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IEI eMerge™ and Milestone Systems Network Video Recorder

Setup and Integration Guide

Milestone Version 6.5 and eMerge Version 3.2 and above

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Requirements for Milestone NVR/IEI eMerge Integration

The hardware, software, and licenses required for your IEI eMerge™ NVR features are listed below.

In addition to those items it will be necessary for you to have:

- Direct access to the Milestone Server machine.
- Login username and password to the Network Controller with setup privileges.

Hardware

At this release the NVR feature is tested to work with the following devices:

- **IEI eMerge:** Version 2.5 or higher.
- **PC with Windows XP Pro™ SP2, or Windows Vista™:** You will need an administrative account on the PC in order to install software.
- **Large Disk Drive:** The Milestone web site at <http://www.milestonesys.com> has online calculators to assist you in estimating the disk capacity you will need for both the server and storage. The variables to be considered in selecting drive capacities include: number of cameras, frames per second, image size and resolution, days of storage required, and the number of recording hours per day.

Software and Licenses

- **IEI VMS license file:** In new systems this feature is already enabled in the I-button. To enable the Video Management System feature in existing systems upload and apply the file `ibutton.lic` to the Network Controller. Obtain this file from IEI. You will need to provide the iButton Serial Number from the Support/Utility : About page of the security application.
- **Milestone Systems XProtect Enterprise v 6.5:** This includes the Milestone XProtect Administrator, Milestone Image Server Administrator, and the Milestone Recording Service applications.
- **Browser:** Internet Explorer 6 or above is needed because of the use of an Active X component.
- **IEI Milestone Service:** This service handles communications between the Milestone system and the eMerge. This service creates its own event log and will add itself to the Windows Firewall. (Windows XP Pro SP2 or Windows Vista required.)
- **IEI Milestone Generic Event Builder:** This utility creates correct Start, Stop, and PTZ events on the Milestone system for each camera. This event builder will have an entry on the Start Menu.
- **Microsoft .NET Framework 2.0:** Both the V3.2 IEI Listener Service and the V3.2 Generic Event Builder require this. You can download .NET Framework from Microsoft™.

Setting up Milestone NVR and IEI eMerge Integration

1. Complete the Setup of the Milestone Systems NVR

Refer to the Milestone documentation for all phases of the installation and setup of the Milestone Server, cameras, and events. The procedures below recommend specific settings and actions known to improve the eMerge/Milestone Server integration and behavior.

Install Milestone Systems software on the server

1. Obtain and install a licensed copy of Milestone XProtect Enterprise 6.5.
2. Using the Milestone documentation install the Milestone Image Server, Administrator, and Recording Service. We recommend that you check the box **Add HTTP servers to Startup group** at the end of the install.

NOTE: We recommend that the PC used for the Milestone server have a static IP address.

Install the IEI Milestone Service software and the IEI Generic Event Builder

NOTE: The **IEI Milestone Service** and the **IEI Generic Event Builder** software must be installed on the same machine as the Milestone Server.

1. Open the **IEI Milestone Service** folder. Double-click the **Setup.exe**.

NOTE: This can be taken from the CD provided or downloaded from the IEI web site. Call Linear Technical Services at (800) 421-1587.

If you get an error message rerun **Setup.exe**.

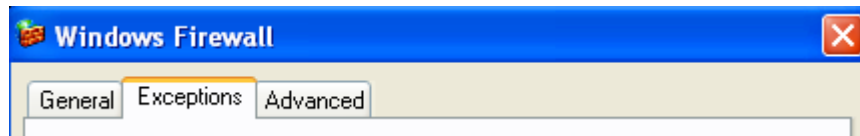
2. Complete the installation. The **IEI Milestone Service** will put its version number into the Event Viewer log. The **IEI Generic Event Builder** utility will put an entry on the Start menu.

Complete IEI Milestone Service setup

3. From the **Control Panel** open the **Administrative Tools**.
4. Open the Services applet and find the **IEI Milestone Service**.
5. Verify that the service has started. If it has not, click the **Start** link to start the service.
6. Open the **Event Viewer** applet from the **Administrative Tools** and select the **IEI Milestone Log**.
7. Right-click and select **Properties** to open the Property page for that event log.
8. In the **Log Size** section select **Overwrite events as needed**.
9. Click **Apply** and then click **OK** to save the changes.
10. To verify that the IEI Milestone Service has put an entry in the log, click **IEI Milestone Log** in the **Event Viewer**.
11. Two events should appear in the IEI Milestone Log. Double-click these events to display the Event Properties window. The descriptions of these two events will be, **IEI Milestone Setup Listener started**, and **IEI Milestone Service started**.

