



Integration Note

Manufacturer:	Various
Model Number(s):	ONVIF 2.0 Profile S Compliant Video Cameras
Minimum Core Module Version:	g! 6.5
Comments:	ONVIF 2.0 Profile S
Document Revision Date:	12/29/2013

IMPORTANT: This Integration note only applies to the “ONVIF (Static)” and “ONVIF (Dynamic)” drivers available in version 6.5 and up of g! software. If your camera is not ONVIF 2.0 Profile S compliant, you must use the Integration Note for the specific camera rather than this document.

OVERVIEW AND SUPPORTED FEATURES

THE ONVIF CAMERA DRIVER SUPPORTS THE FOLLOWING FEATURES:

Pan / Tilt / Zoom: Some ONVIF 2.0 Profile S compliant cameras can be turned to see various locations and zoom in and out. This feature is supported in the driver, and is configurable using a dropdown menu.

IMPORTANT: Only Optical zoom is supported. Digital Zoom is essentially cropping the existing image and does not actually magnify what the camera sees, and is not supported.

Auto Detection: Some ONVIF 2.0 Profile S compliant cameras can be auto detected on the network by the ONVIF (Dynamic) driver. This feature is supported in the driver and is available during configuration.

IMPORTANT: Any ONVIF camera that does not support Auto Detection will need to be configured using the ONVIF (Static) driver.

Presets: Some ONVIF 2.0 Profile S compliant cameras support presets, allowing the user to store predefined locations such as a driveway or pool. This feature is supported in the driver, and is configurable using a dropdown menu.

IMPORTANT: For ONVIF 2.0 Profile S complaint cameras that support presets, the presets must be initially configured in the camera’s Management Software. After initial configuration, the presets can be reassigned in the g! Viewer. Check the camera’s documentation for full information on configuring presets.

Image Flip: The camera can be mounted with its base up or down, and the image will appear normal. Simply set the “flip 180” option in the g! Configurator.

THESE CAMERAS DO NOT SUPPORT THE FOLLOWING FEATURES:

Motion Detection: Some ONVIF 2.0 Profile S compliant cameras support motion detection to trigger events in the g! system. This feature is not supported by the g! system at this time.

Input/Output: Some ONVIF 2.0 Profile S compliant cameras include an I/O connector for sensor inputs and alarm outputs. These are not supported by the g! system at this time.

One-Way Audio: Some ONVIF 2.0 Profile S compliant cameras support Listen function for audio. This feature is not supported by the g! system at this time.

Two-Way Audio: Some ONVIF 2.0 Profile S compliant cameras support two way audio (speaking from a touch screen and outputting from Camera). This feature is not supported by the g! system at this time.

Megapixel Resolution: Some models support Megapixel resolution. This is not supported by g! at this time, and only the cameras lower resolutions will be usable in the Viewer.

Any feature not specifically noted as “supported” is not supported.

INSTALLATION OVERVIEW

Installing ONVIF 2.0 Profile S compliant cameras can be broken down into the following steps:

1. Install cameras at desired locations, and pull power and Cat5 cabling as needed. Refer to the camera manufacturer's documentation for mounting details.
2. Connect the cameras electrically to the home network and configure the cameras. See **Camera Configuration**.
3. Integrate the cameras into the **g!** system and test proper operation. This step is outlined in **g! Configuration/g! Configuration Details**.

CAMERA CONFIGURATION

The camera configuration is done with software provided by camera manufacturer and the ONVIF Device Manager 2.2.250, which must be run from a computer with Windows also connected to the same network as the camera.

Please consult your camera manufacturer's documentation for details on using its configuration utility.

The ONVIF Device Manager 2.2.250 is a free open source tool that can be used to configure and test ONVIF cameras prior to g! integration. It can be obtained from sourceforge:

