
Bluecherry Documentation

Release 2.8

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Installation of Bluecherry server

Server Installation

1.1 Requirements

Version 3 (beta) supports Ubuntu LTS releases (Ubuntu 16.04 and Ubuntu 18.04), Debian 9 (Stretch) and Debian 10 (Buster). Support for CentOS has been removed.

Ubuntu has two different x86 installation methods. The first is Ubuntu desktop, which will install Ubuntu along with the graphical interface. It is recommended that users without prior knowledge of Ubuntu or Linux use this method. You can also download our ISO image (bluecherry-v2-desktop-14.04-amd64.iso)

The second installation method is Ubuntu Server. The installation is a text-based interface and significantly more complicated than the desktop method. By default, the installation will not include the graphical desktop, which some users prefer. It is recommended for customers with prior experience adding third party software repositories from a command line.

1.2 Installing Bluecherry from the Bluecherry repository

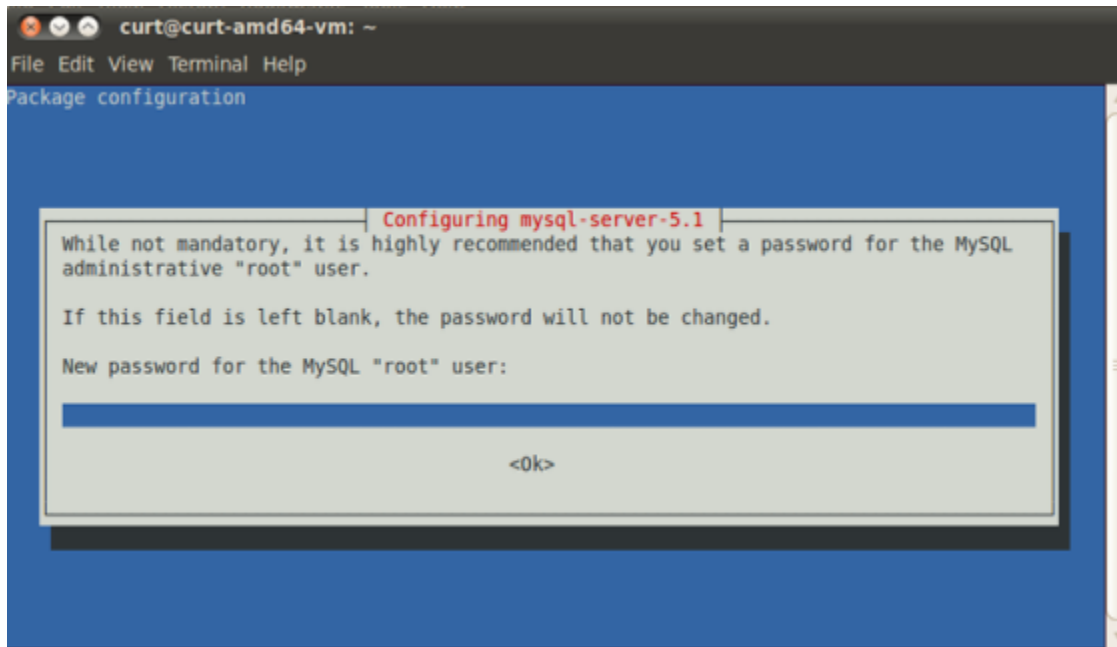
Download instructions

Currently version 3 is in beta which means 'unstable'.

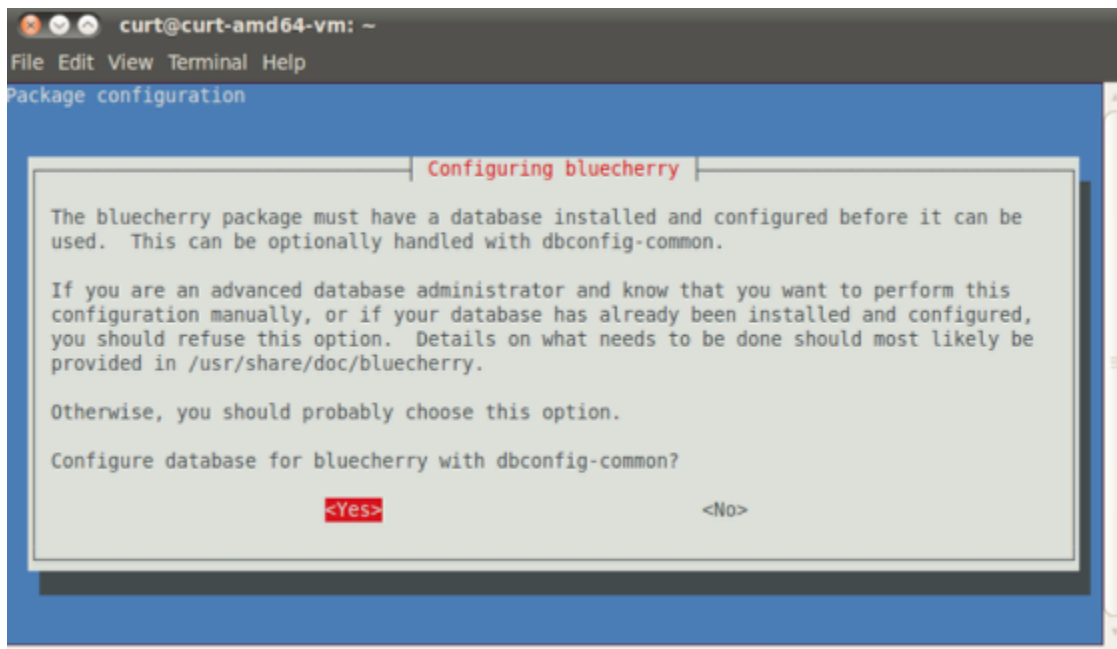
Copy and paste the commands to add our repository, or use the ISO to automate the install.

```
“ sudo bash -c “$(wget -O - https://dl.bluecherrydvr.com/scripts/install-unstable)”“
```

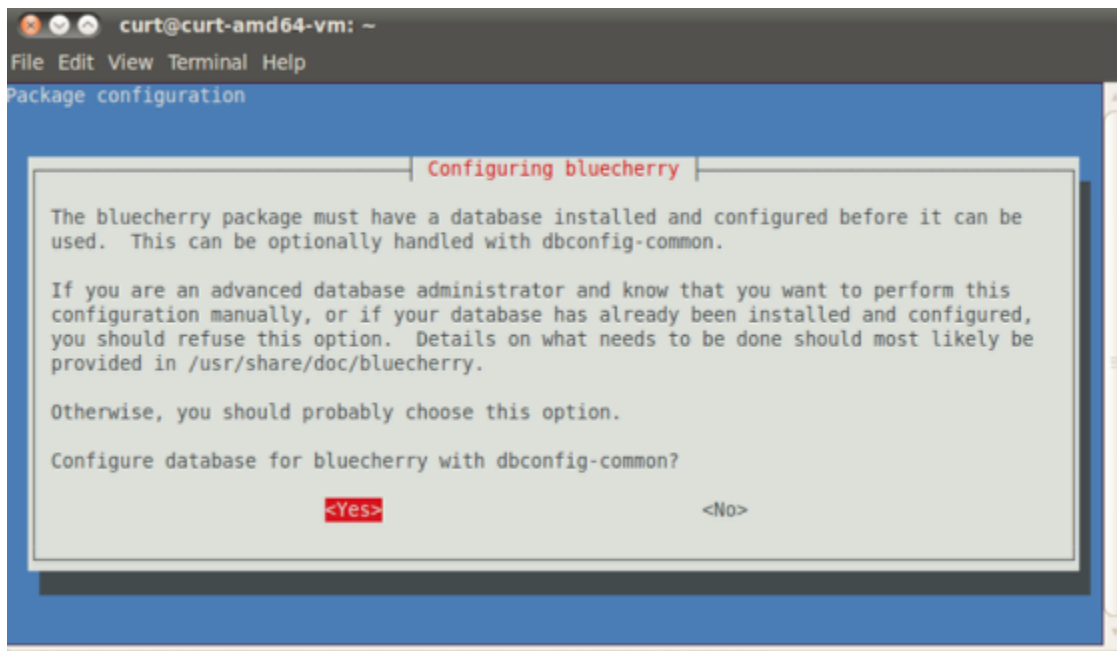
1.3 Installing the server



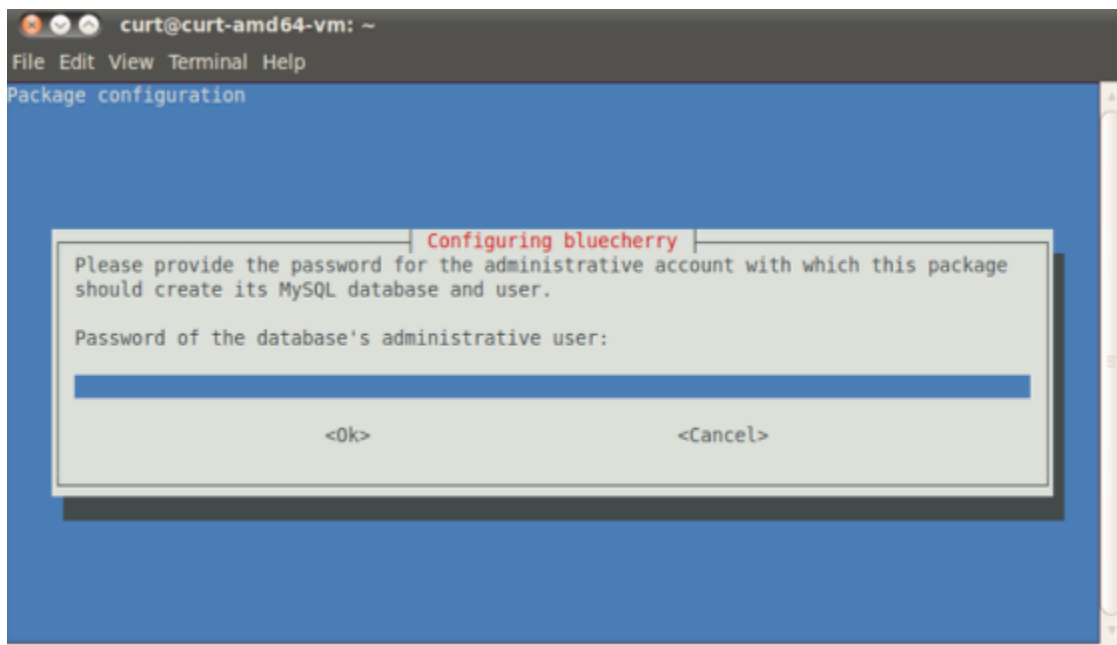
The instructions below assume you have received the download instructions, or installed from our CD installer.