Complete Windows Firewall Setup

1. Open the **Windows Firewall** applet from the **Control Panel**.
2. Select the **Exceptions** tab and make sure that the **IEI Listener Service** is selected in the list of exceptions.



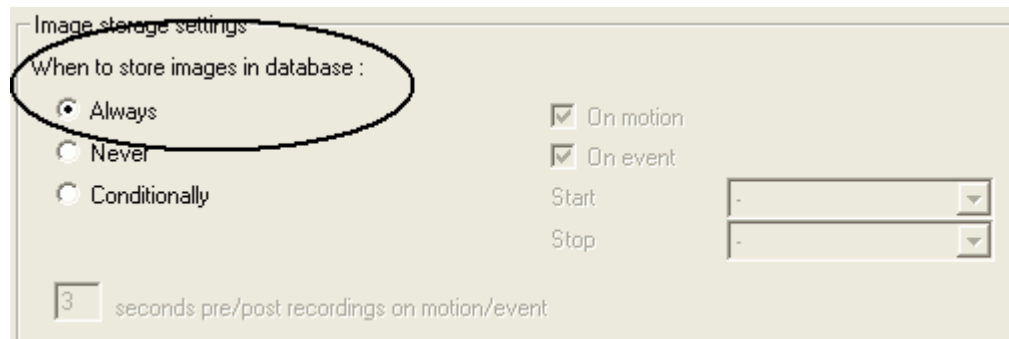
Configure Cameras in the Milestone Administrator Settings screen

1. Configure all cameras including PTZ presets.

NOTE: The eMerge limits camera names to 64 characters. Note that the Milestone system appends "Camera 1" to each camera name that you enter, and it places brackets [] before and after the name that you entered. Therefore each name that you enter can be no longer than 53 characters.

NOTE: It is possible to edit what Milestone adds to your camera names. See the Milestone documentation for assistance with this.

2. We recommend that each camera be set to store images **Always** in the **Image storage settings** section of the Milestone **Camera Settings** dialog. This ensures that video is always available for any time period including both before and after events.



Create events for each camera in the Milestone System

Use the **IEI Generic Event Builder** utility to create all the required events.

We recommend that you complete the set up of all the Milestone cameras (except for the creation of generic events) and then run this tool once. It will save much time and ensure that no typographical errors are made in the creation of the events.

Using the IEI Milestone Generic Event Builder

1. Select the GenericEventBuilder from the Windows **Start** menu. A message box is posted to remind you to exit the Milestone Administrator. The Generic Event Builder will not create events if Milestone's Recording Service, or Administrator are running.

NOTE: IEI's V3.2 Generic Event Builder requires Microsoft's .NET Framework 2.0 and it must have write access to the files on the Milestone server. We recommend running the tool on the server itself.

- The default path to the Milestone Server is automatically entered in the **Milestone Path** text box. If you installed your Milestone Server elsewhere then click the **Browse...** button to find and select the correct path.
- The three checked boxes in the image below are checked by default. **Create Stop/Start Events**, **Create PTZ Events**, and **Connect Events to Cameras** are actions that will almost always need to be completed.

NOTE: If you set the cameras to always store images as recommended above in the **Configure Cameras** procedure then generic Start and Stop events will not be necessary. However, you must set up at least one generic event or the Milestone Server will not allow communications over the Engine Trigger Port. By default this port is 1234.

- If you have already connected events to cameras in the Milestone system they will not be overwritten unless you check the **Overwrite existing events** box.