<http://sourceforge.net/projects/onvifdm/?source=directory>

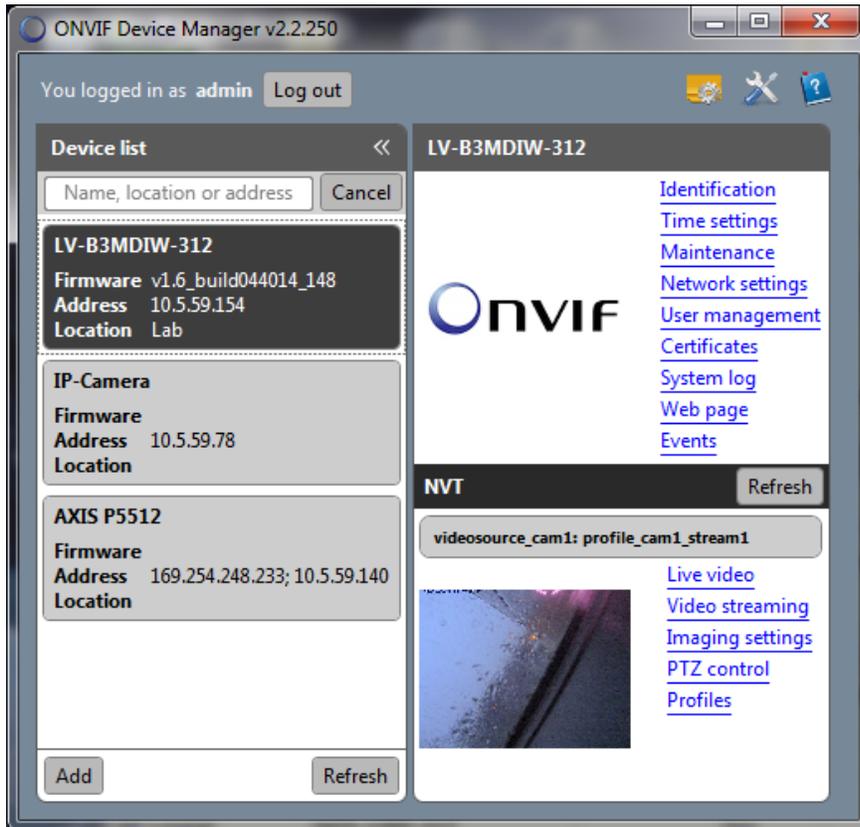
IMPORTANT: The instructions below assume that you have gone through the Manufacturer's installation and configuration process and that the camera is functional and available on the network. Please check the Manufacturer's documentation for any configuration modifications that need to be made to enable ONVIF for the camera model, including but not limited to Settings, Modes of Operation, and Firmware Revisions required.

NOTE: <http://www.onvif.org/FindaProduct/ProfileProducts.aspx> , contains a list of ONVIF-Compliant products. We have found through testing that a product's existence on this list does not guarantee that the camera will work with Elan g!. **Please be sure to test any camera model(s) intended to be installed into a client's system.**

USING THE ONVIF DEVICE MANAGER SOFTWARE

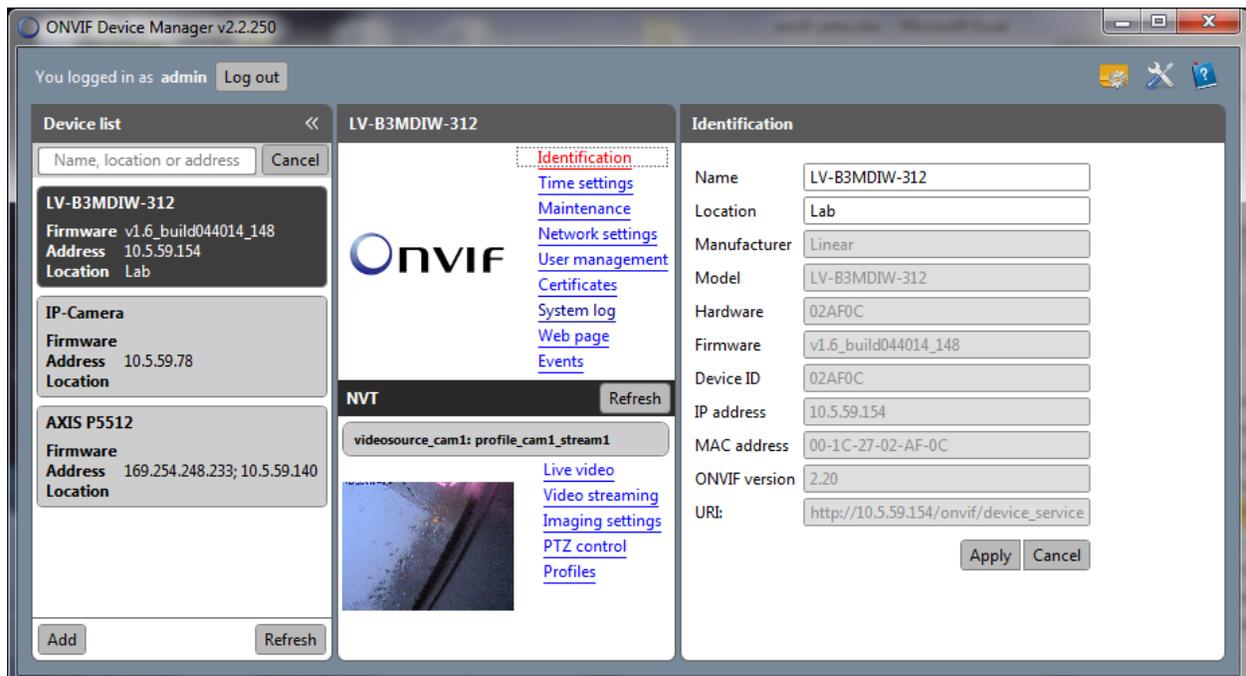
1. Launch the ONVIF Device Manager software.