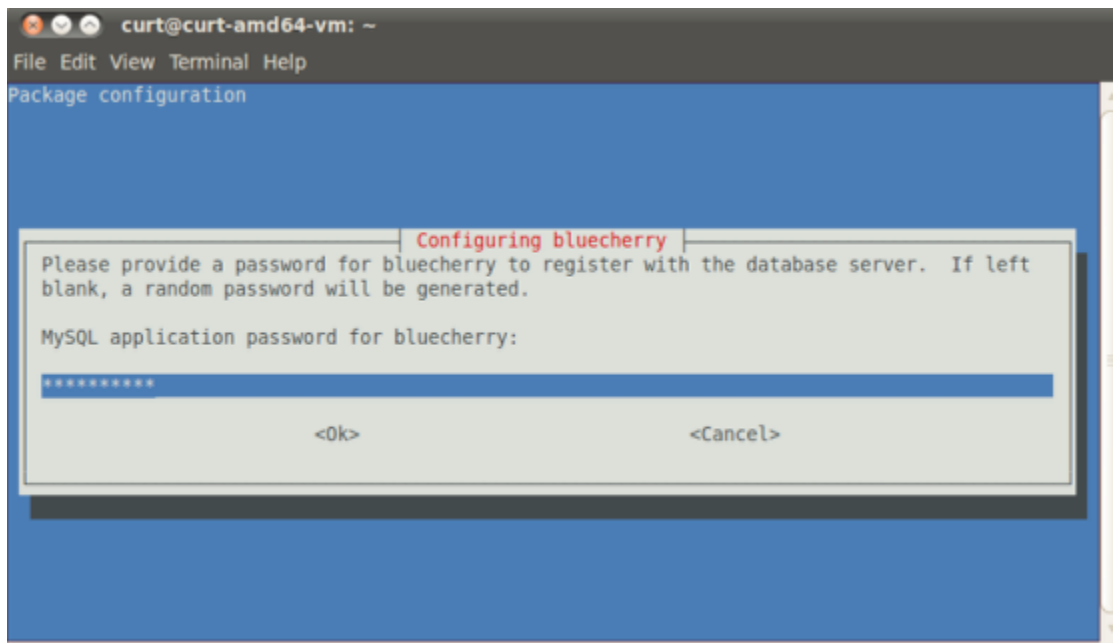
If you do not already have mysql-server installed you will be prompted to create a password for the 'root' MySQL account. While Ubuntu lists this as optional, it is recommended that you set a password.



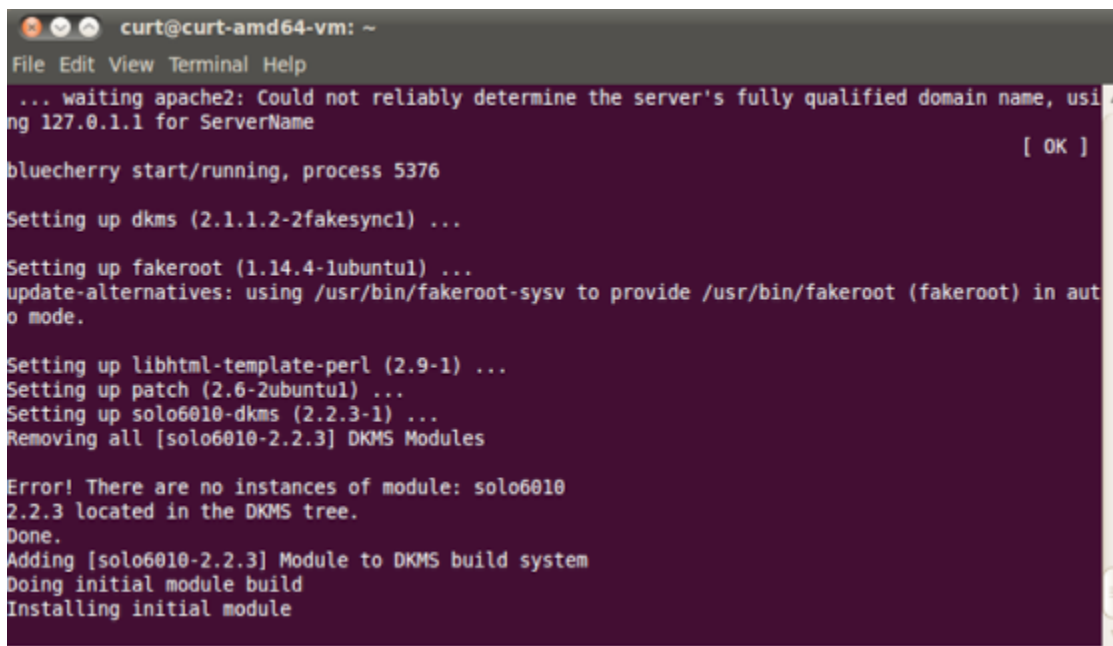
You will now be asked to configure Bluecherry. You must hit Yes, or the installation process will fail.



Enter the database administrative password that you set previously for the 'root' user.



Enter the password that you want to create for the bluecherry database. This can be the same password that you provided for the root MySQL account, but we recommend keeping the password unique. You will be asked to enter this password twice to verify the password matched.



At this point the bluecherry server will be installed. If you plan to install the client on the same system, then please follow the client installation guide.

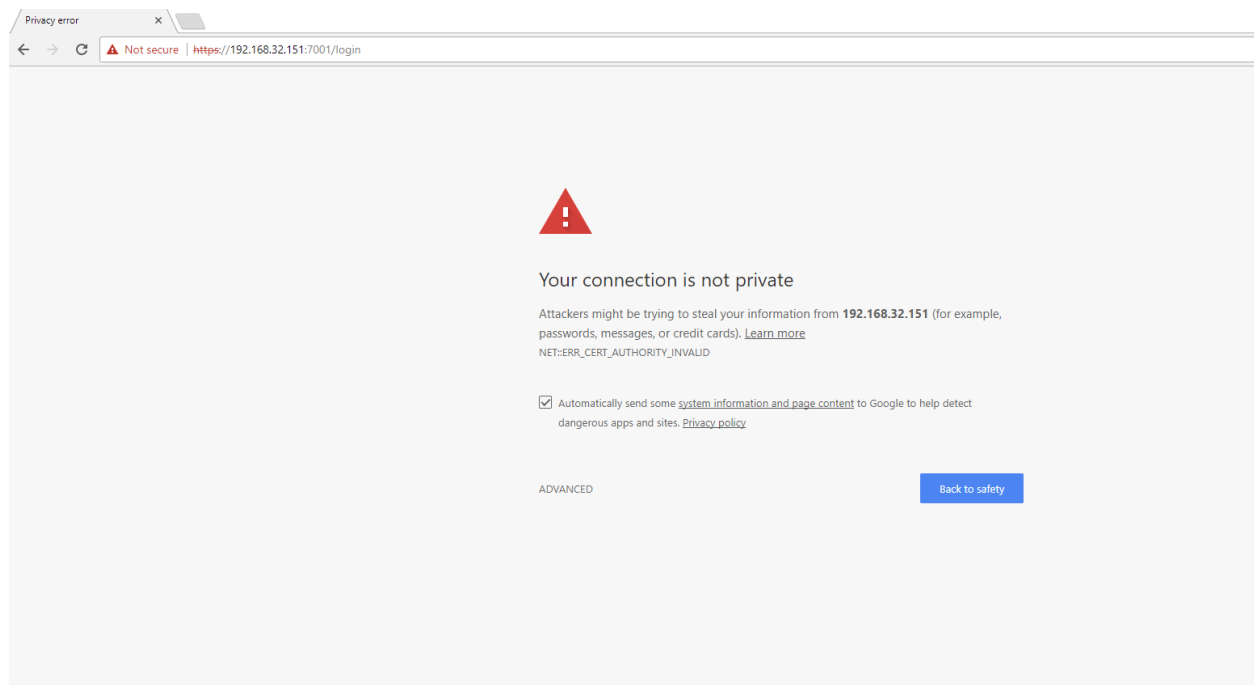
Setup and configuration

2.1 Logging in

Connect to the server with a web browser

By default the server runs on a port 7001, and requires SSL. You can access the server using <https://hostname:7001>

2.2 Navigating the web interface



1. Live View - Web based live view streaming
2. Playback - Watch recorded media
3. Download remote client - Links to www.bluecherrydvr.com/download for downloading the cross platform client
4. Documentation - Link to online documentation
5. Announcements - Recent updates and information
6. General settings - Change settings such as the name and location of the DVR, and outgoing SMTP email notifications
7. Storage - Easily add and manage storage
8. Users - Add and manage who has access to live view, recordings and individual cameras
9. Connected users - See who is currently connected to your system
10. Devices - Add and manage analog and IP cameras (Note: A Bluecherry hardware compression card is required for analog card support)
11. Global schedule - Easily select which days and hours your system will record. Choose between motion detection, continuous recording and no recording
12. Email notifications - Easily add email notifications rules based on time of day and selected cameras
13. Event statistics - Get statistics about the the camera recording schedule
14. Database backup - Create or restore a database backup
15. System Log - Easily view Bluecherry logs (both web and Bluecherry logs)
16. License Keys - Easily add license keys to expand your Bluecherry system
17. Server statistics - This section shows current CPU, memory and how long the system has been running.
18. Profile link - Here you can easily update your profile, reset your password, or simply logout

2.3 Adding / Managing network (IP) cameras

This section covers adding and managing analog cameras. A Bluecherry hardware compression card is required for use with analog cameras and our software.

Tip: It is recommended that you change the 'List Source' from 'Local' to 'Live' in General Settings -> Performance/connectivity. This will allow you to receive the last list of manufacturers and model numbers.

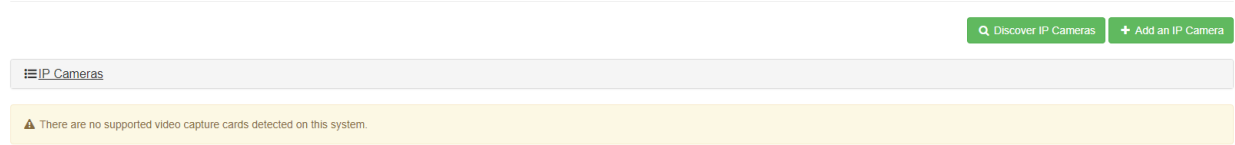
** image:: img/list-source.png

2.4 Manually adding network (IP) cameras

Select Devices from the menu

Devices

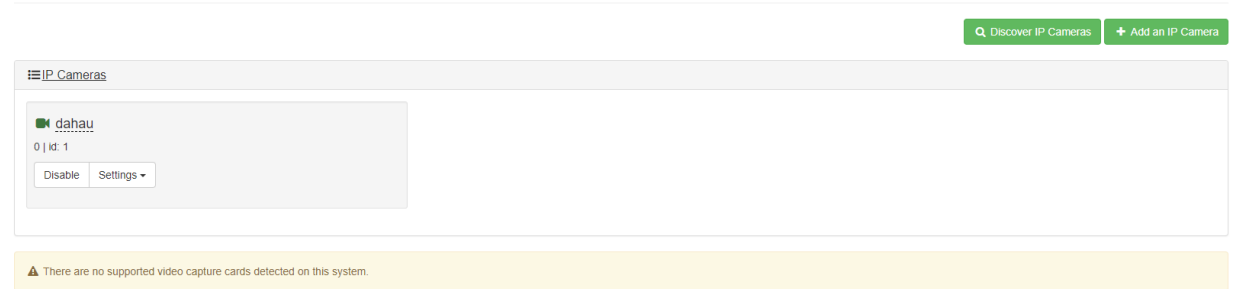
Total devices: 1



By default the ‘IP Cameras’ section is minimized.

