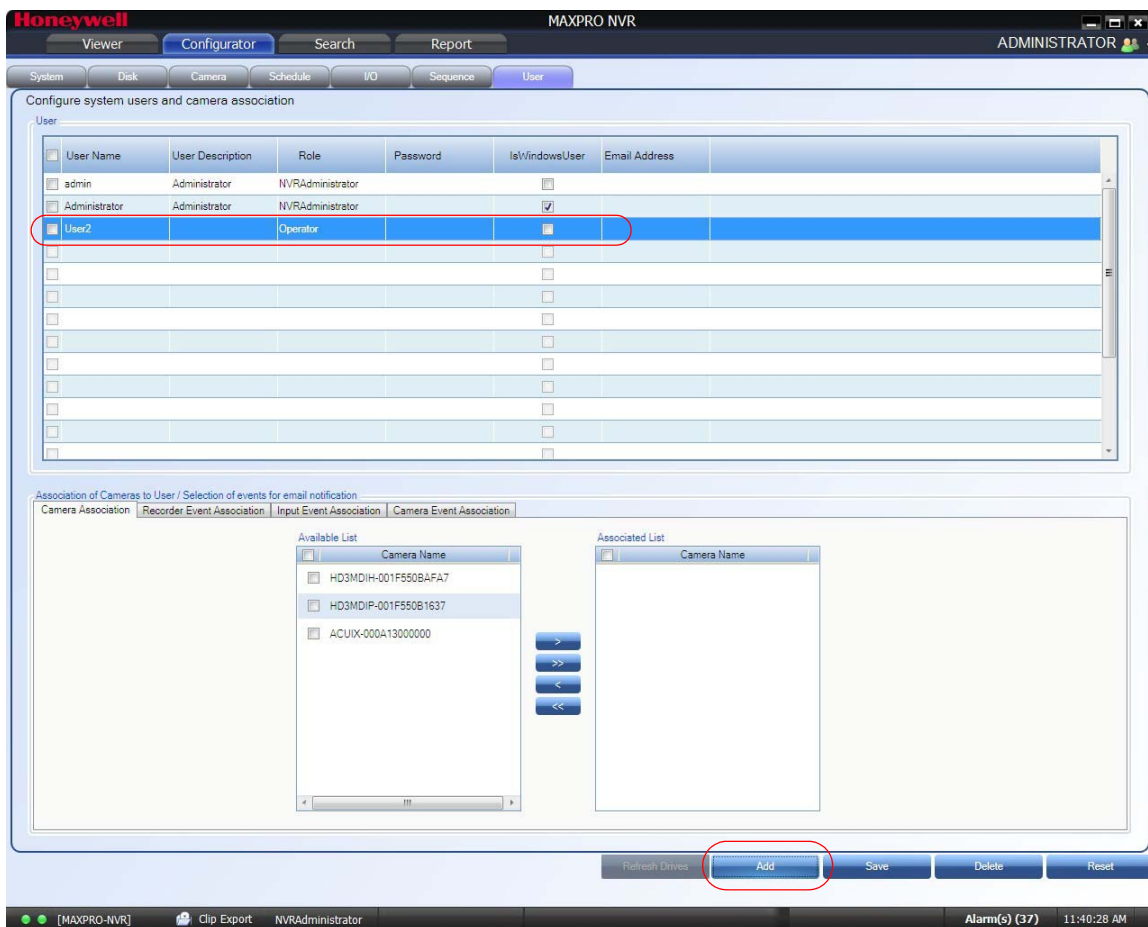
Table 1-1 Port Forwarding

Public Router IP Address	External Port	MAXPRO NVR IP Address	Internal Port
74.xxx	80	192.168.1.101	80

Creating Users for the MAXPRO Mobile app

The MAXPRO Mobile app uses a non-Windows authentication. You need to create non-Windows users to allow access from authorized mobile device users. To add a user:

1. Launch MAXPRO NVR (double-click the MAXPRO NVR icon  on your desktop).
2. On the **Configurator** tab, select the **User** tab, then click **Add** at the bottom.

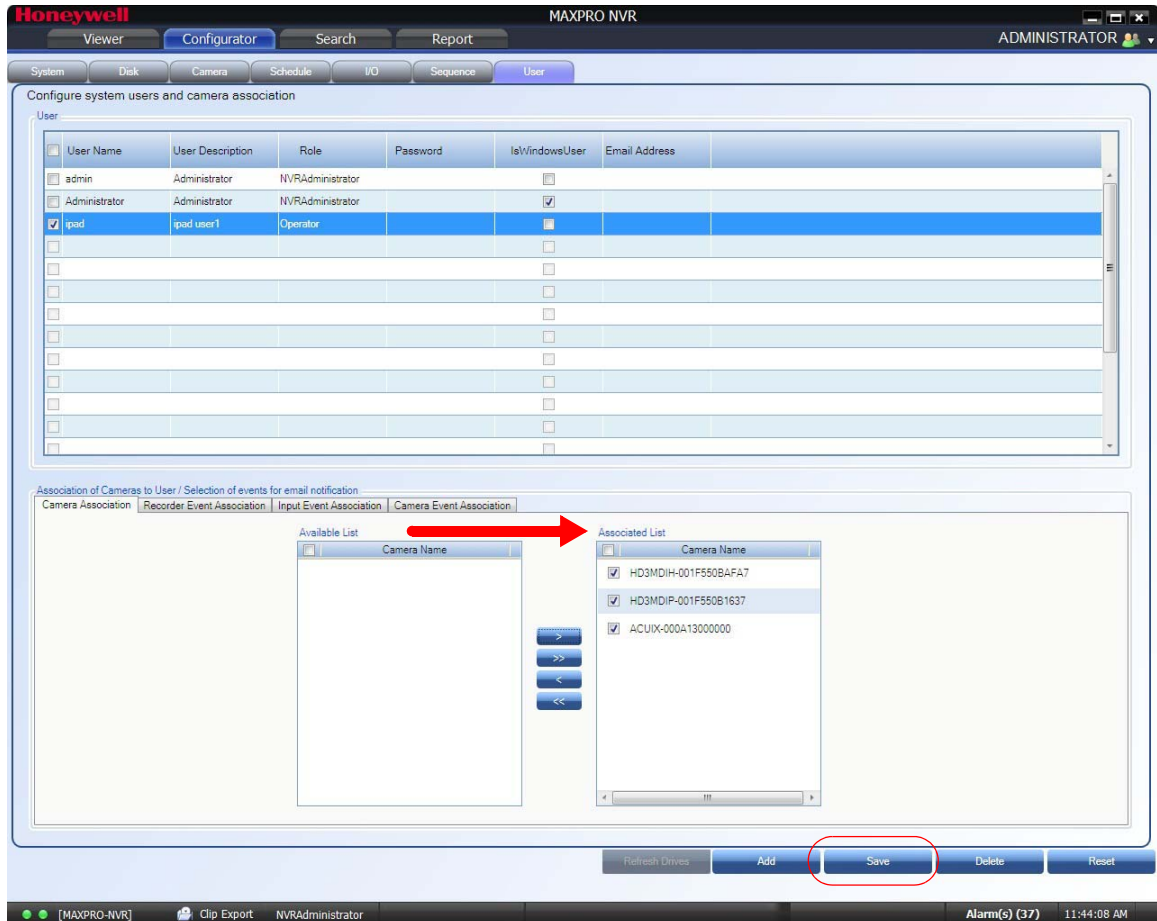


- Double-click **User2** in the **User Name** column. Type in a name for the MAXPRO Mobile user.
- This is the name that will be used to log on to the mobile device to connect to the MAXPRO NVR.
- (Optional) Double-click in the **User Description** column to add an appropriate description (for example, Mobile app operator).
- In the **Role** drop-down list, select the appropriate user permission (for example, Operator, as shown above).

Selecting the Cameras to be Remotely Viewed

3. Provide access for the MAXPRO Mobile user to selected cameras, as required.

- Select cameras in the **Available List**, then click the right arrow to move them to the **Associated List**.
- Click **Save**.



Adding the MAXPRO NVR to the MAXPRO Mobile app

In the MAXPRO Mobile app, you must add the MAXPRO NVR so that you can view video.

1. Launch MAXPRO Mobile by tapping  on your mobile device.

2. Before you log on:

Apple mobile device

Tap **Setup** in the top left hand corner.



Android mobile device

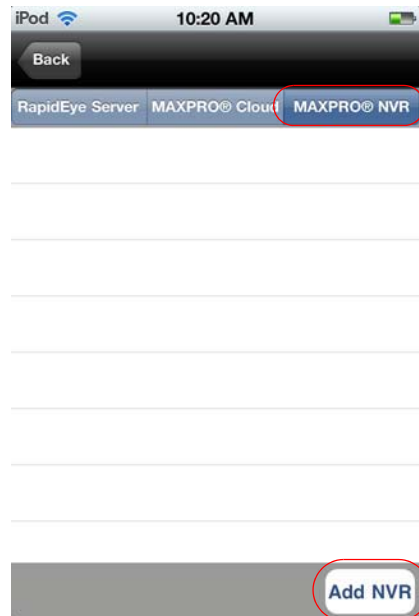
Tap the **cog wheel** in the top left hand corner.



3. Add an NVR:

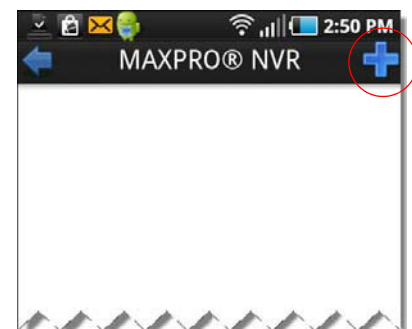
Apple mobile device

Tap the **MAXPRO® NVR** tab, then click **Add NVR**.



Android mobile device

Tap **MAXPRO® NVR**, then on the next screen, tap the **Plus sign**.



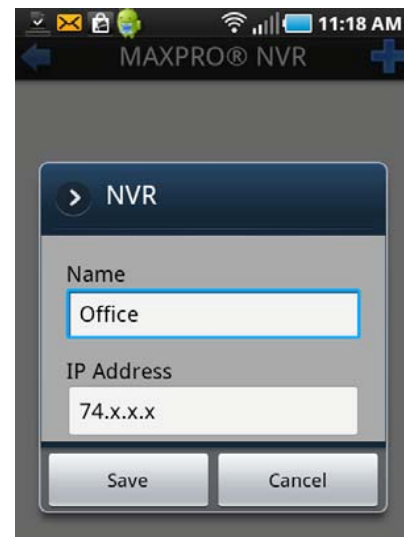
4. Set up the MAXPRO NVR.
 - In the **Name** field, enter the name of the unit to which you wish to connect.
 - In the **IP Address** field, type the address of the unit.
 - Click **Save**.