The following Screen appears. Your camera may already be listed, but in the Upper Left-hand corner, you should enter the required credentials to get full access to your camera for configuration.

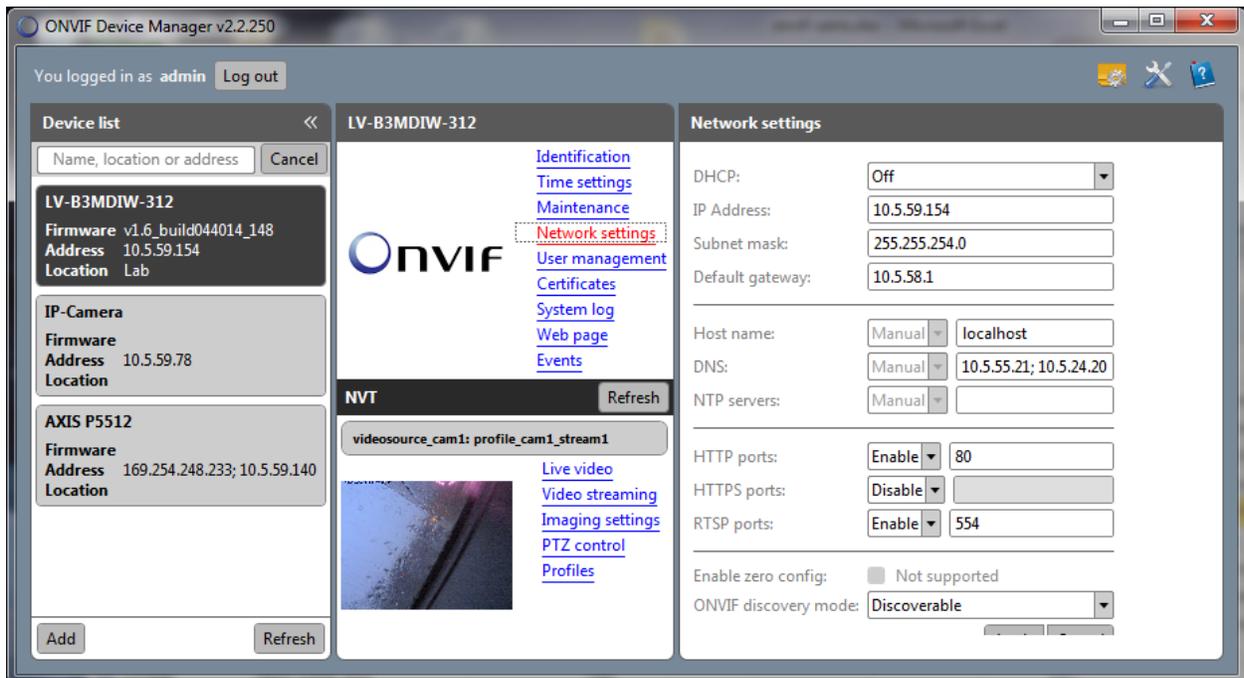


2. The ONVIF Device Manager will allow you to configure and view a variety of settings. Many of these are settings that have already been configured while going through the manufacturer's configuration process. This document only covers sections relevant to ONVIF configuration with the g! system