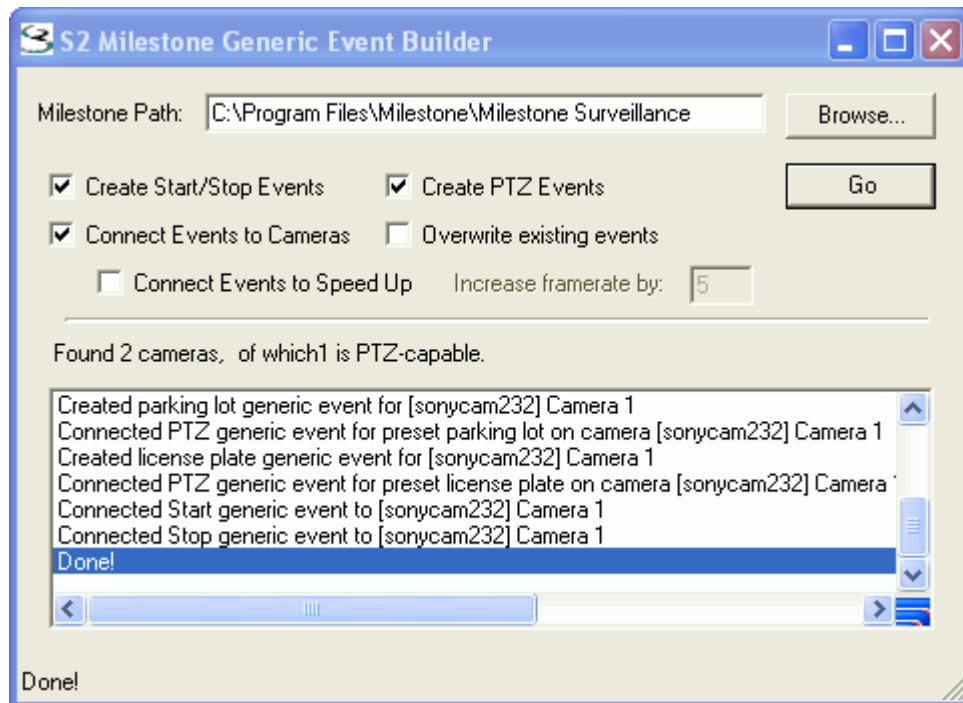
NOTE: If you have not set your Milestone cameras to always store images and you do not allow the GenericEventBuilder to overwrite the existing connected events, then the eMerge will not be able to trigger video recording related to eMerge events.

- The **Connect Events to Speed Up** box would only be checked if you want cameras in your Milestone system to normally run at a low frame rate (e.g. 1 frame/sec.) but to increase the frame rate for the duration of any triggered event. If you choose this option you can enter in the **Increase framerate by** textbox the number of frames per sec that should be added to the camera's normal frame rate.

For example: If you enter 5 and the normal frame rate is 1 frame/second, then following a triggered event the cameras will run at 6 frames per second.

NOTE: This setting will be applied to all cameras in the Milestone system. If this is not your intention then you will have to configure camera frame rate increases individually in the Milestone Administrator by selecting **Settings** for each camera.

- Click **Go**.



7. The image above shows that the list box records each action that the Generic Event Builder completed. In addition, the tool indicates how many cameras were found and how many were PTZ-capable. Be sure that the camera and PTZ-capable numbers agree with what you have set up.

NOTE: The **Events.ini** file (which contains the Start/Stop events) and the **SurvPro2.ini** file (which contains the PTZ events and Camera/Event connections) are backed up by the Generic Event Builder tool in case a restore becomes necessary.

8. If you have been using the **Milestone Recording Service** this will be restarted now.

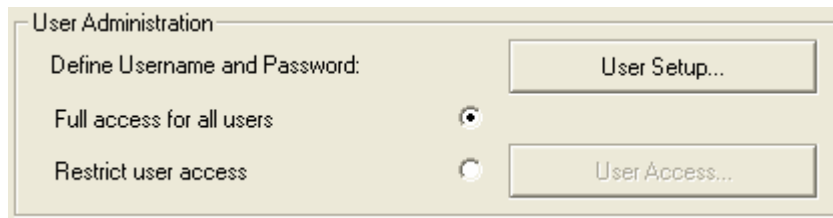
NOTE: If more cameras are added to the Milestone system at a later date then the Generic Event Builder tool can be re-run. It will create only the needed new events.

Complete the Milestone Setup

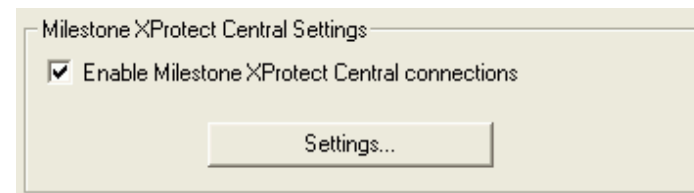
1. If you have not already done so create a User and Password with the **ImageServer Administrator**.
2. Click the **User Setup** button and create a user. The IEI eMerge defaults to the user name "IEIeMerge" and the password "eMerge." We recommend that you use these defaults.