Devices

Total devices: 1



Tip: Always make sure your IP cameras are set to a static IP. If the IP camera is setup with dynamic (DHCP) and the IP address changes Bluecherry will not be able to connect to the IP camera.

Devices -> Add an IP cameras

** image:: img/ipcamera-manual-add.png

If you already know the RTSP path you can select ‘Generic’ and update the Camera name (used in Bluecherry to show events), Camera IP or host, Username, Password.

Video source stream should always be RTSP, only use MJPEG if you know for sure what you are doing. Path to RTSP. This should always have a forward slash (/) followed by the RTSP path for the model of your IP camera (example - /media/video). A quick Google search can usually provide you the RTSP path, or use the manufacturer list above to try to populate this for you. RTSP port. *Most* IP camera manufacturers, with the exception of ACTi and some Hikvision cameras, use the default port of 554. Transport. Usually this is TCP, some manufacturers like ACTi use RTSP over UDP. ONVIF port. Defaults to port 80, currently not used by Bluecherry and added for future releases.

Once this you’ve completed this section click Add camera then test your configuration in the Bluecherry client or Bluecherry web interface. Optionally you can look at /var/log/bluecherry.log to see if the IP camera was successfully connected to by Bluecherry.

2.5 Automatic discovery of IP cameras

Select Devices from the menu

Devices

Total devices: 1

Discover IP Cameras

Add an IP Camera

IP Cameras

⚠ There are no supported video capture cards detected on this system.

By default the ‘IP Cameras’ section is minimized.

Devices

Total devices: 1

Discover IP Cameras

Add an IP Camera

IP Cameras

dahau

0 | id: 1

Disable Settings

⚠ There are no supported video capture cards detected on this system.

Warning: Currently this is still in development and may not work as expected and can take up to two minutes to run.

Devices -> Discover IP Cameras -> Find cameras

Add an IP Camera

⚠ Is your IP camera not in the list? We maintain a larger list of MJPEG and RTSP paths [here](#). If you run into problems, please <https://www.bluecherrydvr.com/chat/join> us on Slack (<https://www.bluecherrydvr.com/chat/>) and we'll try to add support for your camera.

Please choose manufacturer

Please choose manufacturer

Camera name

Camera IP or Host

Username

Password

advanced settings

Add camera

A list of the IP addresses and model numbers (if available) will be listed of any device that Bluecherry can autodetect. If your IP camera is NOT in this list then follow the Manually adding network (IP) cameras section.

Discover IP Cameras

<input checked="" type="checkbox"/> 192.168.86.200	HIKVISION DS-2CD2742FWD-IZS
<input type="checkbox"/> 192.168.86.143	
<input type="checkbox"/> 192.168.86.125	
<input type="checkbox"/> 192.168.86.133	
<input type="checkbox"/> 192.168.86.132	
<input type="checkbox"/> 192.168.86.127	
<input type="checkbox"/> 192.168.86.101	
<input type="checkbox"/> 192.168.86.29	

[Find cameras](#)[Add selected cameras](#)

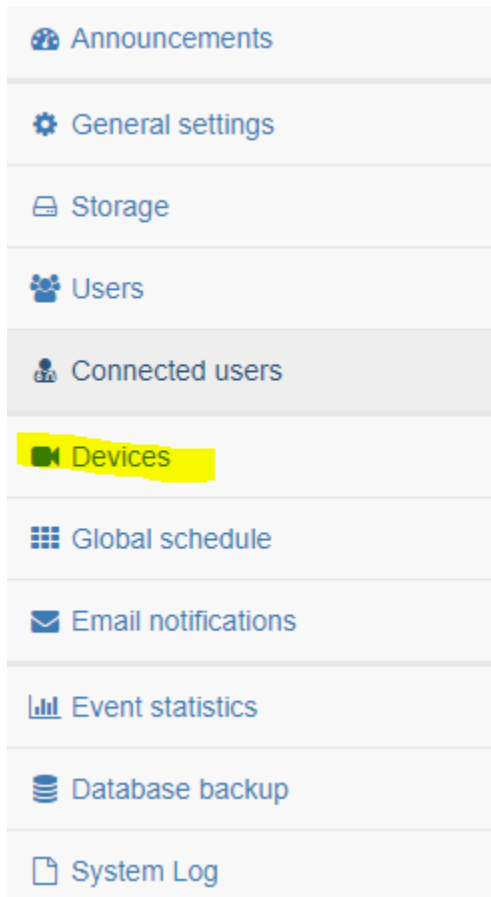
Click on the checkbox next to the camera you wish to add then click 'Add camera'

Discover IP Cameras

<input checked="" type="checkbox"/> 192.168.86.200	HIKVISION DS-2CD2742FWD-IZS	<input type="text" value="Admin"/>	<input type="text" value="admin"/>
--	-----------------------------	------------------------------------	------------------------------------

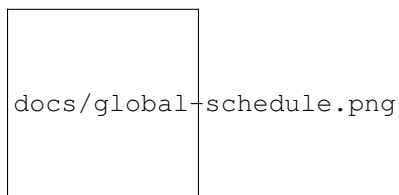
Complete the login and password for the camera then click 'Add selected camera'

Once this you've completed this section click Add camera then test your configuration in the Bluecherry client or Bluecherry web interface. Optionally you can look at /var/log/bluecherry.log to see if the IP camera was successfully connected to by Bluecherry.



2.6 Recording schedules

We support two types of schedules. The first is a global schedule and the second is a per-camera schedule. Both are covered below



Global schedule

Device recording schedule

[All devices](#) / [Global schedule](#)

✓ Save changes

Use these selectors to fill in the schedule below

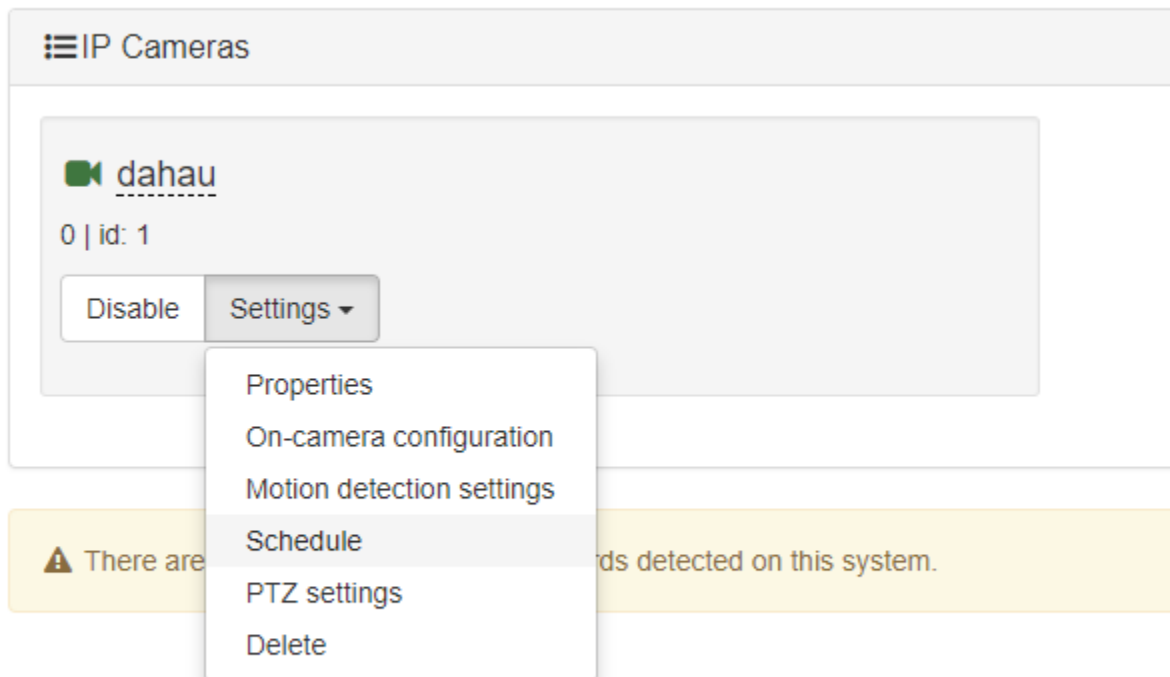
Off
Continuous
Motion
Trigger

Fill All

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Sunday																								
Monday																								
Tuesday																								
Wednesday																								
Thursday																								
Friday																								
Saturday																								

Select 'Motion' and then select all the grid locations (Assuming that you want motion detection 24×7×7).

2.7 Per-camera schedule



Under the Devices tab, select 'Schedule' under each camera that you want to enable a camera specific scheduled recording.

Device recording schedule

[All devices](#) / Recording schedule for camera: dahau

☒ Use device-specific schedule for this camera.

Save changes

Use these selectors to fill in the schedule below

Off

Continuous

Motion

Trigger

Fill All

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Sunday																								
Monday																								
Tuesday																								
Wednesday																								
Thursday																								
Friday																								
Saturday																								

Select the checkbox for ‘Use device-specific schedule for this camera’ and select the type of recording schedule you want and click ‘Save changes’

2.8 Adding users

DVR Users

Users currently registered in the DVR system.

Create New User

Full Name	Login	Email	Status
Bluecherry Admin	Admin		Admin

Select ‘Create New User’ to add a new user to the DVR system

✓ Save changes

Name

user's full name

Create new user

Login

login

Password

password

Emails

for email notifications

Phone

phone #

Admin access

administrative privileges

☐

Web access

viewer web access

☐

Remote access

remote client access

☐

Archived video

allow access to previous events

☐

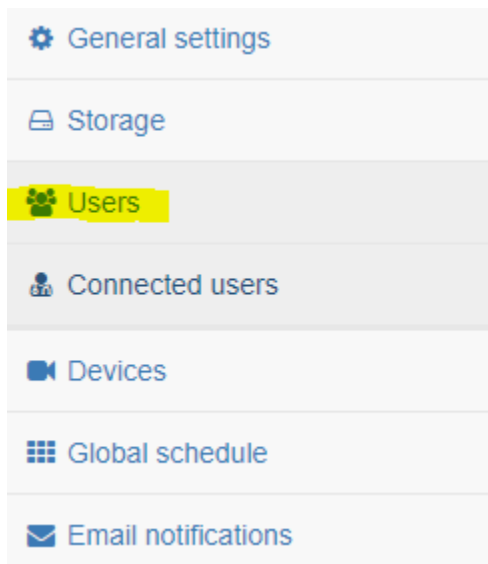
User notes

visible only to admin

Add email

Complete the form with the user specific information. It's usually recommended to have two administrator accounts, in case one user is delete or the password is forgotten.