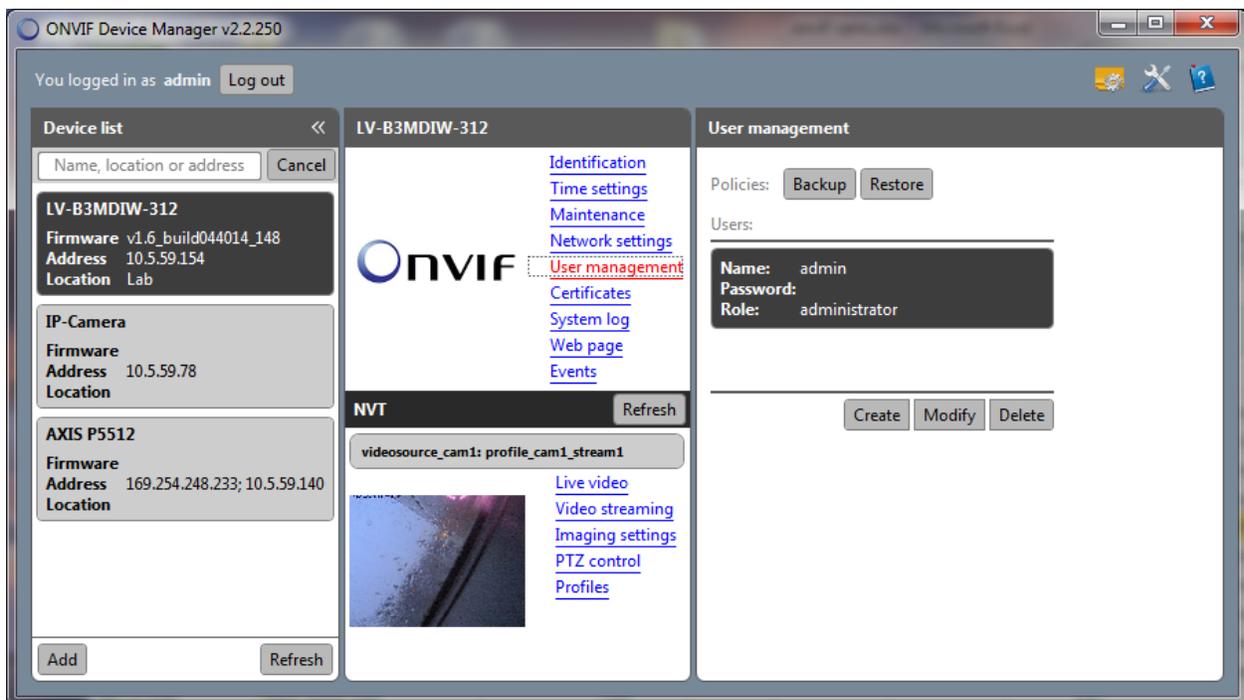
Identification: Here you can name the camera and assign a location. If you intend on using the ONVIF (Static) Driver, you will need to make note of the URI for later use when configuring the camera in the g! system.