NOTE: If you choose a different user name and password, be sure to change the eMerge defaults when you configure the IEI eMerge Milestone NVR page.

3. In the **ImageServer Administrator** make sure the **Full access for all users** button is selected. See image below.

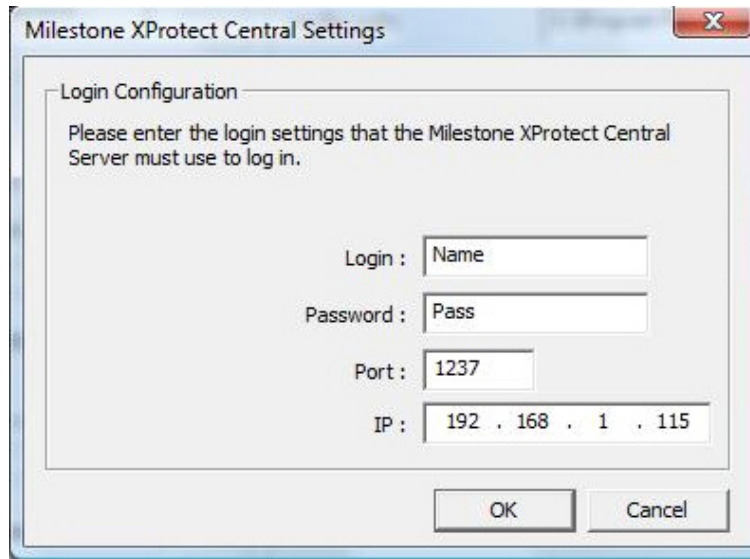


4. Complete the other **ImageServer Administrator** settings and click **OK**.
5. In the **Milestone XProtect Administrator** click the **General Settings** button and make sure that the **Enable Milestone XProtect Central connections** box is checked. This is necessary in order for the eMerge to receive camera configuration and events from Milestone.



6. Click the **Settings** button and in the **Engine IP** box fill in the static address of the PC where the Milestone Server is installed. See image below. The Port number should be 1237, as shown in the image below.

NOTE: Take note of the entries in the **Engine Login** and **Engine Password** text boxes in the dialog box below. These entries must match the entries in the **Engine Username** and **Engine Password** text boxes on the IEI eMerge Milestone NVR page.



7. If you have cameras that run only on a specified schedule, check **Start cameras on remote live requests** in the **Advanced** section. See image below.



8. Click **OK** to save these settings and close the **General Settings** dialog.

Verify that the Milestone system is functioning

1. Use the Milestone web client to verify the live video images are viewable. Or you can point your browser at the IP address and port number of the Milestone installation.
2. Login with the user name and password and verify that the Milestone system is working and you can see live video images.

2. Point the IEI eMerge to the Milestone NVR

Configure the Milestone NVR in the IEI eMerge

1. In the eMerge Security Application select **Setup : Cameras : Configure Milestone NVR**.
2. In the **NVR IP Address** text box enter the IP address of the NVR.
3. The **Engine Username** and **Engine Password** fields default to "Name" and "Pass" respectively. We recommend that you leave these defaults here and in the Milestone system.
4. The **Image Server Username** and **Image Server Password** fields default to "IEIeMerge" and "eMerge" respectively. Enter here the Image Server user name and password that you created when setting up the Milestone Systems Image Server.
5. The **Image Server Port** defaults to 80. If you changed this in the Milestone System you will have to change it here.
6. The **Engine Listener Port** defaults to 1237 in the Milestone system. We recommend that you do not change this default.
7. The **Event Trigger Port** defaults to 1234 in the Milestone system. We recommend that you do not change this default.
8. Click **Check Connection**.

NOTE: The **Check Connections** button initiates communication over port 3001. The **Discovered Information** section will automatically fill in.

9. Wait for the operation to complete and read the message box.

NOTE: The message box may indicate some error condition. This error must be fixed before you can proceed.