Apple mobile device

Android mobile device

Tap **Setup** in the top left hand corner.

Tap the **cog wheel** in the top left hand corner.



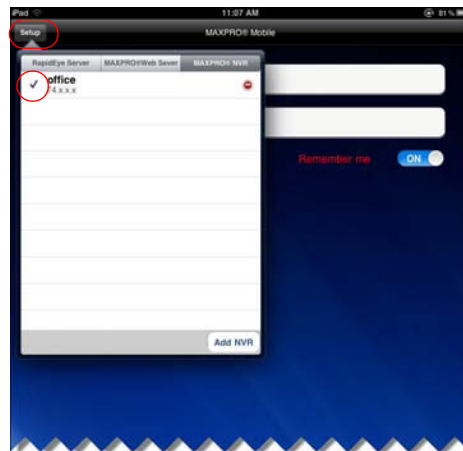
5. The name and IP address of the NVR populates. Tap the name to enable the NVR (check mark displays).
6. To return to the log on dialog:

Apple mobile device

Android mobile device

Tap **Setup**.

Tap the **Back arrow**.



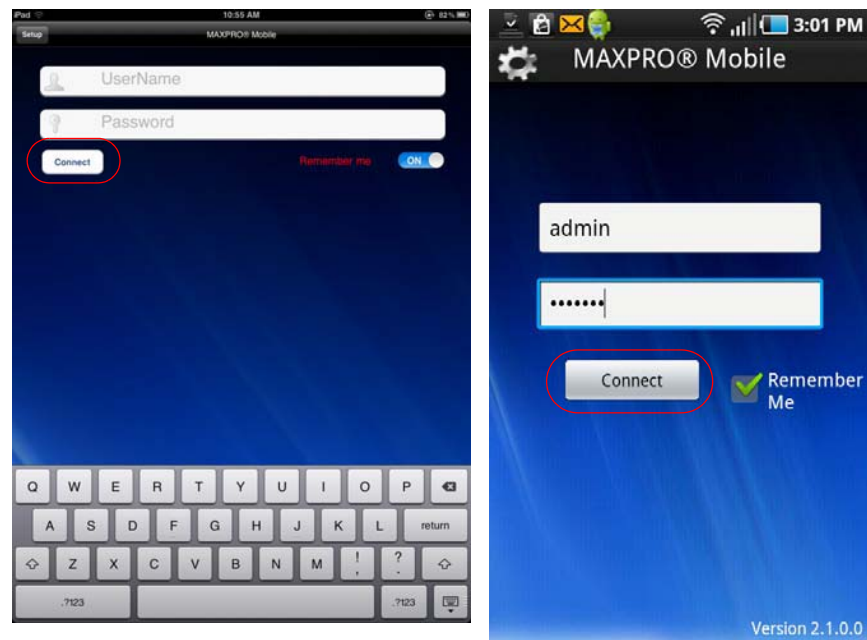
Note You must set the IP Address field to <IP:PORT> in the **Add NVR** option if you decide to open a different port on the router for the MAXPRO Mobile server. For more information, see [Changing Default Port 80 for the MAXPRO Mobile app and MAXPRO Web Client](#).

7. Log on:

- In the **UserName** field enter the name that was created for the mobile device user in MAXPRO NVR (see [Creating Users for the MAXPRO Mobile app on page 196](#)).
- In the **Password** field enter the appropriate password.
- Tap **Done**.
- Tap **Connect**.

Apple mobile device

Android mobile device



The live view displays (see [Using the MAXPRO Mobile app](#)).

Using the MAXPRO Mobile app

The MAXPRO® Mobile app allows you to connect to a MAXPRO NVR from a remote location. Use the app to perform common daily tasks such as:

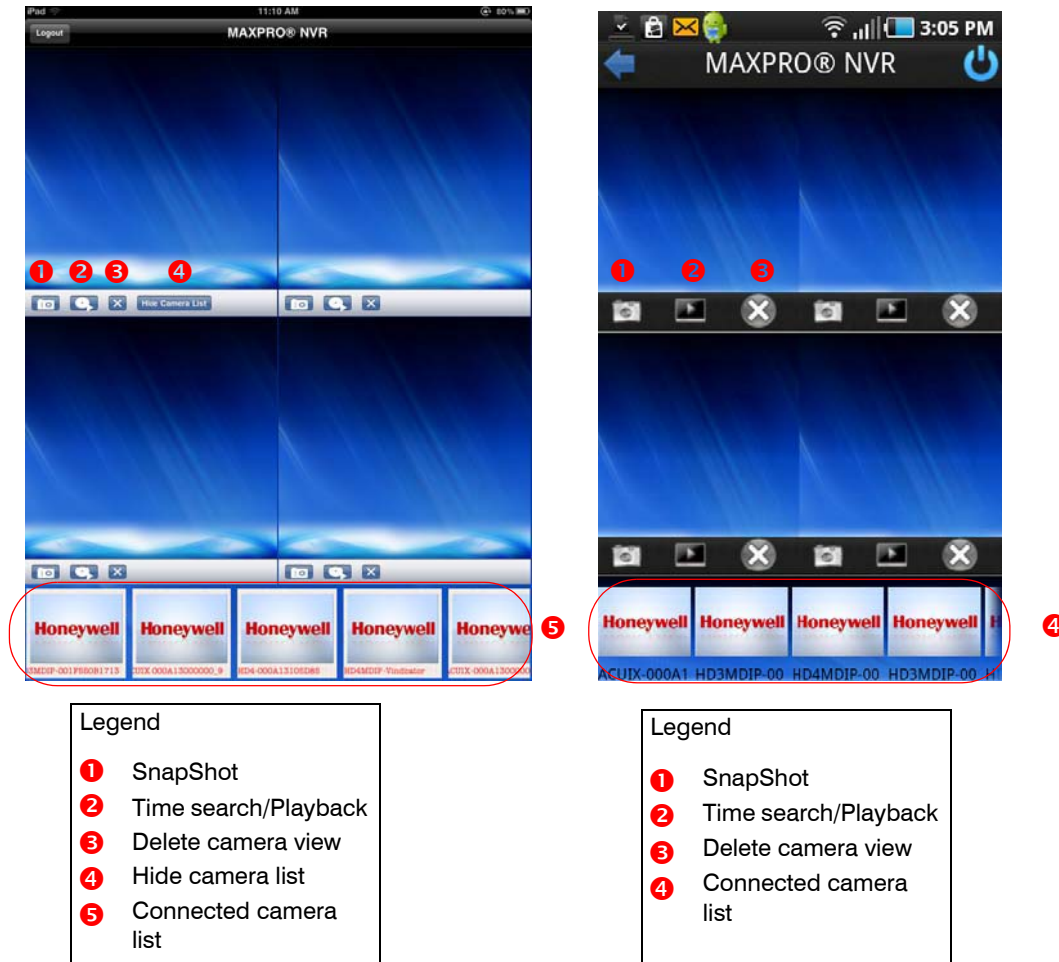
- Live video viewing
- Zooming in for full screen viewing
- Playback or searching for video clips by date and time
- Taking a snapshot of a recorded frame

Live Video Viewing

The MAXPRO® Mobile app features a single camera or multiple camera view. When you **Connect**, the live view screen displays in the default quad view as shown below. It may take a few seconds for the cameras to be discovered. The cameras that were associated with the mobile app user (see [Selecting the Cameras to be Remotely Viewed](#)) are listed at the bottom in the Camera List panel.

Apple mobile device

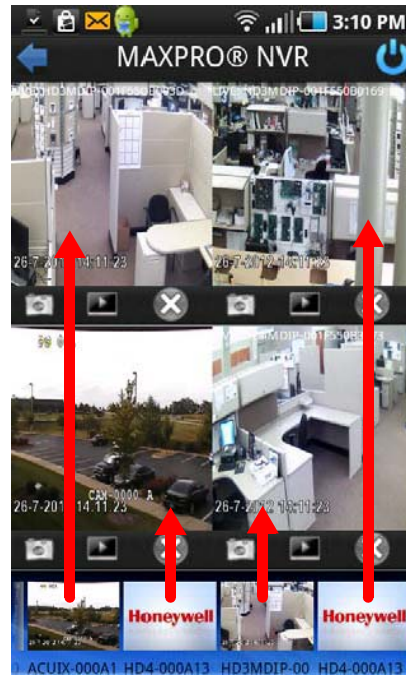
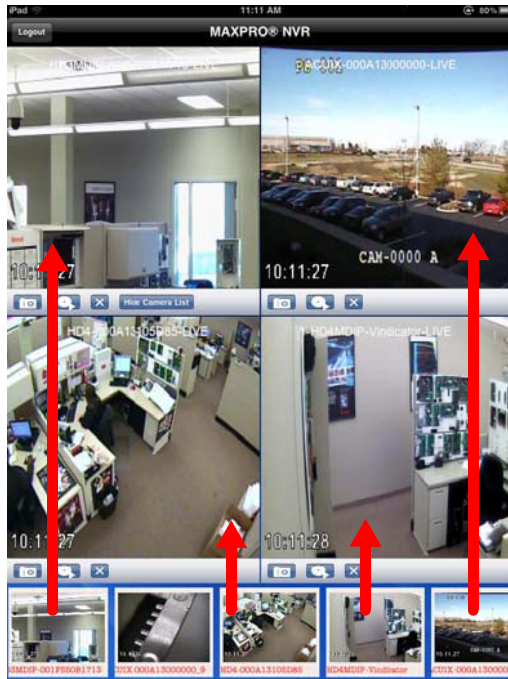
Android mobile device



To view live video, tap and drag a camera box in the Camera List to a viewing panel in the quad view, as shown below.

Apple mobile device

Android mobile device



Viewing Live Video in Full Screen Mode

Double-tap on one panel in the quad view to view the video from that channel in full screen mode. To return to quad view, double-tap on the panel again.

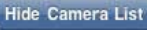
Apple mobile device



Android mobile device



Hiding the Camera List

To hide the camera thumbnails in the Camera List at the bottom, tap . The icon turns to **Show Camera List**. Tap it again to show the camera thumbnails.

Apple mobile device



Android mobile device







Note This feature is not currently available on an Android mobile device.

Removing a Camera from Live View


To remove video from one channel on the viewing display, tap  underneath that panel.