2.9 Editing / viewing users



DVR Users

Users currently registered in the DVR system.

				+ Create New User
Full Name	Login	Email	Status	
Bluecherry Admin	Admin		Admin	✕

Click on user's Full Name. Note: To prevent you from accidentally removing yourself it is not possible for you to remove the account you are logged in as.

DVR users / Bluecherry Admin

[✕ Delete user](#) [Edit access list](#) [✓ Save changes](#)

Name

user's full name

Login

login

Password

password

Emails

for email notifications

Phone

phone #

Admin access

administrative privileges

Web access

viewer web access

Remote access

remote client access

Archived video

allow access to previous events

User notes

visible only to admin

☒
☒
☒
☒

[Add email](#)

You can the option to change any of the fields above, including the password. You can also add specific restrictions on what the user has access to. The notes section lets you add user specific notes.

2.10 Restrict cameras per user

Restricting access on a per-user basis

Full Name	Login	Email	Status	
Bluecherry Admin	Admin		Admin	✕
Joe Blow	joeblow	aaa@asa.aaa	Viewer	✕

From the ‘Users’ section click on any of the names in the list. For this example, we are going to pick on Joe Blow, who we do not trust.

User details: Joe Blow

[DVR users](#) / [Joe Blow](#)

✖ Delete user
👤 Edit access list

Name

Joe Blow

user's full name

Login

joeblow

login

Password

password

Emails

aaa@asa.aaa

for email notifications

Add email

Click ‘Edit access list’

User camera access permissions

[DVR users](#) / [Joe Blow](#) / [User camera access permissions](#)

✔ Save changes

✖ Restrict all

✔ Allow all

click on camera names to allow/restrict access

✖ dahau

****By default Joe Blow has access to all cameras. We do not want him to have access to cameras, simply click on the camera name. This will change the color of the camera from green (full access) to red (no access). Joe Blow will not see the camera in the available video devices, or in the event / search area. Changes are applied instantly. ****

2.11 System logs

****Select ‘System Log’ from the left menu bar **** .. image:: img/systemlog-select.png

This log shows everything that has been logged to /var/log/bluecherry.log and to /var/lib/bluecherry/www-error.log Note: These logs is randomly rotated, so it will likely not contain all of the logs since the server has started.

Download debugging information

```
Jan 12 18:21:51 dvr bc-server[882]: I(): Started bc-server 2.8.3 (toolchain 5.4.0 20160609) v2.7.6-107-g2d34023 tags/v2.8.3
Jan 12 18:22:04 dvr bc-server[882]: I(): SQL database connection opened
Jan 12 18:22:04 dvr bc-server[882]: I(): Found abandoned recording /var/lib/bluecherry/recordings/2018/01/11/000001/20-04-18.mkv, queued for length update
Jan 12 18:22:04 dvr bc-server[882]: I(): started processing abandoned recordings
Jan 12 18:22:04 dvr bc-server[882]: I(): Got machine id 'BQUU-C5HG' from DB
Jan 12 18:22:05 dvr bc-server[882]: I(): devname: ens33
Jan 12 18:22:05 dvr bc-server[882]: I(): machine_id: BQUU-C5HG
Jan 12 18:22:05 dvr bc-server[882]: I(): address: 00 0C 29 41 74 E6
Jan 12 18:22:05 dvr bc-server[882]: I(): Licensed for 4 devices
Jan 12 18:22:06 dvr bc-server[882]: I(): Updating length of 0 abandoned recordings
Jan 12 18:22:08 dvr bc-server[882]: I(): finished processing abandoned recordings
Jan 12 18:22:16 dvr bc-server[882]: E(1dahau): Failed to open stream. Error: -110 (Connection timed out)
Jan 12 18:22:16 dvr bc-server[882]: E(1dahau): Error starting device stream:
Jan 12 18:22:21 dvr bc-server[882]: I(): Updating length of 1 abandoned recordings
```

Bluecherry Server Log

Bottom lines to load...

scroll to bottom

scroll to top

2.12 Admin password reset procedure

In case you've lost or forgot Bluecherry server Admin password, you can change it to default in database.

```
mysql -u bluecherry -p bluecherry -e "update Users set password='b22dec1d6cfa580962f3a3796a5c0c0' salt='1234' where username='Admin';"
```

This resets the login to Admin and the password to bluecherry

CHAPTER 3

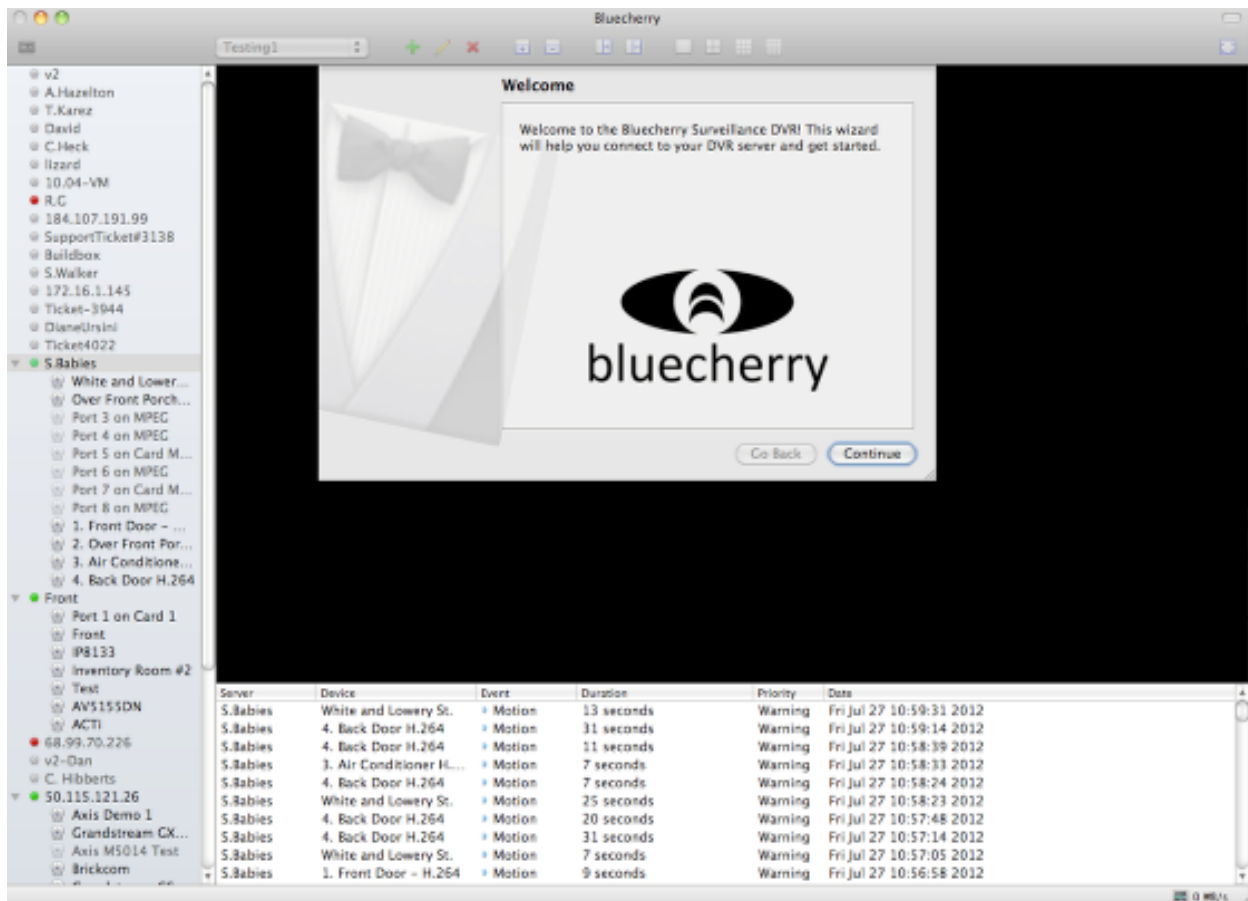
Setup of Bluecherry client

Client installation

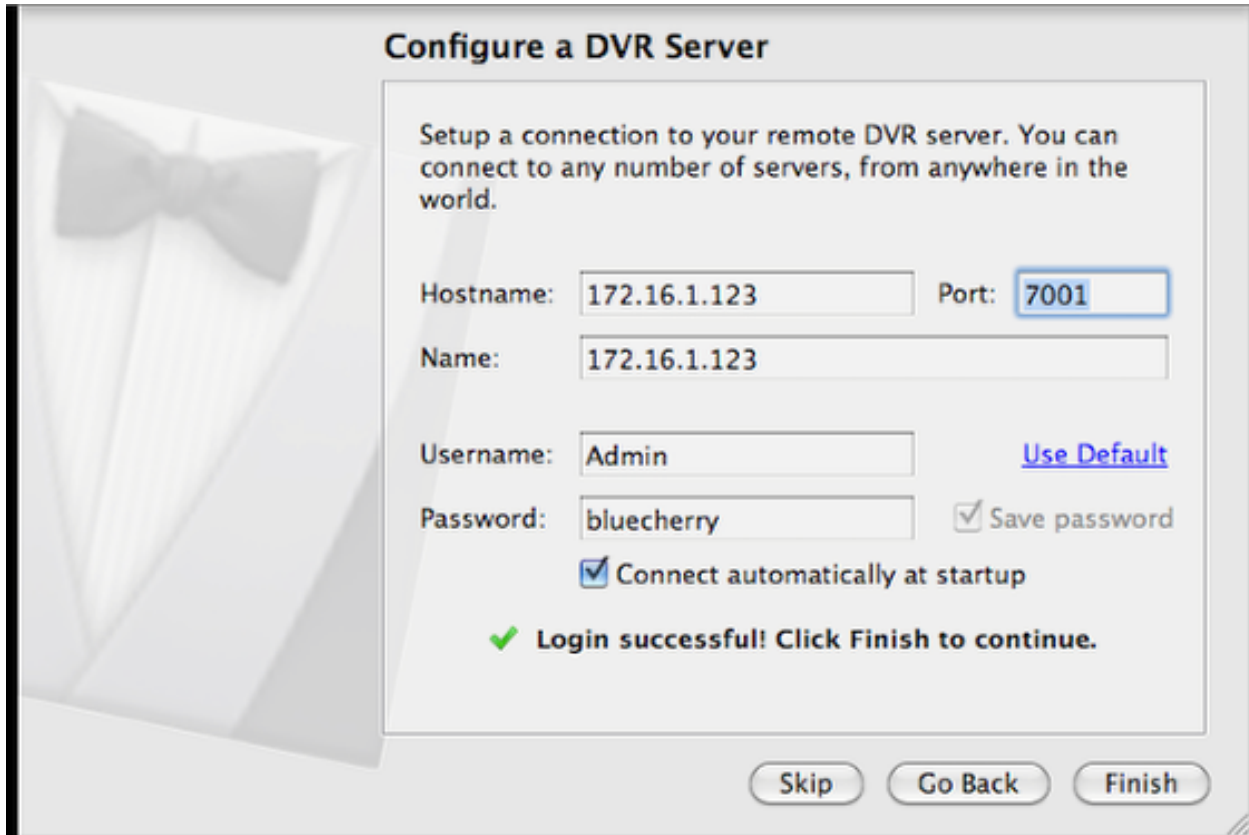
3.1 Installation

3.2 Connecting to a server

The next three steps will allow you to easily connect to an existing Bluecherry installation.