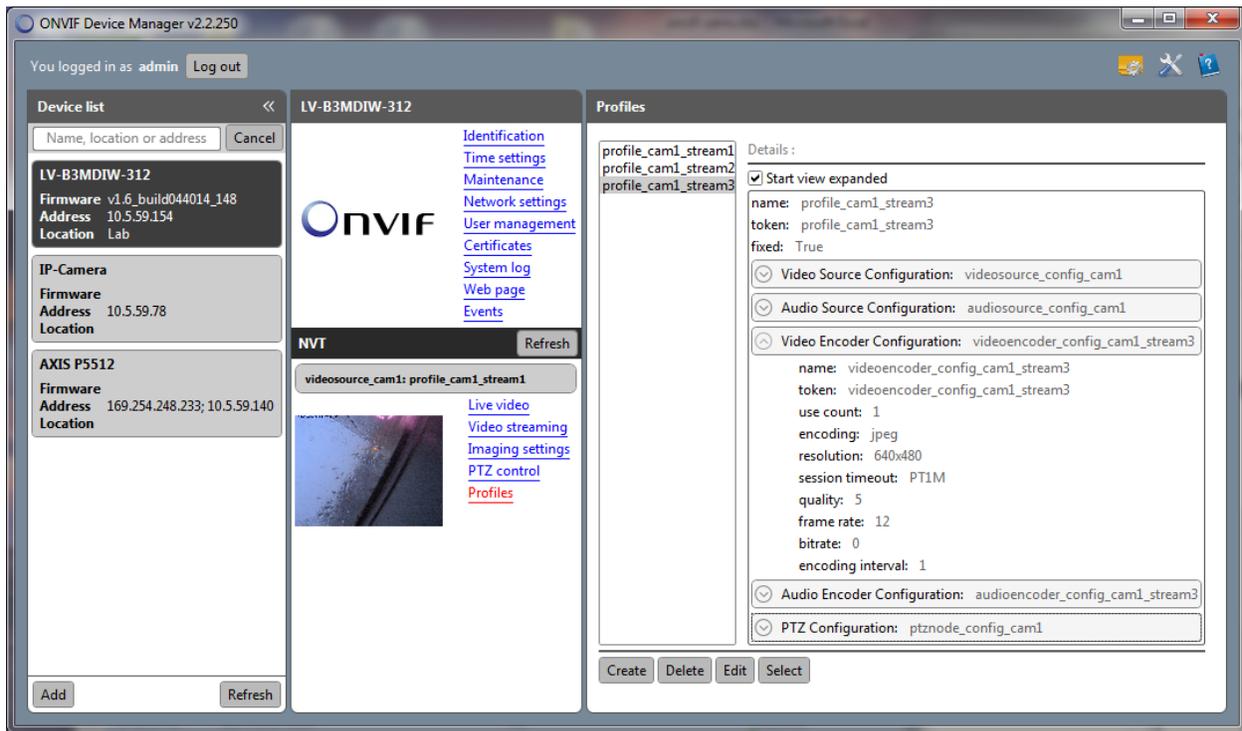
Network Settings: We recommend you use the camera manufacturer’s configuration utilities to configure network settings for your camera. While the ONVIF Device Manager will allow you to modify these settings, the camera manufacturer’s configuration software is a more reliable way to make these changes.



User Management: We recommend you use the camera manufacturer’s configuration utilities to manage users for your camera. While the ONVIF Device Manager will allow you to manage users, the camera manufacturer’s configuration software is a more reliable way to make these changes.



Profiles: To work with the g! system, the camera must have at least one profile that supports a jpeg/mjpeg video stream. Profiles can be configured and assigned in the camera manufacturer’s configuration utility, ONVIF Device Manager, or g! Configurator.