Searching for Recorded Video and Playback

To search for recorded video from one channel on the video display:

Task	Apple mobile device	Android mobile device
1. To set the search parameters:	<p>Tap  underneath that panel. The date/time wheel displays.</p> 	<p>Tap  underneath that panel. The date/time keypad displays.</p> 
2. To select a specific date:	<p>Swipe the date wheel downwards</p>	<p>Tap the + or - under the date, OR Tap the number and enter the desired date.</p>
3. To select a specific time:	<p>Swipe the hour, minute, and AM/PM wheels downwards.</p>	<p>Tap the + or - under the time, OR Tap the number and enter the desired time.</p>
4. To play back the video starting from the date and time selected:	<p>a. Tap  under the wheel. b. Tap  to turn off the date/time wheel.</p>	<p>Tap Search.</p>

Taking a SnapShot

To take a snapshot of the current video frame in a panel, tap  under that panel. This feature is available in both 2x2 mode and full screen mode.

Emailing a SnapShot

The snapshot image can be sent by email:

Apple mobile device	Android mobile device
1. Tap Photos Album to open the photo library.	Open file explorer and browse to the path /mnt/sdcard where the snapshot images are stored.
2. Select the desired image.	Select the desired image.
3. a. Tap the forward icon. b. Tap Email Photo .	a. Tap the screen to open the Menu . b. Tap Share and then tap Email .

VMD Settings and Motion-based Recording Configuration

VMD setup consists of:

- Event-based recording configuration on MAXPRO NVRs.
- Server VMD (Smart VMD) settings on all video devices supported in MAXPRO NVR.
- Built-in VMD (Camera based VMD) settings on Honeywell IP cameras.

Overview of MAXPRO NVR Recording Options

Each IP camera configured in the NVR can be set for Continuous (background) recording, event-based recording, or both.

When using event-based recording, Honeywell recommends that you:

- Set up recording on events at a higher frame rate
- Set up continuous (background) recording at a lower frame rate

Continuous (background) recording at a lower frame rate and event-based recording with boosted higher frame rate ensure that:

- Video recording is not missed in the event that the motion is not sufficient to trigger a VMD event on the camera; that is, the motion does not meet the configured VMD threshold on the camera.
- Video records longer than pre and post event recording with the lower frame rate; that is, Continuous (background) recorded video provides better forensics.

MAXPRO NVR supports recording at different frame rates for each camera using a single live stream from the camera and recording quality settings. The NVR Recording Quality Setting options for Continuous (background) and Event recording are:

- Same as Live
- Every IFrame
- Every Second IFrame
- Every Third IFrame.

Example:

For a camera configured in the NVR with these settings:

- FPS = 5
- GOP = 5
- Record Quality Setting: Background/Continuous Recording = Every IFrame
- Event Based Recording = Same as Live

The result is a Continuous (background) record rate of 1 FPS and a boosted event-based record rate of 5 FPS.

Note

- A combination of continuous and event-based recording from a camera can be achieved using the relationship between Frames Per Second (FPS) and Group Of Pictures (GOP).
- FPS is a measure of the images every second from the camera, while GOP determines how frames are sequenced.
- Every GOP starts with an I-frame (full image) and is followed by smaller images which are relative to the images preceding it. So, for a GOP of 5 there will be one I-frame for every 5 frames.

The following figure shows an example of three seconds of video at 5 FPS and 5 GOP.



Figure a-2 I-frame Example

The NVR record Quality Settings for Continuous (background) and Event recording can be used to achieve different level of FPS by selecting one of the following options.

- **Same as Live:** Every frame is recorded (5 FPS in the example)
- **Every I-frame:** Every I-frame is recorded (1 FPS in the example)
- **Every Second Iframe:** Every second I-frame is recorded (1 frame every 2 seconds in the example)
- **Every Third Iframe:** Every third I-frame is recorded (1 frame every 3 seconds in the example)

Note: For more detailed information on the relationship between FPS and GOP and example settings to achieve different frame rates, refer to the [MAXPRO NVR Operators Guide](#).

Configuring the Pre and Post Event Recording Settings

Note: See the [Event Recording Settings](#) for more information on configuring the pre and post event recording settings.

Configuring Camera Settings for VMD-Based Recording

To configure camera settings for VMD-based recording

1. Click the **Configurator** tab and then the **Camera** tab to open the **Camera configuration** page.

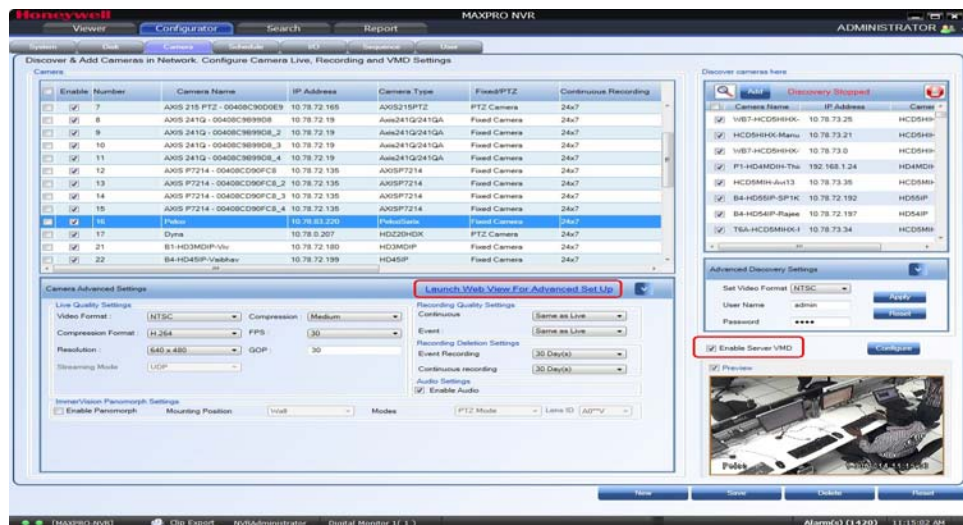


Figure a-3 Camera configuration page

- For built-in (Camera-based) VMD configuration, open the camera web page by clicking **Launch Web View for Advanced Setup**. See [Configuring Built-in VMD \(Camera based VMD\) on Honeywell IP Cameras](#) for more information.
- For Server-based VMD (Smart VMD) configuration, select the **Enable Server VMD** check box and click **Configure**. See [Server VMD \(Smart VMD\)](#) for more information.

Note: Built-in (Camera-based) VMD support in NVR is based on the type of device integration and may not be supported for all devices. Please refer to the MAXPRO NVR compatibility list on HOTA website (<http://www.security.honeywell.com/hota/>) for details. Server VMD (Smart VMD) is supported for all video devices supported by NVR.

2. Select a camera to configure the following items in the Camera pane:
 - **Continuous Recording** (default=24x7): In the **Continuous Recording** drop-down list, select the appropriate value. Honeywell recommends 24x7 for continuous recording. There are several standard options for scheduled recording. You can define additional schedules in the **Schedules** tab.
 - **Event Based Recording** (default=NONE): In the **Event based Recording** drop-down list, select the appropriate value. Select a setting other than NONE to activate event-based recording. The typical setting would be 24x7. There are also several standard options for scheduled recording. You can define additional schedules in the **Schedules** tab.

Server VMD (Smart VMD)

Note: See [Server VMD \(Smart VMD\)](#) for more information.

Configuring Built-in VMD (Camera based VMD) on Honeywell IP Cameras

Use the Camera Web Client to configure VMD on the camera itself.

For motion detection, an Administrator can enable and configure up to five zones within a scene. The enabled and configured zones are monitored for motion.

1. Click the **Video Analytics** tab.
2. Click the **Region** drop-down list in the **Video Motion Detection** pane, then select a region from the five available.
3. Click the **VMD** drop-down arrow, and then select **Enable**.
4. The regions appear as colored rectangles in their default positions. Click and drag the box to resize and place it over the camera image. This box is the region of interest.
5. Click **Motion Threshold** and then select the sensitivity level:
 - Low (30%) (most sensitive)
 - Medium (50%)
 - High (80%) (least sensitive).

Note: It is recommended that you use the medium sensitivity at 50% as the initial setting. It can be further adjusted as explained in [Fine Tuning the Video Motion Detection](#).

6. Click **Apply**.

Note

- To ensure that the VMD settings have been applied, click another tab, and then back to the **Video Settings** tab. Check the VMD settings for the changes you made.
 - In the unlikely event that the VMD settings are not applied, please try logging out of the software and logging back in. Then repeat step 1 through step 5 above.
-

Disabling Motion Detection

To disable a zone, click the **VMD** drop-down arrow and then select **Disable**.

Fine Tuning the Video Motion Detection

For optimum results, adjust the VMD configuration to match the camera field of view, regions of interest and other factors. The recommended configuration procedure is:

1. Identify areas in the image where motion detection alarms should be triggered. In some applications, motion anywhere in the image needs to be reported. In other applications, you may wish to monitor specific areas such as doors, parking lot entrances, or other areas of interest.
2. Select one of the five available regions for each area of interest and draw the region-of-interest box for that region to fully cover the area of interest.

Note: The camera only measures motion inside the drawn box. For example, a person or vehicle moving along the boundary of the box may or may not trigger an alarm, because their motion is only partially evaluated. Therefore, it is important to adjust the region-of-interest boxes to fully cover the required areas of interest.

3. Test your initial configuration setup by observing VMD performance to ensure that relevant scene motion triggers alarms and to ensure that the camera is not reporting false alarms (such as VMD alarms triggered due to image noise). In cameras with a wide field of view, or when activity happens far away from the camera, people and vehicles may appear rather small in the image. In such cases, it may not be possible to apply a single area of interest to the whole field of view to reliably detect motion. In such cases, Honeywell recommends covering the camera view with multiple, smaller region-of-interest boxes, concentrating on specific areas where motion alarms are important, such as entrances, restricted access areas, and so on.
 4. Use the medium sensitivity of 50% as the initial setting. You can adjust this further if required.
-

Note: Observe VMD performance in all expected lighting conditions after the initial configuration is applied. Ensure that relevant scene motion triggers alarms and ensure that the camera is not reporting false alarms (such as VMD alarms triggered due to image noise).

Increasing VMD Sensitivity

If the relevant scene motion does not trigger VMD alarms, try the following adjustments to increase VMD sensitivity.

- Decrease the sensitivity level from 80% to 50%, or from 50% to 30%. This change causes smaller objects to trigger alarms and it requires smaller contrast level to report an alarm. This should be the primary adjustment mechanism.
 - Reduce the size of the region-of-interest box and, if needed, add more regions. Note that this adjustment causes smaller objects to also trigger VMD alarms.
-

Note: After VMD sensitivity is increased, observe the performance in other lighting conditions in case further tuning is required to prevent false alarms.

Decreasing VMD Sensitivity

If VMD alarms are triggered even when there is no motion and no significant changes in the video, try the following adjustments to decrease VMD sensitivity.

- Increase the sensitivity level from 30% to 50%, or from 50% to 80%. This primary adjustment mechanism increases the required contrast level (or amount of noise) required to trigger an alarm. Higher sensitivity levels also require larger amounts of motion to be observed before a VMD alarm is triggered.
- Increase the size of the region-of-interest box. This adjustment prevents smaller objects (or smaller areas of noise) from triggering VMD alarms.