Enter the hostname or IP address of the Bluecherry server. The default login and password for new installations is 'Admin' and 'bluecherry' (no quotes). You can optionally click 'Use default' to have this information automatically entered for you.



Configure a DVR Server

Setup a connection to your remote DVR server. You can connect to any number of servers, from anywhere in the world.

Hostname: Port:

Name:

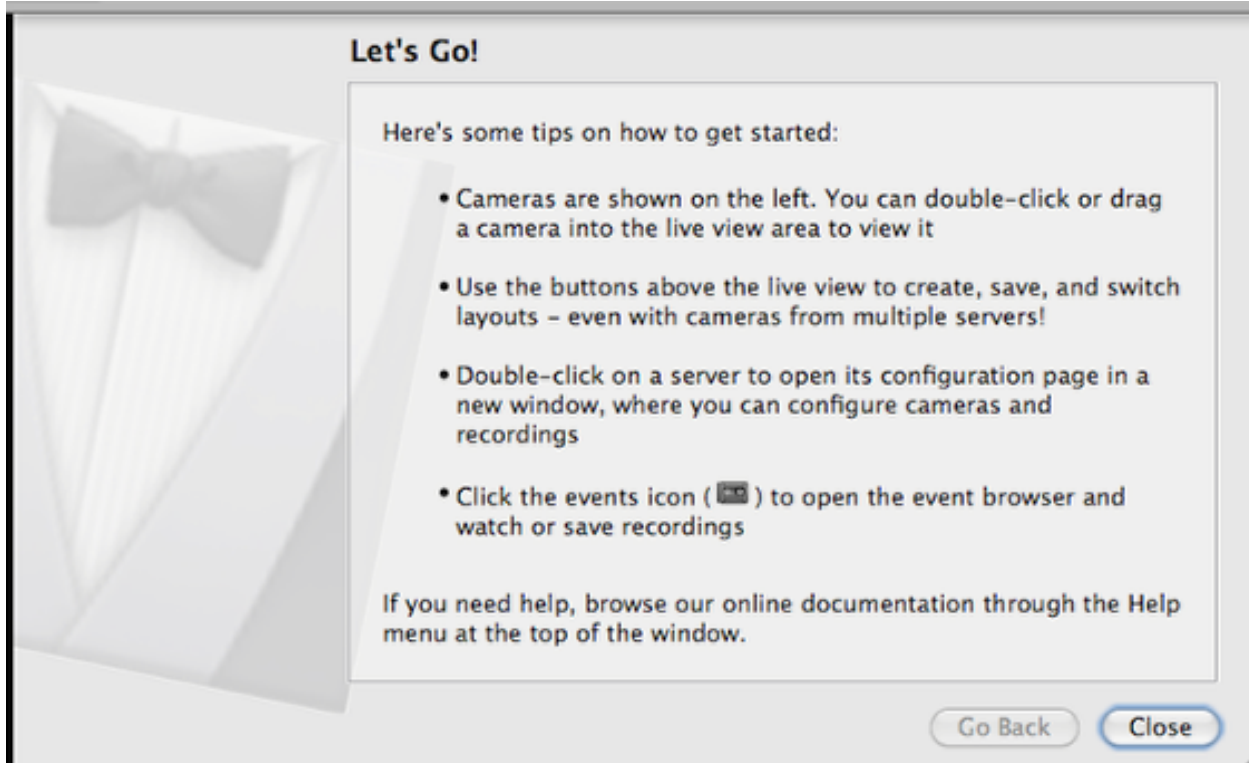
Username: [Use Default](#)

Password: ☒ Save password

☒ Connect automatically at startup


✔ Login successful! Click Finish to continue.

Finish by clicking 'close'



Let's Go!

Here's some tips on how to get started:

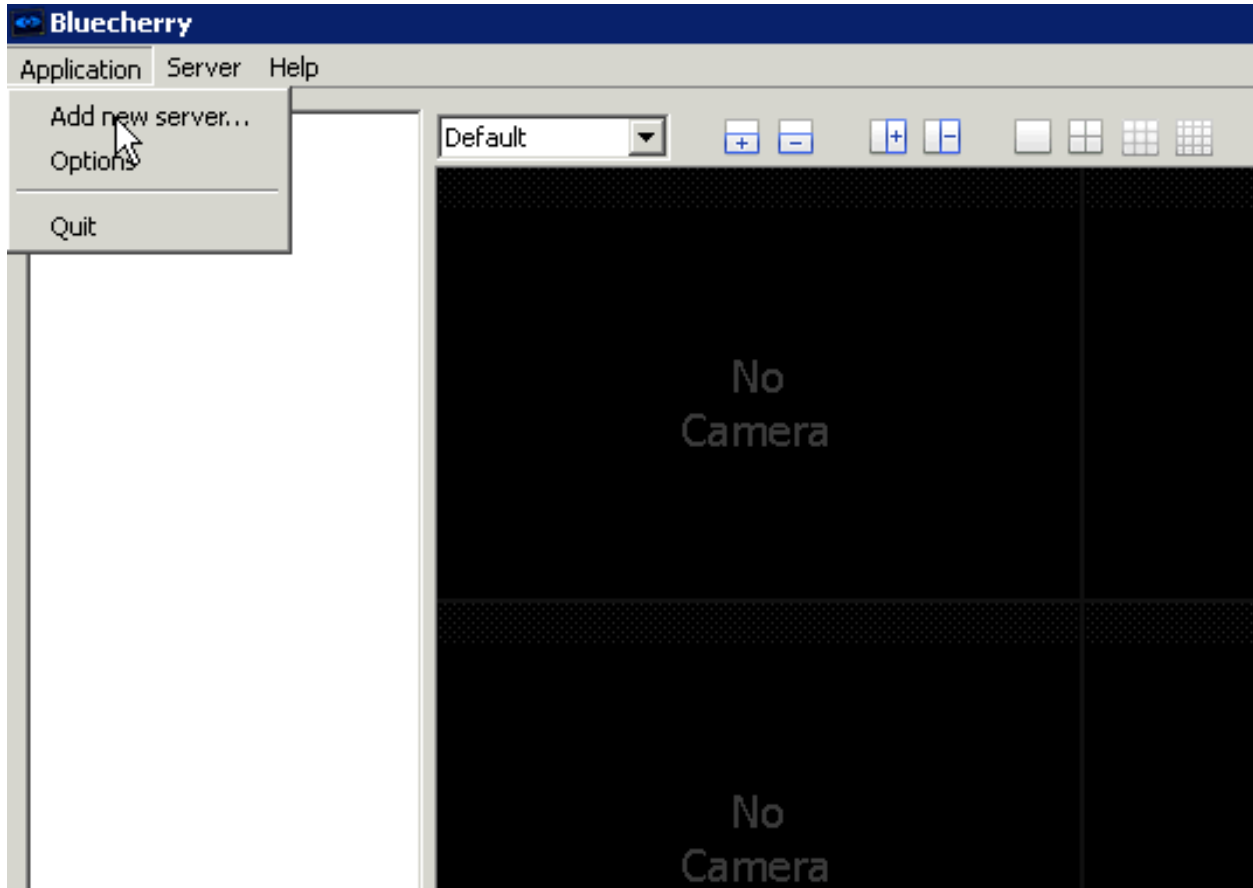
- Cameras are shown on the left. You can double-click or drag a camera into the live view area to view it
- Use the buttons above the live view to create, save, and switch layouts - even with cameras from multiple servers!
- Double-click on a server to open its configuration page in a new window, where you can configure cameras and recordings
- Click the events icon () to open the event browser and watch or save recordings

If you need help, browse our online documentation through the Help menu at the top of the window.

3.3 Adding your first server

The Bluecherry client can connect to multiple Bluecherry servers.

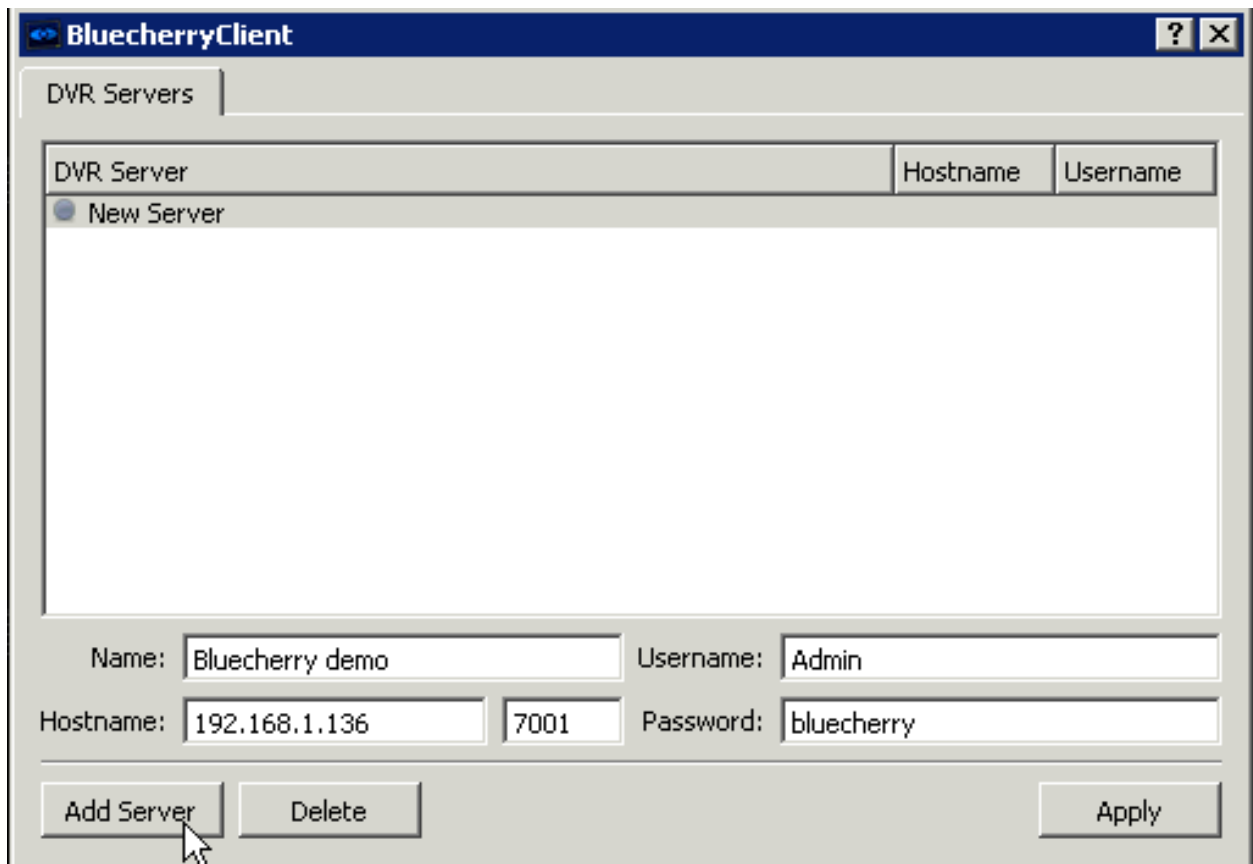
Inside the client click 'Add new server'