10. If the message indicates that the Milestone server is available for configuration then click **Save**.
11. Wait for the **VMS Definition Created** message.
12. Click the **List VMS Cameras** link at the bottom of the **Discovered Information** section. A list of camera names appears. You cannot change these names here.
13. Verify that the camera list is correct and complete. These cameras were previously set up during the configuration of the Milestone NVR through its own UI.

Configure the public IP and video motion Settings

1. In the eMerge Security Application select **Setup : Cameras : Configure Milestone NVR**.
2. **Public IP Address:** This IP address automatically fills in when you save a new NVR configuration.
3. **Public HTTP port:** This port number defaults to 80. This port must map to the Image Server Port on the Milestone Server.

NOTE: If this address or port is on another subnet or behind a firewall you may have to change this to the external public address of the router or firewall. The network administrator will have to setup the port translation for communications and video to and from this address.

4. **Combine VMD events arriving within seconds:** Video Motion Detection (VMD) events occurring within the specified number of seconds are combined into one network controller event.

Example: If you set this field to 60 seconds, then additional motion detection events will not be reported by the network controller unless at least 60 seconds has passed since the last motion detection on that camera.

5. Click **Save**.

3. Verify live video from the eMerge interface

Verify that you can see Milestone video from the eMerge interface

1. Select **Monitor : Cameras**.
2. Select a camera connected to the Milestone system.
3. You will be prompted to download the Milestone ActiveX control. This is required. You will see a status message in the control when it connects to the Milestone server.
4. Verify that you can see live video from this Milestone connected camera.

4. Setup and verify Video Motion Detection from Milestone

Verify that Milestone VMD triggers eMerge events

1. Ensure that you have configured VMD events on the Milestone system. You can set the field of motion and sensitivity per camera.
2. Select **Setup : Alarms : Events** and define an eMerge event.
3. Select **Setup : Alarms : Virtual Inputs** and assign your eMerge event to a Milestone connected camera **Video Motion Event**. Make sure the **Virtual Input** is either **Always Armed** or using a currently active time specification. Also verify that both the **Virtual Input** and the **Video Motion Event** are **Enabled**.
4. Select **Monitor : Monitoring Desktop** and create motion on that camera.
5. Verify that your eMerge event was triggered.

5. Setup and verify video recording actions from IEI eMerge

Verify that eMerge events record video

1. Select **Setup : Alarms : Events** and define an eMerge event with a **Record Video** action. Be sure to select a Milestone connected camera.
2. Assign a trigger to this record video event. You can select **Setup : Alarms : Inputs** and assign the event to the **Off-normal Event**, or you can select **Setup : Access Control : Portals** and assign the event to the **System-wide : Held** state of a portal.
3. Select **Monitor : Monitoring Desktop** and trigger the event. (Hold the portal open or set the input into an alarm state.)
4. Verify that the event was triggered and click the video icon to view the recorded video.

Appendix on Network Port Setup

The following ports are blocked by the Windows Firewall on the machine with the Milestone server installed. The IEI Milestone Service software installed above adds itself to the list of applications allowed to open ports on the Firewall.

- Port 3001 is opened by the IEI Milestone Service software for the eMerge to initiate configuration communications to and from the Milestone server.
- Port 3002 is opened by the IEI Milestone Service software for the eMerge to send commands to the Milestone server to control cameras.
- Port 80 must be open for the browser to pull video from the Milestone Server. This is set in the Milestone Image Server Administrator.

NOTE: If you change this port in the Milestone Image Server Administrator you will have to change the **Image Server Port** default on the **Configure Milestone NVR** page of the eMerge Security Application as noted in the procedure above.

If the eMerge and the Milestone Server are on different subnets then routers and firewalls need the following ports open:

- Open port 3001 on the router in front of the Milestone Server for the IEI eMerge to initiate configuration communications to the Milestone Server.
- Open port 3002 on the router in front of the Milestone Server for the IEI eMerge to send commands to the Milestone Server such as, “start/stop recording” and “move to preset.”
- Open port 3000 on the router in front of the eMerge for the Milestone Server to report video motion events to the eMerge.
- Open port 80 on the router in front of the Milestone Server for the browser to pull a video feed from the Milestone Image Server. If you changed this port in the Milestone Image Server Administrator you will have to open the port you specified there.

If the Milestone Server is behind a NAT router, then the IEI eMerge must also be behind that same NAT router.