VMD Configuration Examples

The sensitivity level examples below are provided only for illustration. Other factors such as lighting level, contrast, and image noise may affect VMD performance and may require further tuning adjustments as described above.

Normal Field of View

In a normal field of view, with a person walking in front of the camera, the maximum recommended region-of-interest box sizes would be as shown by the red boxes as in the following figure.



Figure a-4 Sensitivity Level Comparison: Normal Field of View

Wide Field of View

In a wide field of view camera, the car shown below would be expected to trigger a VMD alarm if the VMD region-of-interest box is not larger than indicated by the red box.



Figure a-5 Sensitivity Level Comparison: Wide Field of View

Combination Field of View

For cameras with a wide-angle field of view covering a large outdoor scene, people who walk far away from the camera might appear rather small in the image. If motion needs to be detected in the entire field of view, the following region-of-interest box configuration is recommended.

- Three smaller boxes, set to 30% sensitivity, covering the upper portion of the image where people appear small.
- Two larger boxes, set to 50% sensitivity, covering the lower portion of the image where objects appear larger.

The following figure illustrates a typical region-of-interest box configuration in a combination field of view.

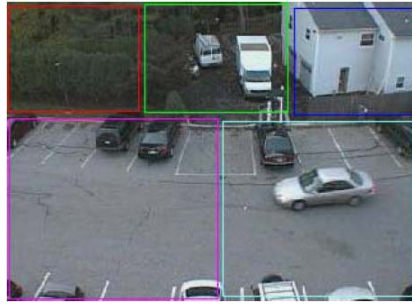


Figure a-6 *Combination Field of View Example*

Metadata and Database Backup

A common batch file is created for for taking the metadata and database backup. The following sections describe the procedures to take metadata and database backup.

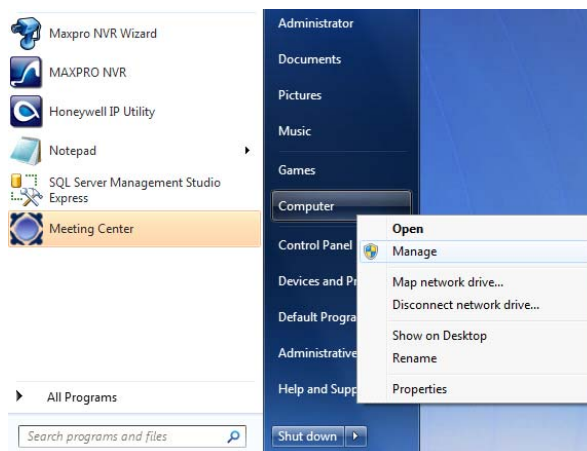
- Note** It is recommended to set up scheduled backups of Metadata and Database with the below steps if they are not already configured on your NVR. The backups can be used to recover a system anytime later in case of a failure or if the OS drive is reimaged with a recovery disk, please contact Technical Support for assistance. Please note the below steps do not include backup or recovery of the Video Storage drives containing the raw video data. Below is the recommended configuration:
- Separate Metadata partition (For example M:) of 50 GB or higher size on the non-OS hard drive. Metadata can be pointed to the separate partition during the install/upgrade.
 - The database backup is recommended to be pointed to the Metadata partition.
 - The Metadata backup is recommended to be pointed to the OS partition.

Backing up the Metadata and Database

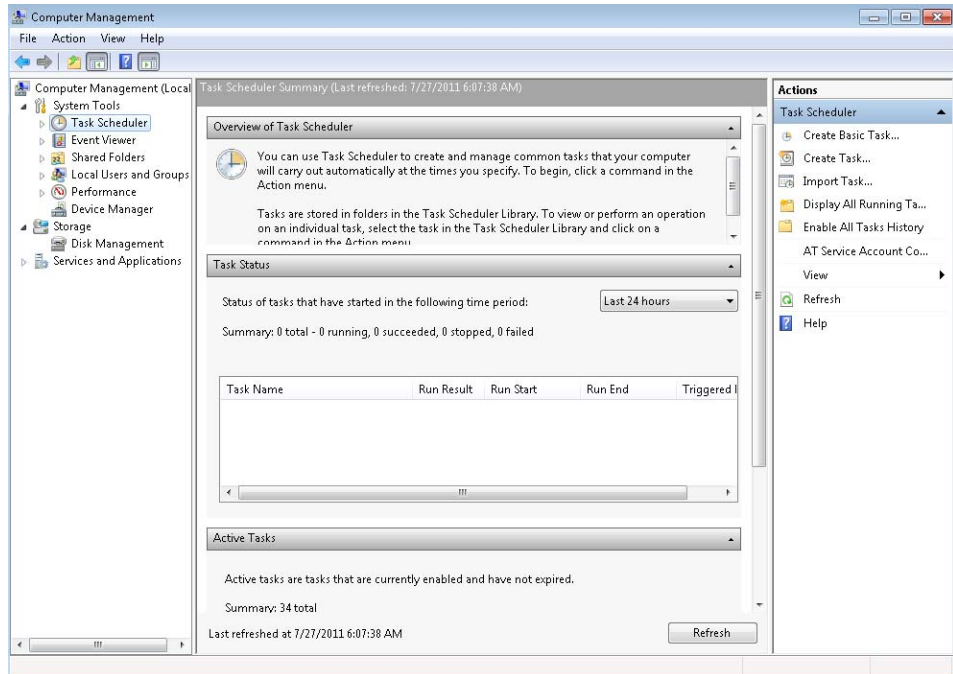
In this scenario, create a scheduled task that helps in taking either a daily backup or a weekly backup or a monthly back up of the metadata based on your requirement.

To backup the metadata and Database

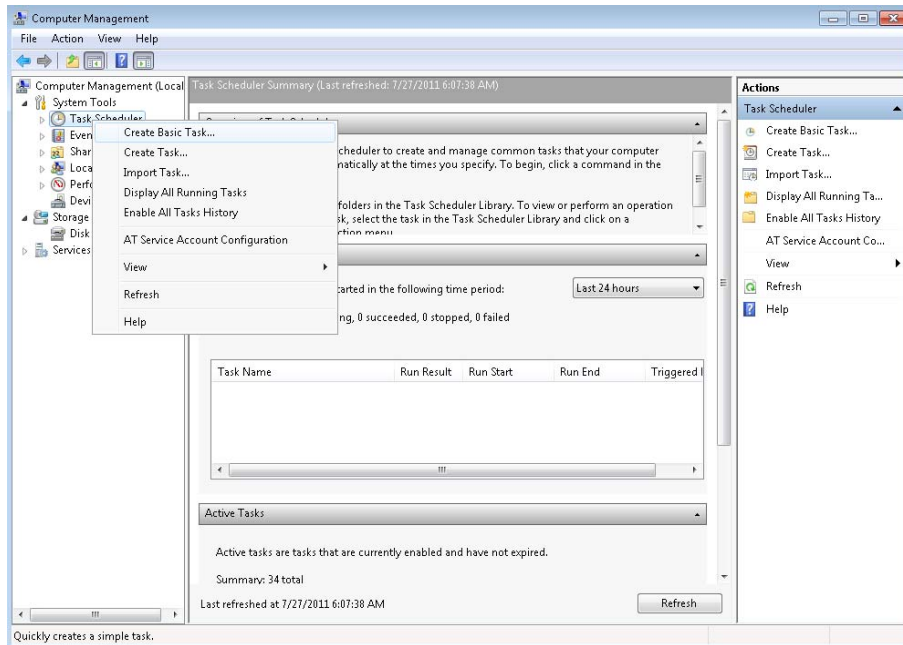
- On the Microsoft Window® 7 computer, right-click the **Computer** option, and click **Manage** in the context menu as shown in the following figure.



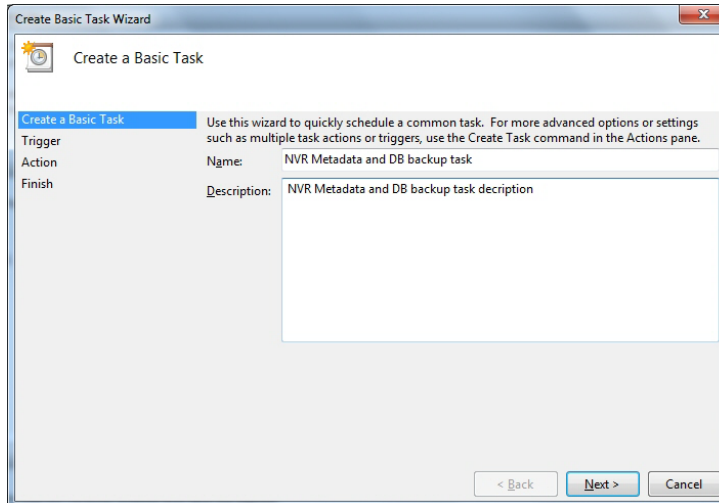
The Computer Management window appears.



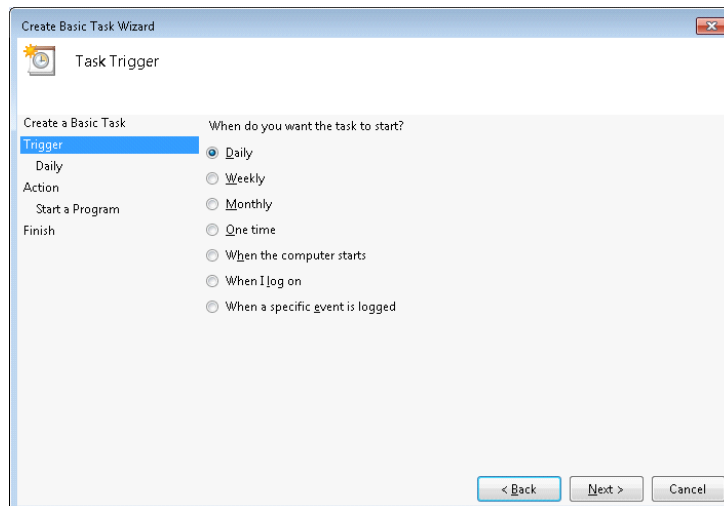
2. Right-click **Task Scheduler** on the left pane, and click **Create Basic Task** in the context menu as shown in the following figure.