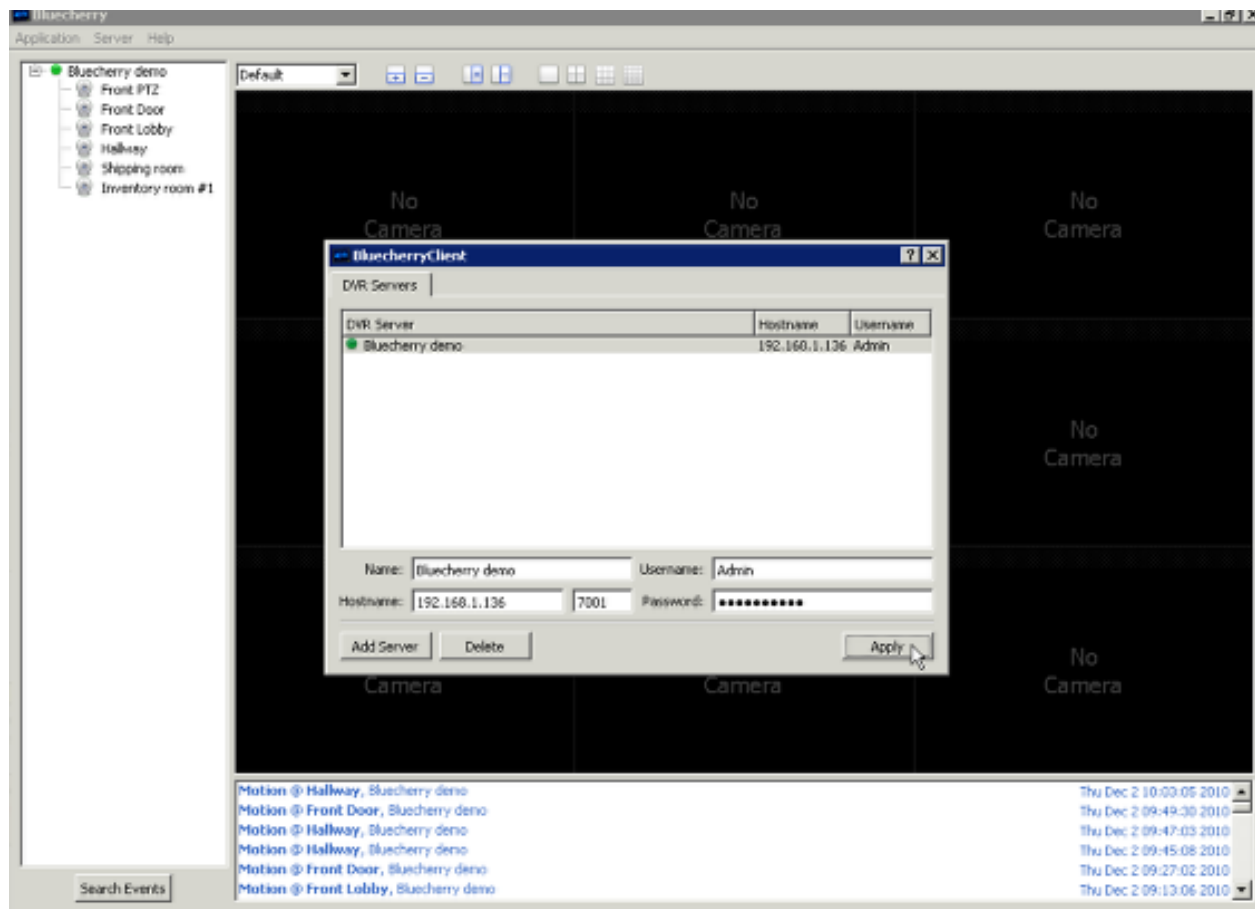
Enter your the name of the DVR, the hostname, and the login / password information for the Bluecherry version 2 system you are connecting to. The default port is 7001. You can add as many servers as you prefer to the client.

The default login for a new server is 'Admin' and 'bluecherry'.

If you are connecting remotely to a server behind a firewall or NAT make sure ports 7001 and 7002 are open.

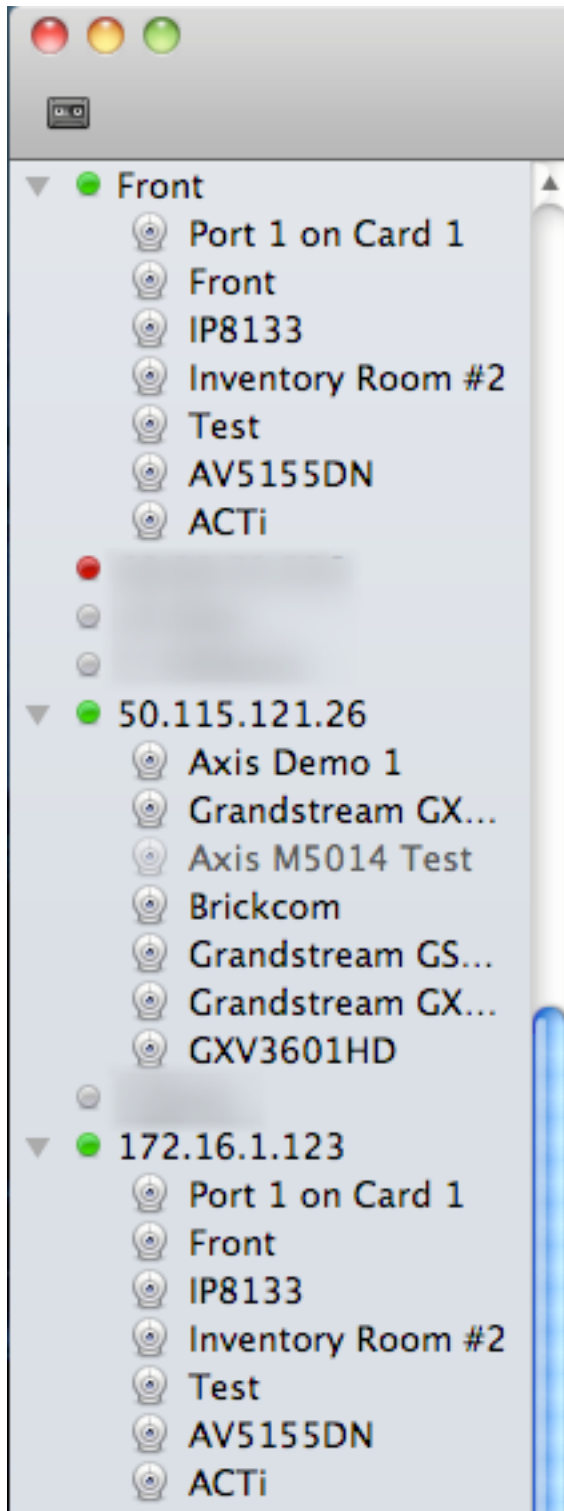


Once you select 'Apply' the client will automatically connect to the server. All cameras that are enabled and that you have access to will populate on the left side. All events will populate on the bottom part of the screen.