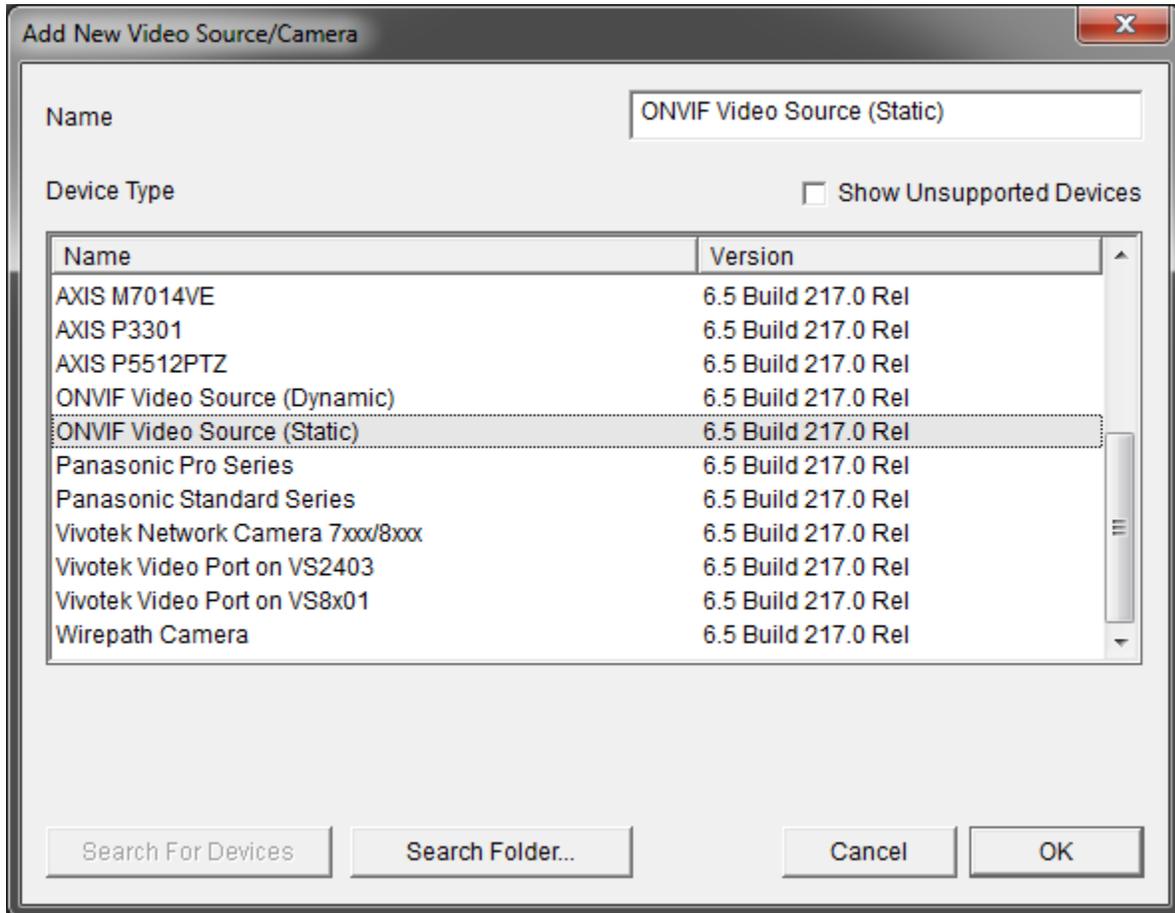


3. After verifying settings and confirming camera functionality in the ONVIF Device Manager, you are ready to integrate the camera into the g! System.

g! CONFIGURATION

ADDING A STATIC ONVIF CAMERA

1. In the g! Configurator's Video tab right-click Video Cameras/Sources, select Add New Video Camera/Source, and select ONVIF Video Source (Static)



2. Enter a URL for the device. This is the URI from the Identification tab in the ONVIF Device Manager.
3. Enter your UserID and Password for the camera.

ADDING A DYNAMIC ONVIF CAMERA

1. In the g! Configurator's Video tab right-click Video Cameras/Sources, select Add New Video Camera/Source, and select ONVIF Video Source (Dynamic). Enter the UserName and Password for your Camera, and Click "Search For Devices"
2. When the Device List is returned, select the ONVIF camera you wish to add to the system. No additional Configuration should be required.

IMPORTANT: Some ONVIF cameras will not be discoverable using the Dynamic driver. In the case of a camera that does not broadcast or advertise itself on the network, you will need to use the ONVIF (Static) driver to connect to that camera.

Add New Video Source/Camera

Name: ONVIF Video Source (Dynamic)

Device Type: Show Unsupported Devices

Name	Version
AXIS 240Q/241Q Port	6.5 Build 217.0 Rel
AXIS M7001	6.5 Build 217.0 Rel
AXIS M7001VE	6.5 Build 217.0 Rel
AXIS M7014 Port	6.5 Build 217.0 Rel
AXIS M7014VE	6.5 Build 217.0 Rel
AXIS P3301	6.5 Build 217.0 Rel
AXIS P5512PTZ	6.5 Build 217.0 Rel
ONVIF Video Source (Dynamic)	6.5 Build 217.0 Rel
ONVIF Video Source (Static)	6.5 Build 217.0 Rel
Panasonic Pro Series	6.5 Build 217.0 Rel
Panasonic Standard Series	6.5 Build 217.0 Rel

UserName: admin

Password: admin

Search For Devices Search Folder... Cancel OK

Add New Video Source/Camera

Name: ONVIF Video Source (Dynamic)

Device Type:

Manufacturer	Model	Firmware	Serial No.
Linear	LV-B3MDIW-312	v1.6_build0440...	02AF0C

UserName:

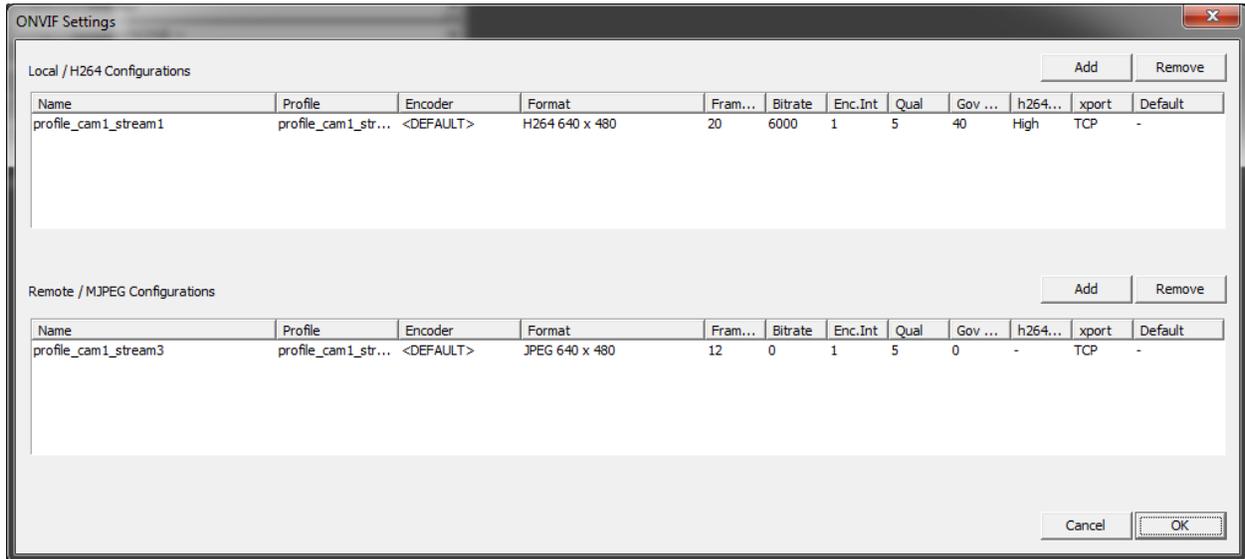
Password:

Cancel OK

ONVIF PROFILES

After you have added your ONVIF 2.0 Profile S compliant camera to the g! system, you will need to verify that there is an available profile for the system to use.

1. Click on the ONVIF Profiles Button. You will see the following Screen:



2. Under Remote/MJPEG Configurations, make sure you have added a profile that is using a JPEG/MJPEG format and an encoder that supports JPEG/MJPEG
 - a. To Add a Profile Select Add under Remote/MJPEG Configurations, and enter a name for the profile
 - b. Individual settings can be adjusted by right-clicking on the setting, and selecting from the list of available options.

IMPORTANT: Some ONVIF cameras will only support a single video stream. If this is the case with your camera, you will need to make sure the stream is configured to use JPEG/MJPEG under Local/H264 Connections, and then enter a second Configuration using the same stream under Remote/MJPEG Configurations. Cameras that support video streams via the g! Controller **MUST** have Remote/MJPEG Configurations defined.

Viewer	Video Stream Delivery*	Supported Format**
PC Viewer	Peer-Peer	Supports H.264
Android – Older Client	Via Controller	MJPEG Profile Required
Android – Newer Client	Peer-Peer	Supports H.264
iOS – Older Client	Via Controller	MJPEG Profile Required
iOS – Newer Client	Peer-Peer	Supports H.264
MacOS – Older Client	Via Controller	MJPEG Profile Required
MacOS - Newer Client	Peer-Peer	Supports H.264
OSD (On Screen Display)	Via Controller	Supports H.264
TS7/TS10	Peer-Peer	MJPEG

* Peer-Peer streams video directly from the Camera to the Client, without passing through the g! Controller

** MJPEG is supported on all Viewers.

g! CONFIGURATION DETAILS

The following table provides settings used in the g! Configurator when connecting to a camera. Please refer to the *Configurator Reference Guide* for more details. In the table below:

- “<Select>” Select the appropriate item from the list (or drop-down) in the Configurator.
- “<User Defined>”, etc. Type in the desired name for the item.
- “<Auto Detect>”, etc. The system will auto detect this variable.