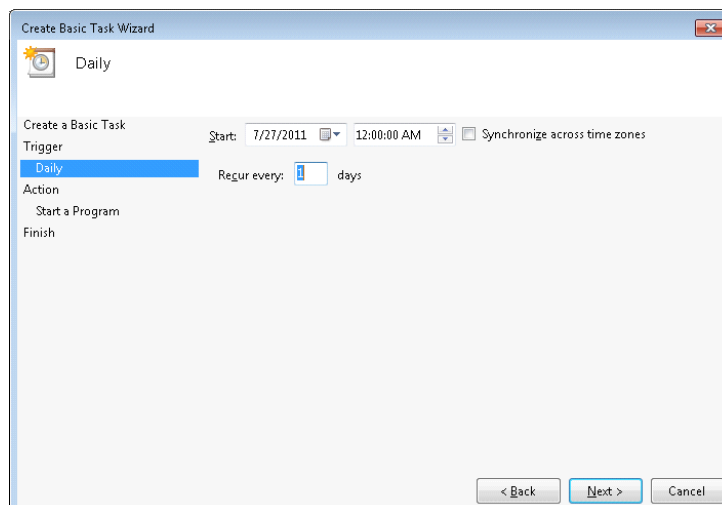
The **Create a Basic Task** dialog box appears as shown in the following figure.



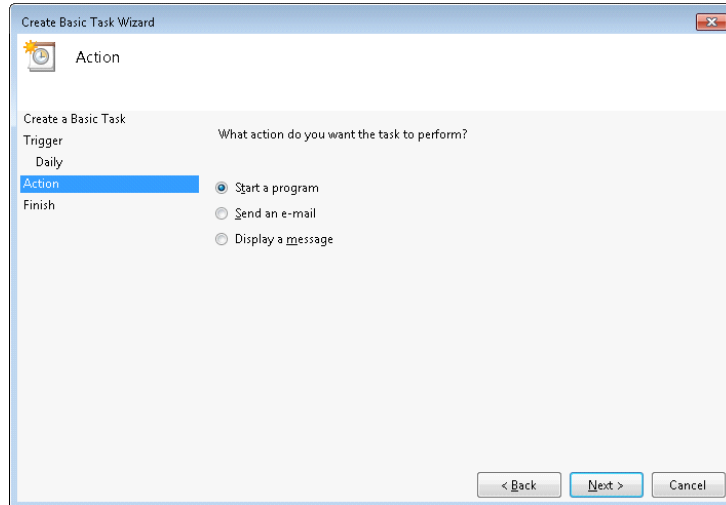
3. Type the **Name** of the task.
4. Type a **Description** for the task.
5. Click **Next**. The **Task Trigger** dialog box appears.



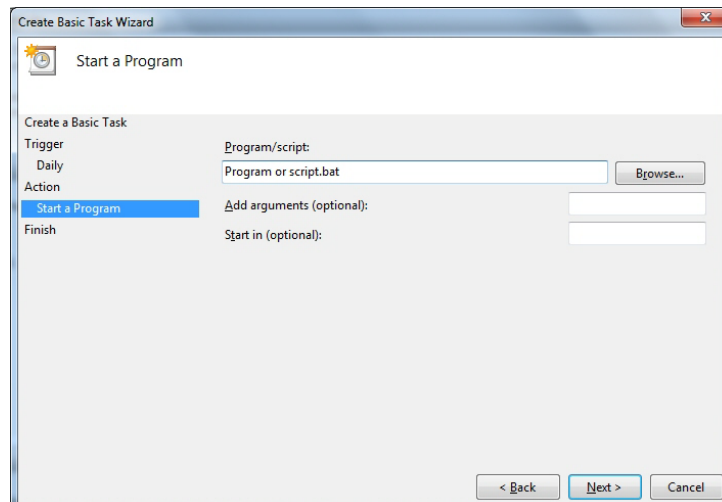
6. Select the **Daily** option. You can select other options based on your requirement.
7. Click **Next**. The **Daily** dialog box appears as shown in the following figure.



8. In the **Start** box, select the start date and time of the task.
9. Select the **Synchronize across time zones** check box to synchronize the time across different time zones.
10. To run the task periodically, type the days in **Recur every**.
11. Click **Next**. The **Action** dialog box appears as shown in the following figure.



12. Select the **Start a Program** option.
13. Click **Next**. The **Start a Program** dialog box appears.



14. Select the **Program/script** that is required to run the task. Click **Browse** and choose the .bat file - **TakeNVRBackup.bat**.
15. Download the **TakeNVRBackup.bat** from the Honeywell Download Center. For your reference the contents of **TakeNVRBackup.bat** file is shown below.

Note: Please save the batch file in the following location:
C:\Install\BackupData\TakeNVRBackup.bat. The following are the two new entries in the .bat file **set BackupDBDrive=M: set BackupMetaDataDrive=C.** By default the Backup Database (BackupDB) is stored in M drive and the Metadata (BackupMetaData) is stored in C drive. It is recommended to choose M and C drive for DB and Metadata backup, but you can choose your own drives (for example: E, D, H drives) to store the backup file.

```
@echo off
echo *****
echoBatch File to take MAXPRONVR Metadata and Database Backup
echo *****
REM *****
REM To Change the Backup Drive please change the value below
set BackupDBDrive=M:
set BackupMetaDataDrive=C:
REM *****
set CURRENT_PATH=%~dp0
set CURRENT_PATH=%~dp0
IF NOT "%PROCESSOR_ARCHITECTURE%" == "x86" GOTO BIT64
set ServerKey="HKLM\SOFTWARE\Honeywell\MaxproNVR\TrinityFramework\Server"
set ClientKey="HKLM\SOFTWARE\Honeywell\MaxproNVR\TrinityFramework\Client"
set
DatabaseKey="HKLM\SOFTWARE\Honeywell\MaxproNVR\TrinityFramework\DatabaseD
etails"
set MetaKey="HKLM\SOFTWARE\Honeywell\MaxproNVR\TrinityFramework"
    GOTO IFEND
:BIT64
set
ServerKey="HKLM\SOFTWARE\Wow6432Node\Honeywell\MaxproNVR\TrinityFramework
\Server"
set
ClientKey="HKLM\SOFTWARE\Wow6432Node\Honeywell\MaxproNVR\TrinityFramework
\Client"
set
DatabaseKey="HKLM\SOFTWARE\Wow6432Node\Honeywell\MaxproNVR\TrinityFrame
work\DatabaseDetails"
set
MetaKey="HKLM\SOFTWARE\Wow6432Node\Honeywell\MaxproNVR\TrinityFramework"
:IFEND
set value="InstallDir"
set value1="INSTANCENAME"
set value2="PCNAME"
set value3="MetadataPath"
for /f "tokens=2* skip=1" %%a in ('reg query %DatabaseKey% /v %value1%') do (
```

```

set INSTANCENAME=%%b
)
call:trimSpaces INSTANCENAME
for /f "tokens=2* skip=1" %%a in ('reg query %DatabaseKey% /v %value2%') do (
    set MACHINENAME=%%b
)
call:trimSpaces MACHINENAME
for /f "tokens=2* skip=1" %%a in ('reg query %ServerKey% /v %value%') do (
    set NVRSERVER=%%b
)
call:trimSpaces NVRSERVER
for /f "tokens=2* skip=1" %%a in ('reg query %MetaKey% /v %value3%') do (
    set MetaPath=%%b
)
call:trimSpaces MetaPath
set METADATADIR=%BackupMetaDataDrive%\Trinity_Backup\REIPEngineMetaData
set
MetadataBackupFolder=%BackupMetaDataDrive%\Trinity_Backup\REIPEngineMetaDat
aBackUp
set DatabaseFolder=%BackupDBDrive%\Trinity_Backup\Database
echo %METADATADIR%
echo %DatabaseFolder%
set backupcmd=xcopy /s /c /d /e /h /i /r /k /y
Date /t >> %CURRENT_PATH%Bkp_Log.txt
time /t >> %CURRENT_PATH%Bkp_Log.txt
echo ***** >>
%CURRENT_PATH%Bkp_Log.txt
echo Backing up MAXPRONVR Metadata Directory...
echo Backing up MAXPRONVR Metadata Directory... >>
%CURRENT_PATH%Bkp_Log.txt
echo ***** >>
%CURRENT_PATH%Bkp_Log.txt
%backupcmd% "%MetaPath%\REIPEngineMetaData" "%METADATADIR%" >>
%CURRENT_PATH%Bkp_Log.txt
%backupcmd% "%MetaPath%\REIPEngineMetaDataBackup"
"%MetadataBackupFolder%" >> %CURRENT_PATH%Bkp_Log.txt
echo ***** >>
%CURRENT_PATH%Bkp_Log.txt
echo Backing up Trinity Database...
echo Backing up Trinity Database... >> %CURRENT_PATH%Bkp_Log.txt
echo ***** >>
%CURRENT_PATH%Bkp_Log.txt
mkdir %DatabaseFolder%
set DATESTAMP=%DATE:~-
4%_DATE:~7,2%_DATE:~4,2%_time:~0,2%_time:~3,2%_time:~6,2%

```

```

echo %DATESTAMP%

set DBfilename=%DatabaseFolder%\Trinity_%DATESTAMP%.bak

SQLCMD.exe -S %MACHINENAME%\%INSTANCENAME% -E -Q "BACKUP DATABASE
[TrinityDatabase] TO DISK = N'%DBfilename%' WITH NOFORMAT, INIT, NAME = N'Trinity-
Full Database Backup', SKIP, NOREWIND, NOUNLOAD, STATS = 10" >>
%CURRENT_PATH%Bkp_Log.txt

echo %DatabaseFolder%

forfiles /p %DatabaseFolder% /s /d -7 /c "cmd /c del @file : date >= 7 days >NUL"

echo ***** >>
%CURRENT_PATH%Bkp_Log.txt

echo Backup Complete - MAXPRONVR Metadata and Database Backup is created
successfully.

echo Backup Complete - MAXPRONVR Metadata and Database Backup is created
successfully. >> %CURRENT_PATH%Bkp_Log.txt

echo ***** >>
%CURRENT_PATH%Bkp_Log.txt

EXIT

:trimSpaces varref -- trims spaces around string variable
::          -- varref [in,out] - variable to be trimmed
call call:trimSpaces2 %~1 %%%~1%%

EXIT /b

:trimSpaces2 retval string -- trims spaces around string and assigns result to variable
::          -- retvar [out] variable name to store the result in
::          -- string [in] string to trim, must not be in quotes
for /f "tokens=1*" %%A in ("%~1") do set "%%A=%%B"

EXIT /b

REM *****

```

Note: To change the Backup Drive, please change the value **set BackupDBDrive=D:**.

16. Click **Next** after you have selected the above batch file. The **Summary** dialog box appears.
17. Verify the information, and click **Finish**.

Appendix B

Changing Default Port 80 for the MAXPRO Mobile app and MAXPRO Web Client

Changing the default Port 80 for the MAXPRO Mobile app/ MAXPRO Web Client is a three step process:

1. Changing port 80 on the MAXPRO NVR.
2. Enabling the new port number in the NVR Windows firewall.
3. Using the changed port in the MAXPRO Mobile app and MAXPRO Web Client.