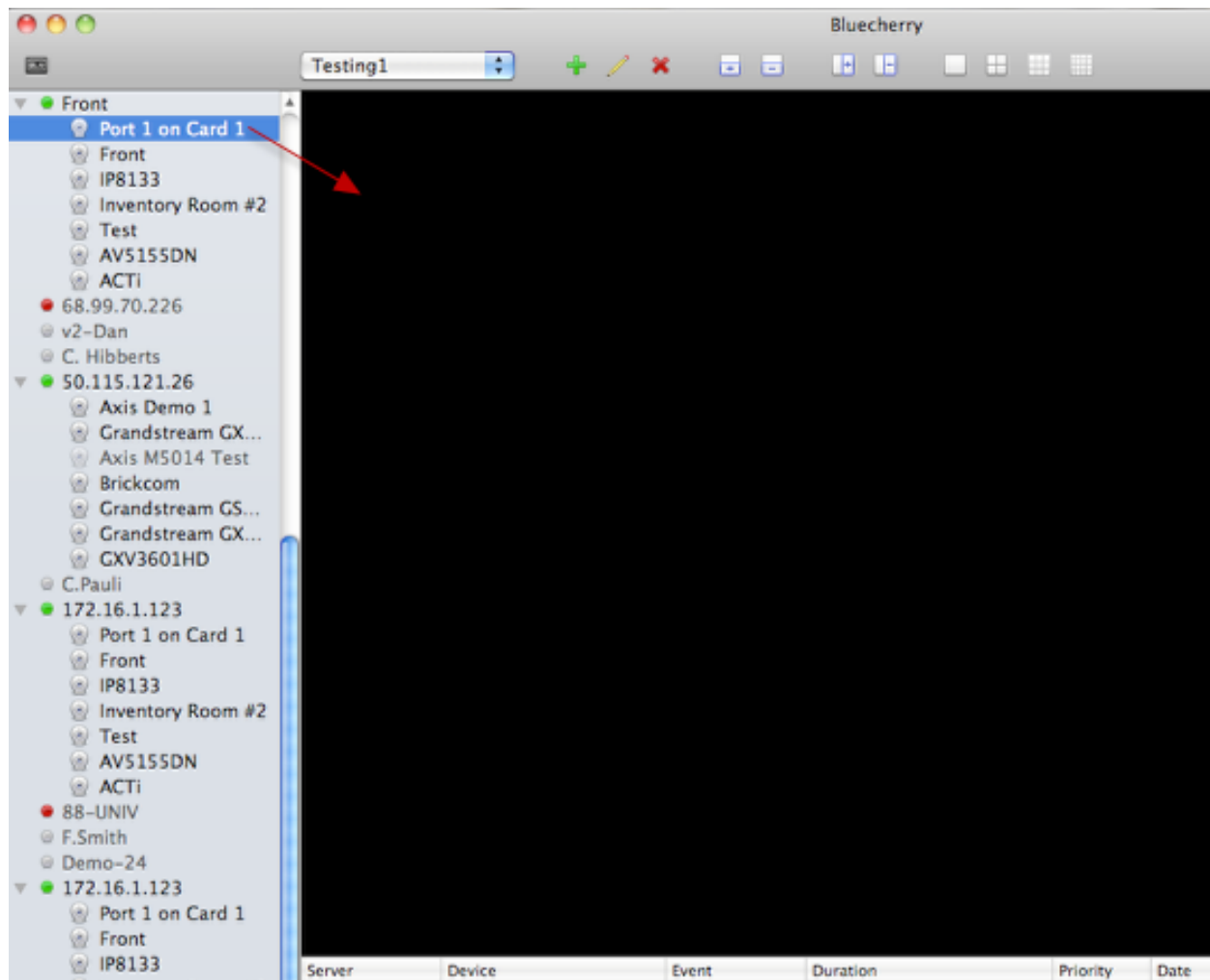


3.4 Adding cameras to the live view

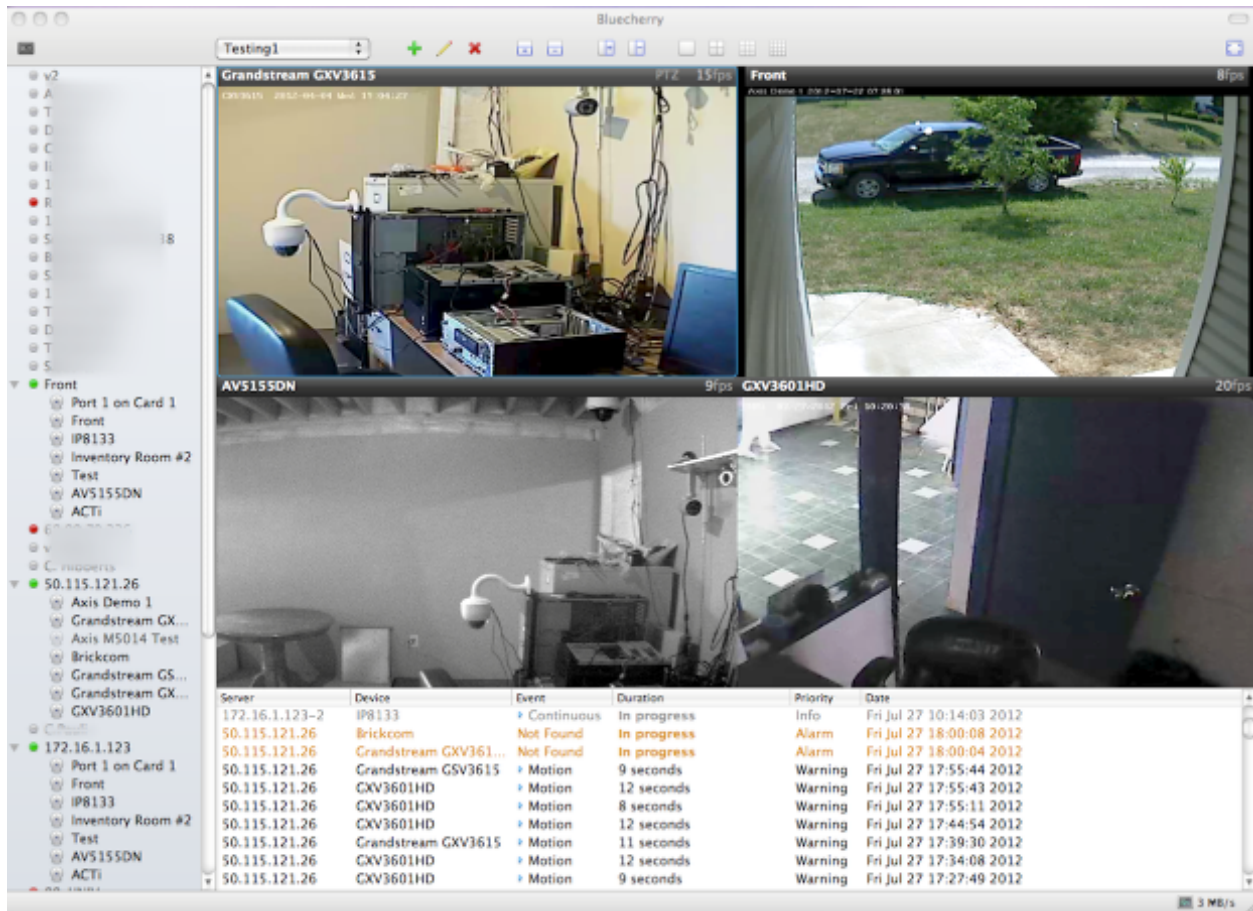
Once you have successfully connected to a Bluecherry server the list of available cameras will be displayed on the left.



Drag and drop cameras onto the live view area



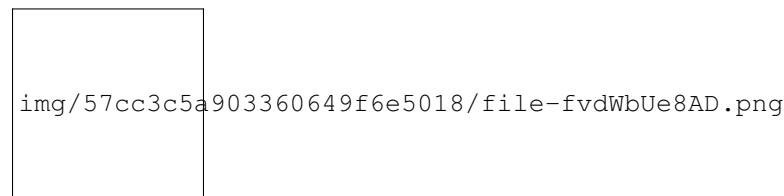
Select any camera from the left and drag it into the layout.



You can repeat this process on any camera or DVR that you have listed on the left side. Note: It's possible to connect as many clients together as you need, and mix and match the videos in different layouts.

Audio

Cameras with audio stream available are marked with the blue speaker icon. You can turn on audio by selecting "Enable audio" in the right-click menu of the selected camera.



When audio is enabled on one camera, it is disabled on all others, only the single camera stream can be listened at the same time.

If your camera supports audio, but the speaker icon does not appear in the live view area, please check that "Enable audio" checkbox is checked in camera properties of the Bluecherry server administration interface and audio stream is enabled in camera's own settings.

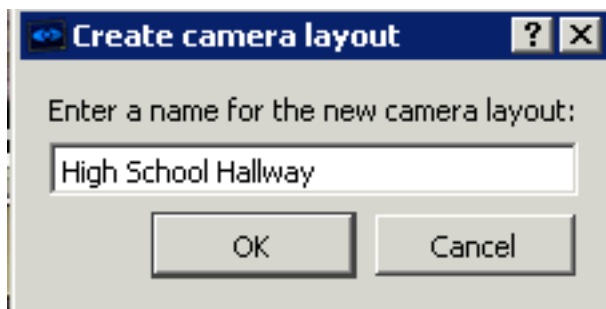
3.5 Layouts

We support several different methods of viewing your cameras. First, it's possible to create as many layouts as you need. For example, you are a school resource officer who wants to only watch the hallways of your school that has two Bluecherry DVR systems installed. You can create a new layout



First, it's possible to create as many layouts as you need. For example, you are a school resource officer who wants to only watch the hallways of your school that has two Bluecherry DVR systems installed.

First drag and drop the cameras into the layout that you prefer. Then click 'New Layout' and create a name for the new layout and click ok.



Pre-defined layouts

We provide four pre-defined layouts as seen in the box above. These are one channel, four channel, nine channel and sixteen channel layouts.



Create your own layout with rows and columns



3.6 Using Pan / Tilt / Zoom enabled cameras

A screen cast has been setup overviewing how to use the Pan / Tilt / Zoom options in Version 2.

<https://www.youtube.be/-4YeH3UCUCA>

3.7 Viewing previously recorded events

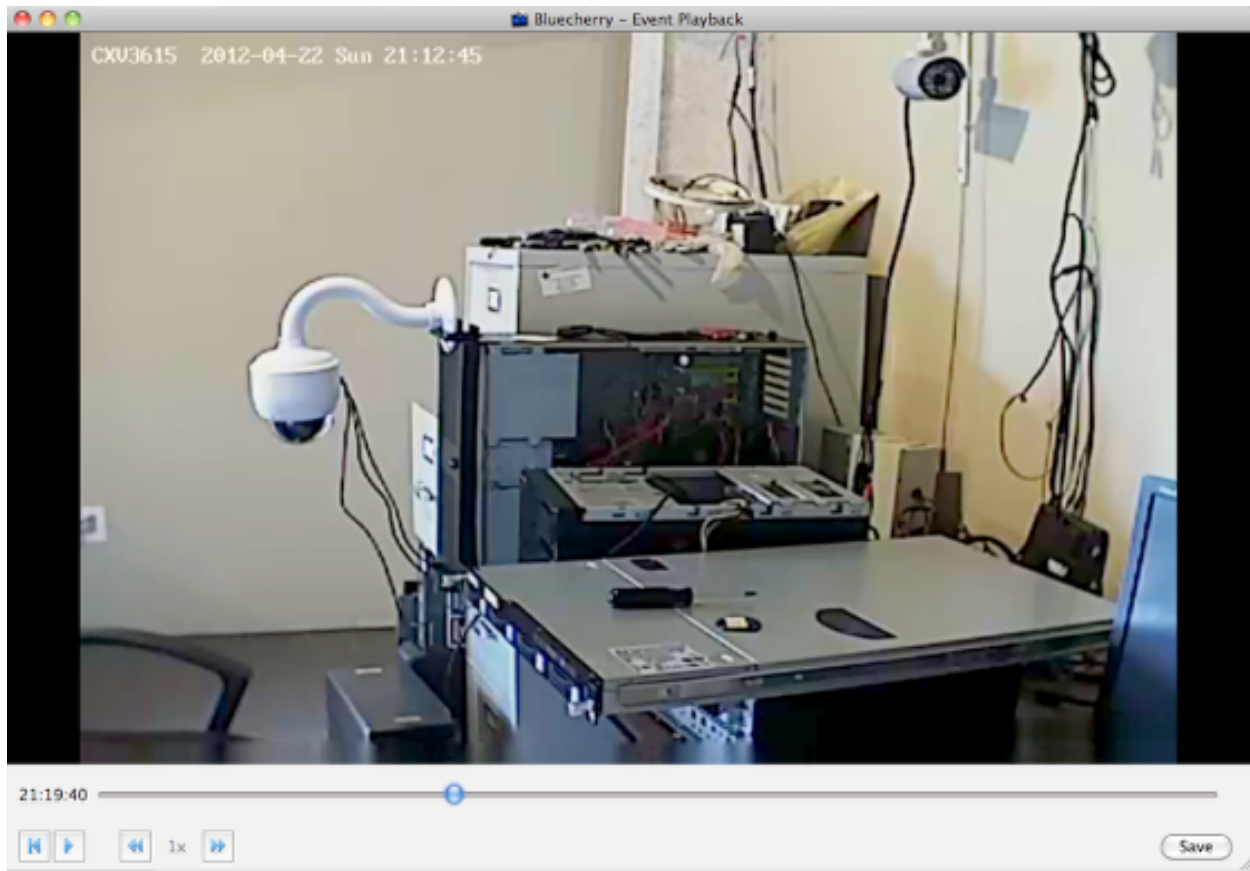
By default all events from all connected servers will display in this list. Cameras that are enabled but can not be accessed (camera offline, etc) will be highlighted in orange and in the Event column it will be listed as 'Not Found'