ONVIF (Static)

Devices	Variable Name	Setting	Comments
Communication Device	N/A (See Note 1)	N/A (See Note 1)	
Video Cameras/Sources	Name	<User Defined>	
	Device Type	NULL	
	URL	<User Defined> (Default: http://192.168.0.81/onvif/device_service)	Can be located under the URI on the ONVIF Device Manager software described above
	UserName	<User Defined>	
	Password	<User Defined>	
See Note 2	Enable DVR	<Select> (Default:<No>)	Set to YES to enable the built in DVR function. See the DVR Integration Note for full details.
	Flip Image 180	<Select> (Default: <No>)	Set to YES if camera is inverted.
	Hide Full Screen Control	<Select> (Default: <No>)	Set to YES to hide the Full Screen button from the Viewer.
	Goto Preset When Idle	<Select> (Default: <None>)	Choose the desired preset to have the camera return to when it is not open in any Viewer.
	Record Resolution	<Select> (Default: <Don't Change>)	Don't Change will default to last active resolution, or set a specific resolution for recording.
	Record Mode	<Select> (Default: Auto (Medium Sensitivity))	Select the desired sensitivity level for the Auto motion mode, or choose fixed value.
	Record Threshold	<Select> (Default: Disabled)	Record Mode must be set to "Fixed Threshold" to enable. Select the desired motion %

Notes:

1. No Communication Device is needed: just add Video Cameras.
2. Not all options may be available, as some options only open up based on the selection of other options.

ONVIF (Dynamic)

Devices	Variable Name	Setting	Comments
Communication Device	N/A (See Note 1)	N/A (See Note 1)	
Video Cameras/Sources	Name	<User Defined>	
	Device Type	ONVIF (Dynamic) / Device Name	
	UserName	<User Defined>	
	Password	<User Defined>	
See Note 2	Enable DVR	<Select> (Default:<No>)	Set to YES to enable the built in DVR function. See the DVR Integration Note for full details.
	Flip Image 180	<Select> (Default: <No>)	Set to YES if camera is inverted.
	Hide Full Screen Control	<Select> (Default: <No>)	Set to YES to hide the Full Screen button from the Viewer.
	Goto Preset When Idle	<Select> (Default: <None>)	Choose the desired preset to have the camera return to when it is not open in any Viewer.
	Record Resolution	<Select> (Default: <Don't Change>)	Don't Change will default to last active resolution, or set a specific resolution for recording.
	Record Mode	<Select> (Default: Auto (Medium Sensitivity))	Select the desired sensitivity level for the Auto motion mode, or choose fixed value.
	Record Threshold	<Select> (Default: Disabled)	Record Mode must be set to "Fixed Threshold" to enable. Select the desired motion %

Notes:

1. No Communication Device is needed: just add Video Cameras.
2. Not all options may be available, as some options only open up based on the selection of other options.

COMMON MISTAKES:

1. **No Video:**
 - a. The camera must have a Local/JPEG configuration defined under ONVIF Settings in the configurator. This configuration must support JPEG/MJPEG video.
 - b. Invalid Credentials. Some ONVIF cameras will allow discovery with no credentials entered. These cameras will not display a video stream until the proper credentials have been entered in configurator.
2. **Blank Presets:**
 - a. Presets must be configured through the camera first. They can be reassigned in the g! Viewer.
 - b. If the g! Controller is started with the camera off-line; the list of presets will be blank. We will attempt to restore the list when the camera comes back on line
3. **Incorrect Frame Rates in Communication Status:** The Communication Status for the ONVIF device will only report on frames being processed through the controller. It will not report on peer-peer streaming frame rates.
4. **Inoperable PTZ:** The g! System will offer the user PTZ controls if the camera is advertising that it has PTZ capability. Occasionally a NON-PTZ camera will advertise to the system that it has PTZ capability. This will cause the g! Viewer to present non-functional PTZ controls to the end user.
5. **Slow or Choppy video, Video Fails to Display (Blue Screen):** When displaying multiple cameras at the same time, the pace of the incoming video can surpass the system's ability to process the video, resulting in slow or choppy video, or video that is never rendered (Blue Screen). This can be especially noticeable in custom screens showing multiple cameras, or when the ONVIF video resolution surpasses that Maximum resolution of your viewing device. If you are experiencing these types of issues, adjust the resolution in the ONVIF Profiles. Start with the lowest resolution and gradually work up to higher resolutions until you find a resolution that will meet your performance and viewing needs.