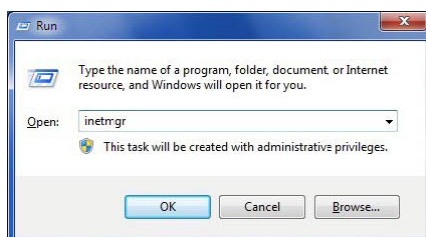
Note: MAXPRO NVR Web Client and MAXPRO Mobile app and MAXPRO Web Client share a common port. Different ports cannot be assigned to the Web Client and Mobile app.

Step 1: Changing the Default Port 80 on the MAXPRO NVR

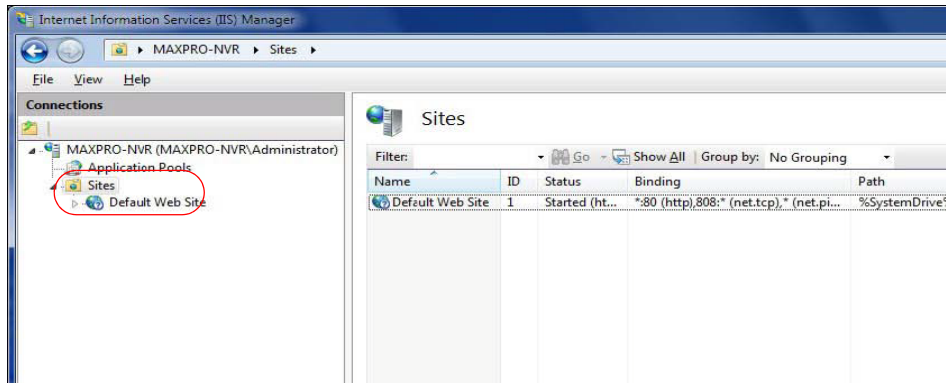
By default, Port 80 is configured for the MAXPRO Mobile app and MAXPRO Web Client to connect to the NVR. If you need to modify the default port, use the following procedure.

Note If you require further assistance, please contact your Network Administrator.

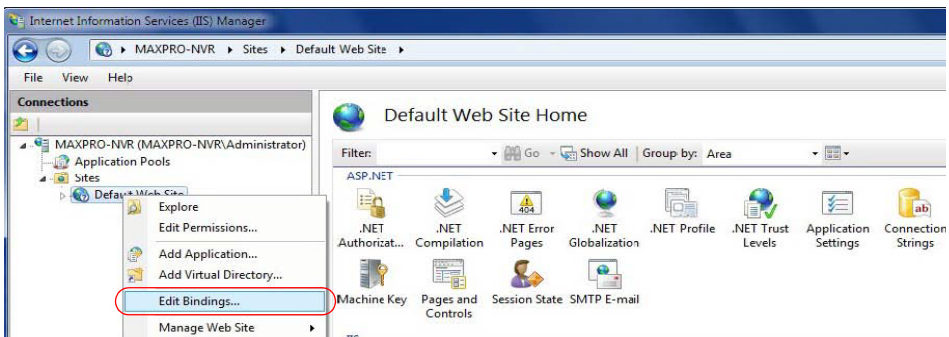
1. From the Windows **Start** menu, select **Run**. In the **Open** field, enter **inetmgr**, then click **OK**.



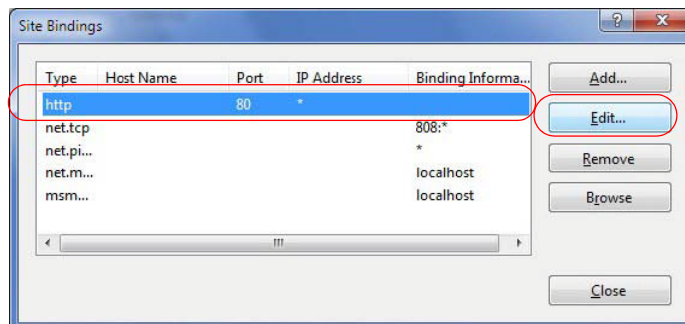
2. In the **Connections** panel, expand **Sites** until you see **Default Web Site**.



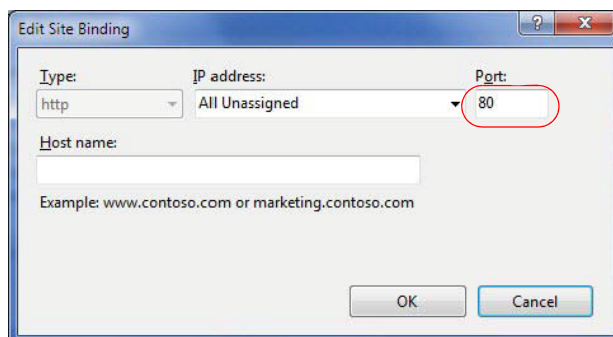
3. Right-click **Default Web Site**, then select **Edit Bindings**



4. On the Site Bindings dialog, highlight **Port 80**, then click **Edit**



5. On the **Edit Site Binding** dialog, change default http port number 80 as required, then click **OK**.



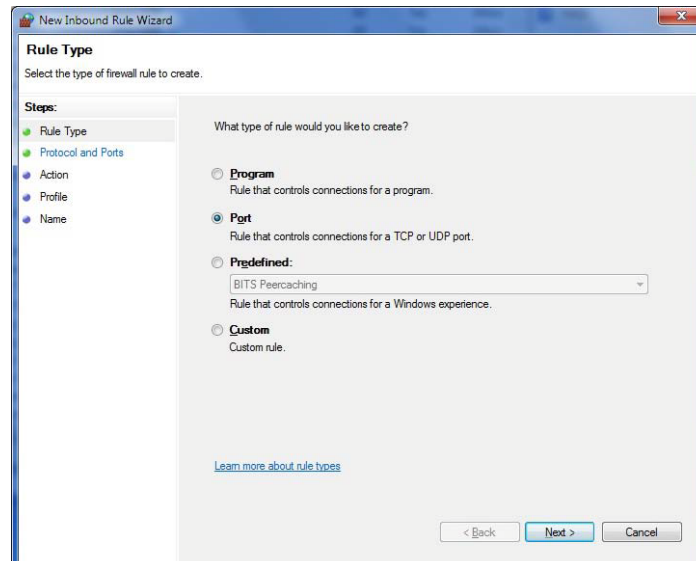
Note: Use only unreserved port numbers (1024 to 49151). To avoid port conflict, do not use port numbers 10000, 20007, 20009, 20010, 20081, and 26026 as they are already reserved for other use.

Step 2: Configuring the Firewall

Configuring the firewall consists of setting inbound and outbound firewall rules for the MAXPRO Mobile app port.

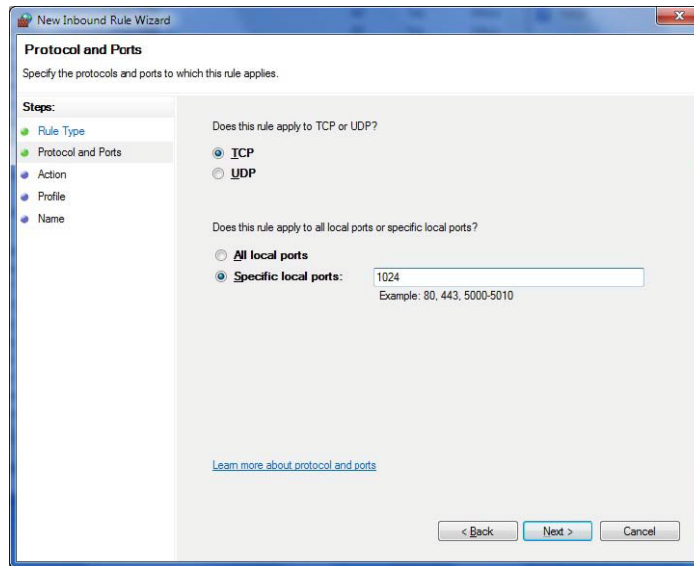
Setting Up Inbound Firewall Rules

1. In Windows, navigate to **Start > Control Panel > System and Security > Windows Firewall > Advanced settings > Inbound Rules**. Select **New Rule ...**
2. The **Rule Type** screen appears. Select the **Port** radio button and then click **Next**.

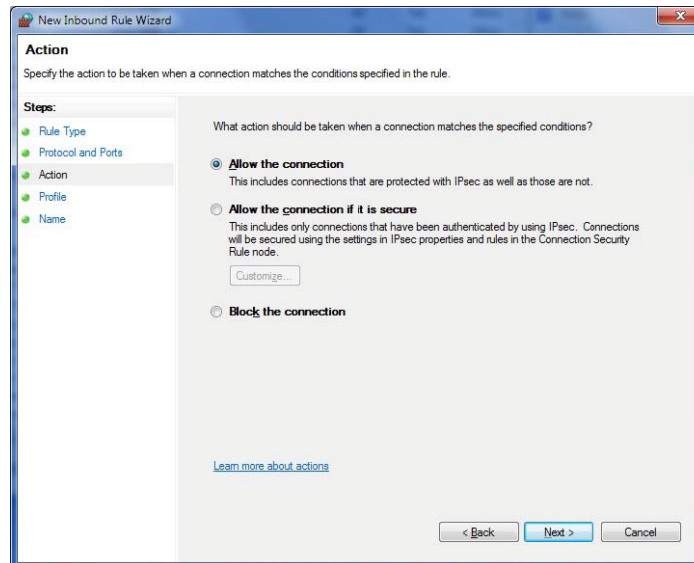


3. The Protocol and Ports screen appears.

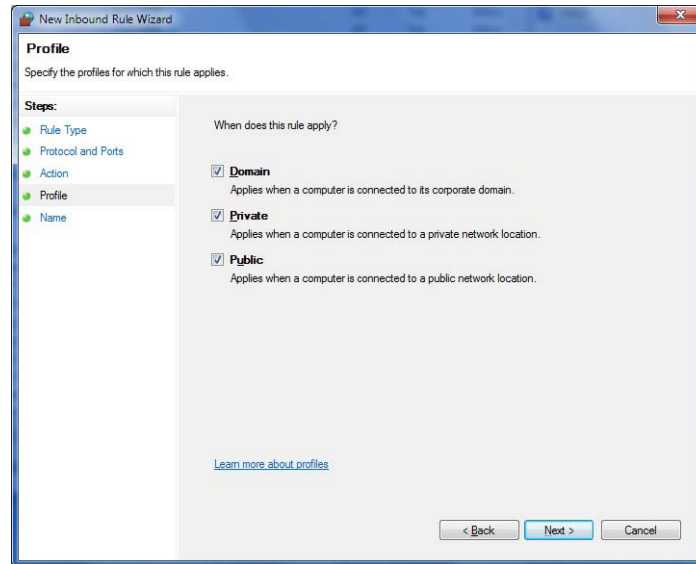
- Select the **TCP** and **Specific Local Ports** radio buttons (as shown below).
- Enter the appropriate port number (port 1024 in this example).
- Click **Next**.