Server	Device	Event	Duration	Priority	Date
172.16.1.123	Inventory Room #2	Continuous	In progress	Info	Tue Aug 14 12:24:25 2012
172.16.1.123	Port 1 on Card 1	Continuous	In progress	Info	Tue Aug 14 12:24:04 2012
172.16.1.123	AirCam	Continuous	In progress	Info	Tue Aug 14 12:24:03 2012
172.16.1.123	ACTi	Continuous	In progress	Info	Tue Aug 14 12:24:02 2012
172.16.1.123	IP8133	Continuous	In progress	Info	Tue Aug 14 12:23:57 2012
172.16.1.123	AV515SDN	Continuous	In progress	Info	Tue Aug 14 12:23:17 2012
172.16.1.123	AV515SDN	Not Found	13 seconds	Alarm	Tue Aug 14 12:23:04 2012
172.16.1.123	AV515SDN	Continuous	55 seconds	Info	Tue Aug 14 12:22:09 2012
50.115.121.26	Grandstream GKV3615	Continuous	In progress	Info	Tue Aug 14 21:19:40 2012
172.16.1.123	Front	Motion	13 seconds	Warning	Tue Aug 14 12:19:27 2012

Hovering over an event will show detailed information about that event

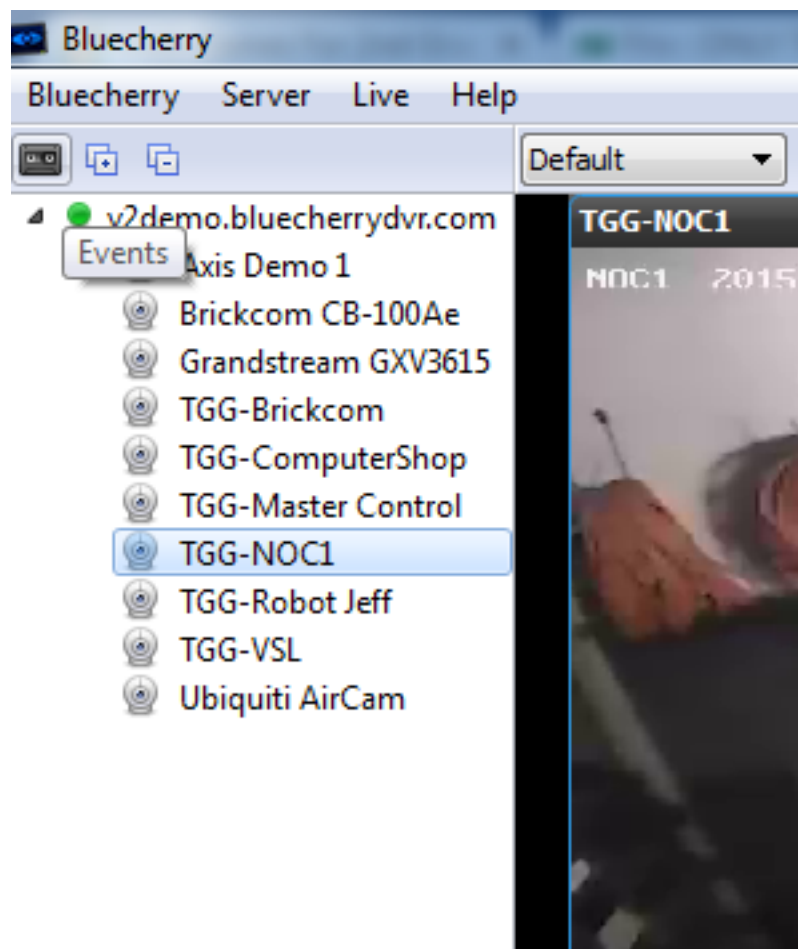
Server	Device	Event	Duration	Priority	Date
172.16.1.123	Inventory Room #2	Continuous	In progress	Info	Tue Aug 14 12:24:25 2012
172.16.1.123	Port 1 on Card 1	Continuous	In progress	Info	Tue Aug 14 12:24:04 2012
172.16.1.123	AirCam	Continuous	In progress	Info	Tue Aug 14 12:24:03 2012
172.16.1.123	ACTi	Continuous	In progress	Info	Tue Aug 14 12:24:02 2012
172.16.1.123	IP8133	Continuous	In progress	Info	Tue Aug 14 12:23:57 2012
172.16.1.123	AV515SDN	Continuous	In progress	Info	Tue Aug 14 12:23:17 2012
172.16.1.123	AV515SDN	Not Found	13 seconds	Alarm	Tue Aug 14 12:23:04 2012
172.16.1.123	AV515SDN	Not Found (Alarm)	55 seconds	Info	Tue Aug 14 12:22:09 2012
50.115.121.26	Grandstream GKV3615	Continuous	In progress	Info	Tue Aug 14 21:19:40 2012
172.16.1.123	Front	Motion	13 seconds	Warning	Tue Aug 14 12:19:27 2012

Double clicking on the event will pull up the video. At this point you can play and fast forward / rewind the event.

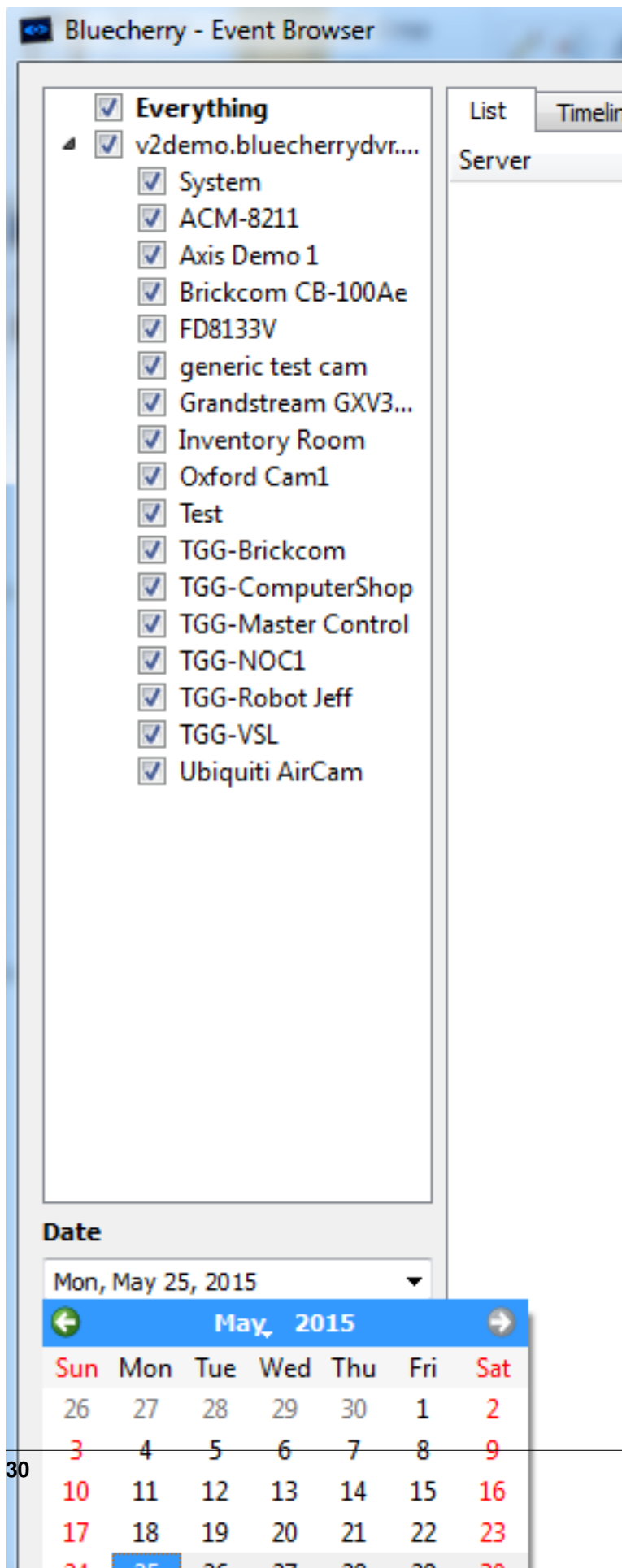


3.8 Searching events

By default the list of events under the main live view window are limited to just a few hours. To access all of the events select 'Events' in the top left corner of the UI.



From the screen below you can select the camera(s) you want to view events on, along with the date. You can also filter by event types (motion, continuous, alarm, etc)



Once you select the date click **Load events**, this is a very important step, otherwise the server will not display any events.

Developer documentation

API

Using the Bluecherry API to control or view a camera requires knowing the device ID. Currently this can be found in the XML file.

Note: The XML file will only generate the device IDs that the user has access to. Make sure you have access to all cameras, or that you are using an administrator login if you plan on controlling all cameras.

```
https://login:password@bluecherry-server/ajax/devices.php?XML=true&short=true
```

4.1 Live viewing

RTSP (TCP) connection

```
rtsp://login:password@bluecherry-server:7002/live/$deviceid
```

Return Multi-part JPEG (MJPEG)

Once you obtain the device id, you can obtain a multi-part JPEG image from this URL:

```
https://login:password@bluecherry-server/media/mjpeg.php?  
id={camera_id}&multipart=true
```

Return single image (JPEG)

Obtain one image from the server: `https://login:password@bluecherry-server/media/mjpeg.php?id={camera_id}`

4.2 Controlling PTZ cameras

Below is a example URL for controlling a Pan / Tilt / Zoom camera through the Bluecherry API.

`https://login:password@bluecherry-server/media/ptz.php?id={camera_id}&command={command}&pan`

Supported Pan / Tilt / Zoom commands:

query – display XML with camera information/PTZ capabilities and presets
move – pan/tilt/zoom using parameters
stop – stop movement
save – save present
rename – rename a preset
go – go to specified preset
clear – clear preset

Pan / Tilt / Zoom Variables:

preset_id – id of the preset
preset_name – new preset name
speed: pan/tilt speed
pan_command: (l)eft / (r)ight
tilt_command: (u)p / (d)own
zoom_command: (t)ight / (w)ide
duration: for how long to execute command; -1 for continuous

4.3 Trigger recordings

Trigger recording:

`https://login:password@bluecherry-server:7001/media/trigger.php?camera_id={camera_id}&description=TEST`

Camera must be set to Trigger ('T') in the recording schedule. Description will show in the logs that a trigger was recording with the description you inserted.