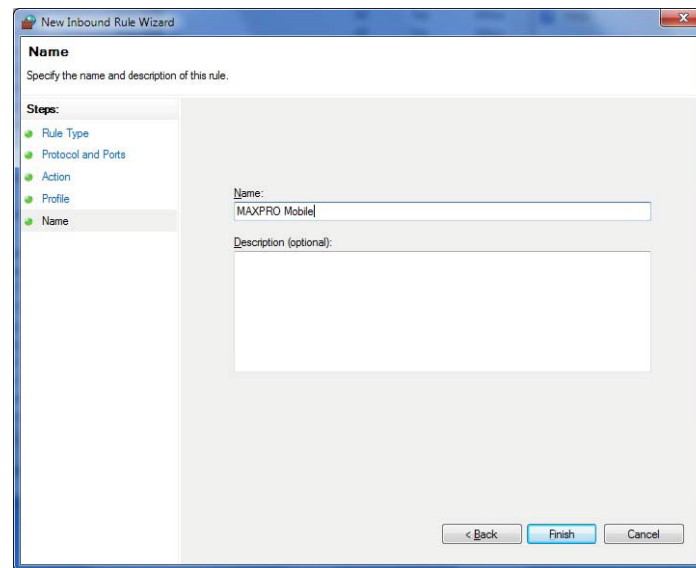
4. The Action screen appears. Select the **Allow the connection** radio button, then click **Next**.



- The Profile screen appears. Select the **Domain**, **Private**, and **Public** check boxes, then click **Next**.



- The name screen appears. In the **Name** field, enter a name for the rule. Click **Finish**.

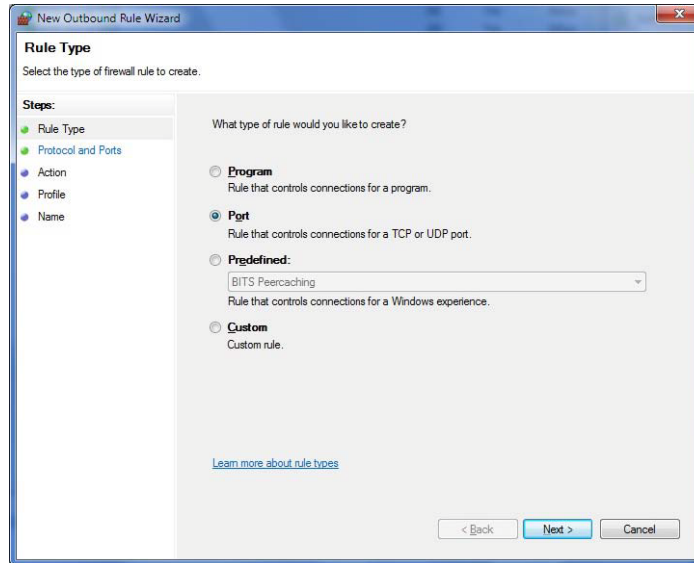


Setting Up Outbound Firewall Rules

The procedure for setting outbound firewall rules is similar to that outlined in [Setting Up Inbound Firewall Rules](#).

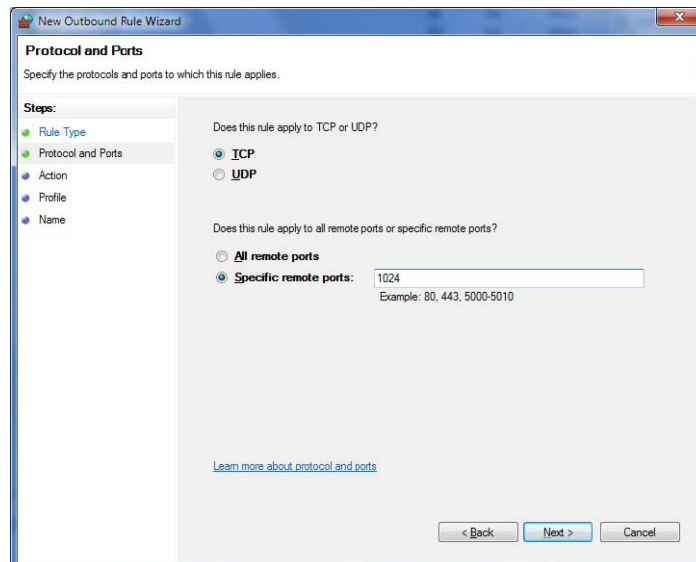
- In Windows, navigate to **Start > Control Panel > System and Security > Windows Firewall > Advanced settings > Outbound Rules**. Select **New Rule**

2. The **Rule Type** screen appears. Select the **Port** radio button, then click **Next**.

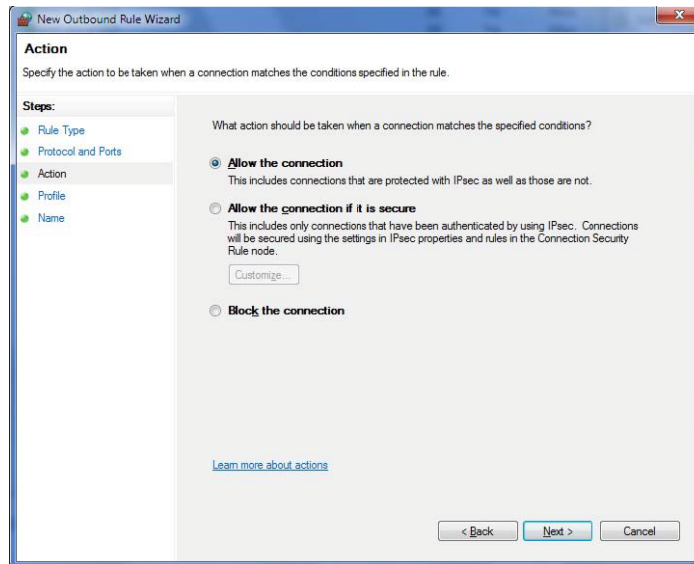


3. The Protocol and Ports screen appears.

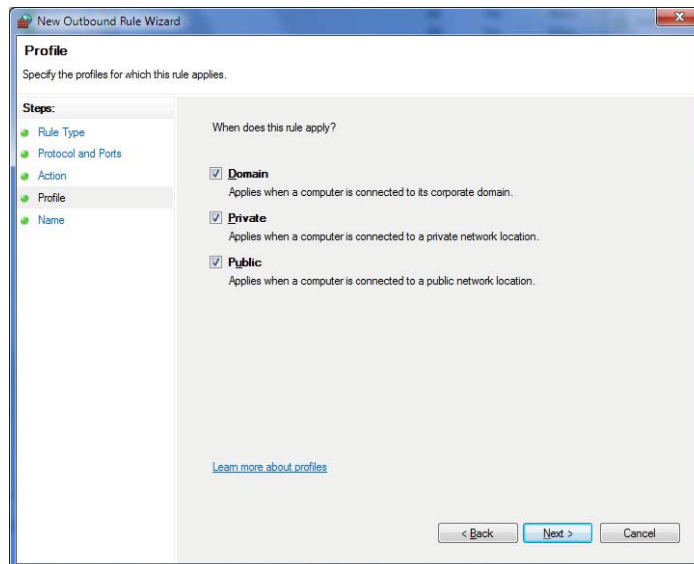
- Select the **TCP** and **Specific Local Ports** radio buttons (as shown below).
- Enter the appropriate port number (port 1024 in this example).
- Click **Next**.



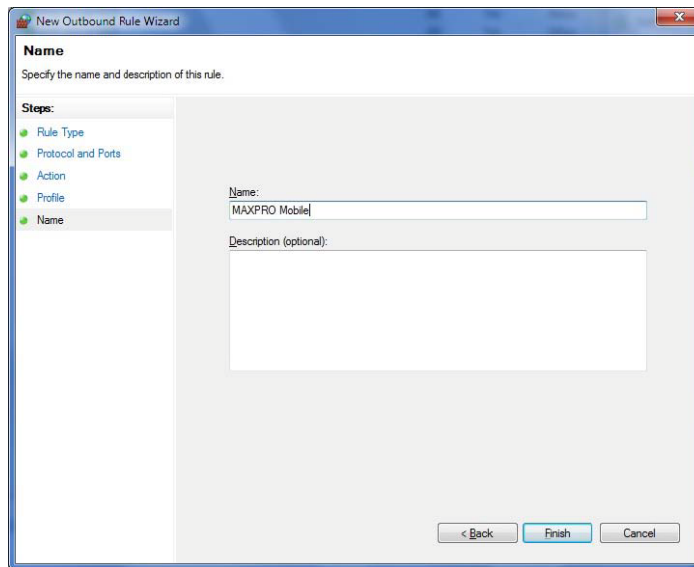
- The **Action** screen appears. Select the **Allow the connection** radio button, then click **Next**.



- The **Profile** screen appears. Select the **Domain**, **Private**, and **Public** check boxes, then click **Next**.



6. The **Name** screen appears. In the **Name** field, enter a name for the rule. Click **Finish**.



Your inbound and outbound firewall rules are now set up.

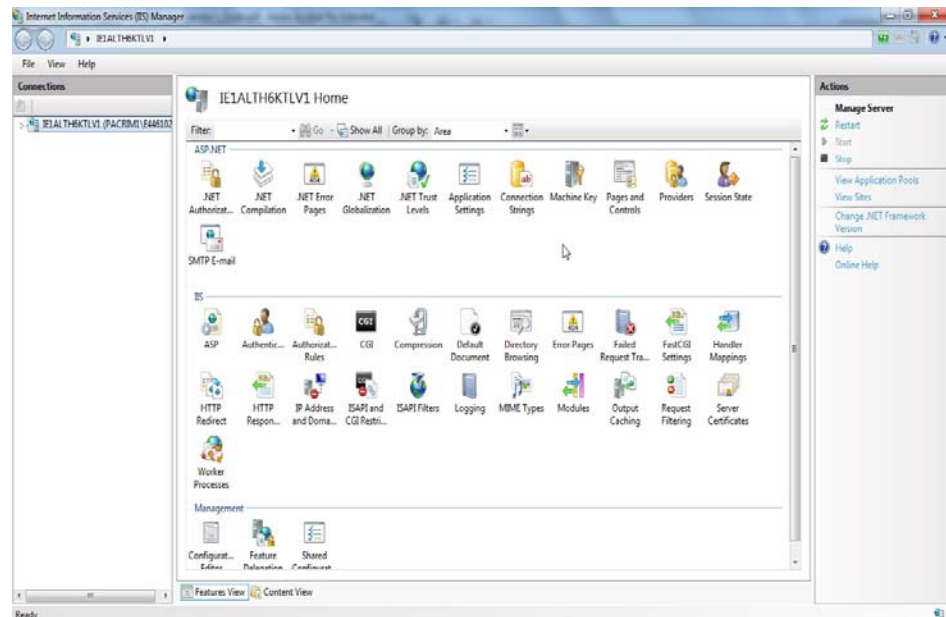
Configuring the web.config file

Once you are done setting the inbound and outbound firewall rules, you should configure web.config file with the port details. Before you configure the web.config file you need to decrypt the web.config file.

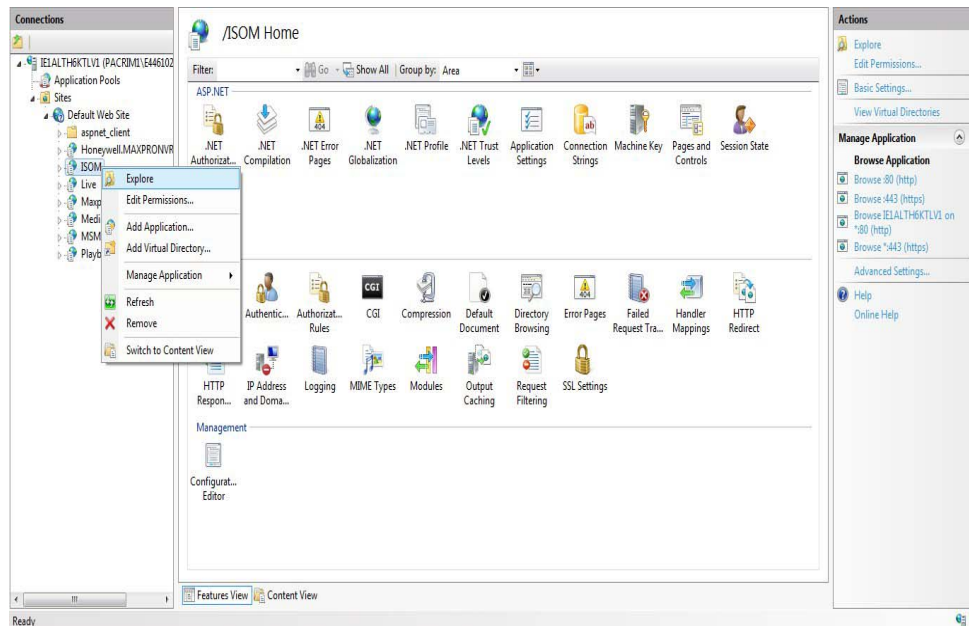
Decrypt the web.config file

To decrypt the web.config file

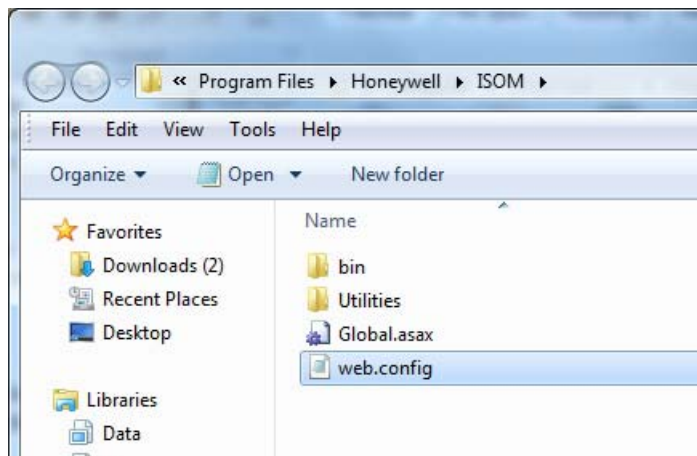
1. From the Windows **Start** menu, select **Run**. In the **Open** field, enter **inetmgr**, then click **OK**. The **Internet Information Services Manager** window appears.



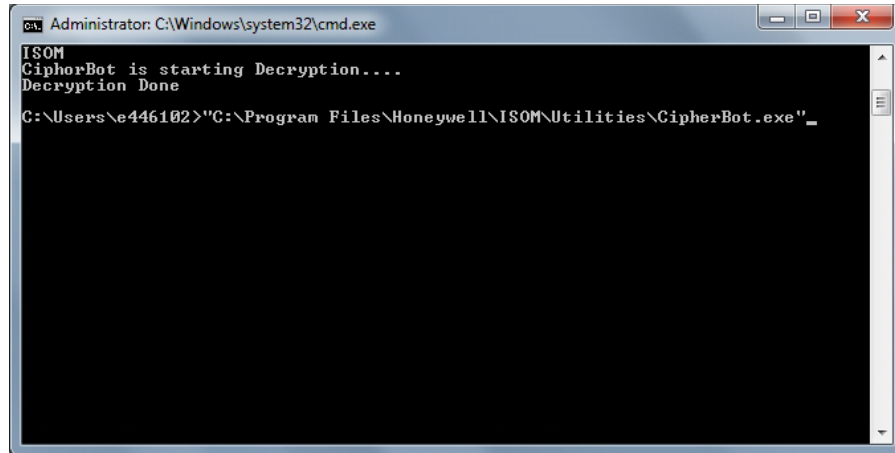
2. In the **Connections** pane, navigate to **Site>Default Site>ISOM**.
3. Right-click the **ISOM** node and then click **Explore** as shown below.



The **ISOM** folder is displayed as shown below.

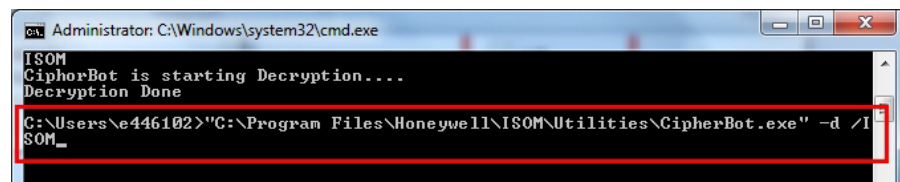


4. Click **Start>Run** to open the Run command window.
5. Type **cmd** in **Run** command window to open a command prompt window.
6. Double-click the **Utilities** folder and drag and drop the **CipherBot.exe** into the command prompt window as shown below.



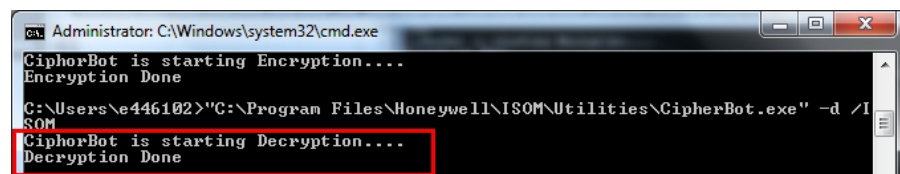
```
Administrator: C:\Windows\system32\cmd.exe
ISOM
CiphorBot is starting Decryption...
Decryption Done
C:\Users\e446102>"C:\Program Files\Honeywell\ISOM\Utilities\CiphorBot.exe" _
```

7. Type **-d /ISOM** command in the command prompt window as shown below and then press **Enter**.



```
Administrator: C:\Windows\system32\cmd.exe
ISOM
CiphorBot is starting Decryption...
Decryption Done
C:\Users\e446102>"C:\Program Files\Honeywell\ISOM\Utilities\CiphorBot.exe" -d /ISOM
```

A message "**Decryption Done**" is displayed as shown below.



```
Administrator: C:\Windows\system32\cmd.exe
CiphorBot is starting Encryption...
Encryption Done
C:\Users\e446102>"C:\Program Files\Honeywell\ISOM\Utilities\CiphorBot.exe" -d /ISOM
CiphorBot is starting Decryption...
Decryption Done
```

Editing LiveRemoteURI and PlaybackRemoteURI fields

After decrypting the web.config.exe file now you need to change the LiveRemoteURI" & "PlaybackRemoteURI fields in the web.config file.

To edit the LiveRemoteURI and PlaybackRemoteURI fields

1. Repeat the step 1 through step 3 to open the ISOM bin folder as explained in [Decrypt the web.config file](#) file section.
2. Double-click the web.config file.
3. Under appsettings locate the **LiveRemoteURI** and **PlaybackRemoteURI** fields as shown below.

```

web.config - Notepad
File Edit Format View Help
<add key="ClipPlayback" value="https://localhost/mpcwebservice/clips?clipid=" />
<add key="RTSPSleepTime" value="1000" />
<add key="Encryption_PassKey" value="c0n7r011" />
<add key="HDImageResizingEnabled" value="1" />
<add key="LogPath" value="c:\MobileLogs\" />
<add key="EnableLog" value="1" />
<add key="baseuri" value="http://localhost" />
<add key="RemoteUri" value="http://10.77.9.48" />
<add key="LiveRemoteUri" value="http://10.77.9.48:Port/Live/Media" />
<add key="PlaybackRemoteUri" value="http://10.77.9.48:Port/Playback/Media" />
<add key="IsFirmwareAccessEnabled" value="false" />
<add key="IsLogEnabled" value="true" />
<add key="RouteTableFilePath" value="" />
<add key="LocalPath" value="C:\Muss" />
<add key="deployment" value="ISOM" />

```


4. Add the port number after the IP address which is created in [Step 1: Changing the Default Port 80 on the MAXPRO NVR](#).

Note: You should enter the same port number which is defined in the [Step 1: Changing the Default Port 80 on the MAXPRO NVR](#) section.

5. Click **File>Save** to save the web.config file.

Step 3: Changing the Port in the MAXPRO Mobile app/MAXPRO NVR Web Client

To change the port MAXPRO Mobile app

1. Launch MAXPRO Mobile by tapping  on your mobile device.
2. Click **Setup** in the top left hand corner.
3. Select the **MAXPRO NVR** tab.
4. Set the **IP Address** field to **<IP:PORT>**. For example, if the port was changed to 1024 with the steps above, enter the IP Address as **74.x.x.x:1024**.
5. Click **Save**.
6. Tap to the left of the name to enable the NVR (check mark displays). Click **Setup** to return to the log on dialog.

To change the port in MAXPRO NVR Web Client

- Type the URL **http://<MAXPRO NVR Server IP or Machine name>:<PORT>/MAXPROWEB/** in your web browser and then press **Enter**. The login page appears.

Note: **<MAXPRO NVR Server IP or Machine name>** needs to be replaced by the IP address or Machine name (as applicable) of the MAXPRO NVR Server machine on which both the Web Server and the NVR Server are installed by default. **<PORT>** needs to be replaced by the new port. For example: if the port is changed to 1024 with the steps above, enter the URL as **http://74.x.x.x:1024/MAXPROWEB/**

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