Freedom Client (64bit) Multi-Monitor Setup Guide

This guide outlines the options for configuring multiple display monitors in Freedom VMS and understanding the limitations. Multi-monitor support is supported in the 64bit version of the Freedom Client app.

Up to 4 monitors are supported, 3 of which support video display, the 4th is for eMaps.

A total of 68 cameras can be displayed (36+16+16+eMap).

In Multi-Monitor Setup, monitors can be setup to operate in 1 of 5 modes, and these can be configured to open on the monitor of your choice. The modes are listed below:

- **Master:** Can display 36 cameras and is the control/setup monitor (can only be 1 'master')
- **Master & Playback:** can display 36 cameras and change to the Playback GUI when required.
- **Video Group:** Display up to 16 cameras per monitor. 2 monitors can be set as 'Video group'.
- **Playback**. Displays Playback/footage review GUI permanently on this monitor.
- **eMaps**. Monitor dedicated to displaying eMaps.(this monitor should be located next to the monitor configured as 'Master' or 'Master & Playback')

The 'Master' monitor

The 'Master' and 'Master & Playback' monitor is the only monitor that contains the bottom right Setup & control buttons, as pictured on the right. When physically mounting your monitors, it's very important that the 'Master' monitor be directly next to the eMap monitor. Emap hyperlinks can only be displayed on the 'Master' monitor. You can configure the 'Master' monitor to display a camera group of up to 36 cameras.

'Video Group' monitors

Can be configured to open a camera group of up to 16 cameras. You can configure 2 monitors as 'Video Group' monitors.

Understanding Resource Limitations

Unlike traditional SD Analogue camera systems, HD camera systems utilise much more CPU power to decode and display multiple HD video streams as well as requiring higher network bandwidth. The amount of HD cameras that can be displayed at the same time or in a 'camera Group' is limited to the viewing PCs CPU processing power, the network bandwidth and the network latency.
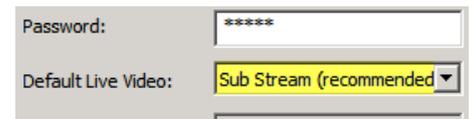
When displaying HD video, careful consideration should be given to how many HD cameras can be displayed without exceeding the limitation of the viewing PCs CPU and the network link bandwidth and latency performance.

A general rule of thumb is the CPU usage percentage should not exceed 70% consistently. The CPU usage can be viewed in the lower left status window on the Freedom 'Live view' GUI. (pictured right)
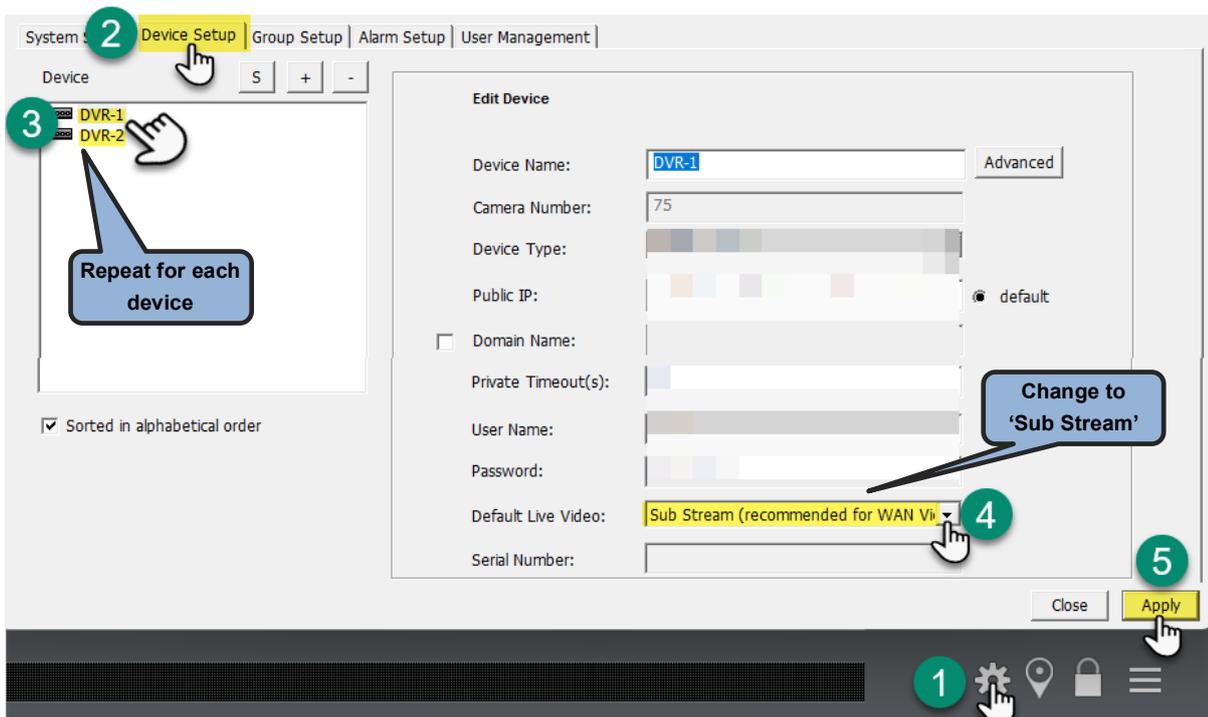

If the CPU limit or network bandwidth is being exceeded there are a few options available.

- Reduce the amount of HD cameras being displayed at any one time.
- Change the 'Default Live Video' option to use the lower quality 'Sub Stream'
- Reduce the resolution, bitrate or framerate of the cameras
- Upgrade your PC hardware and, or network infrastructure

Changing Default Live Video to 'Sub-Stream'

To change default live video to 'Sub-Stream' click on the cog icon to enter setup, then click the Device-Setup tab. Follow the steps pictured below.

Understanding the Rules for Freedom Multi-Monitor deployment

There are a few rules that you need to be aware of before using multiple monitors.

- You must use the 64 bit version of Freedom Client software
- You can have up to 68 cameras (36+16+16)   [subject to CPU and network limitations]
- 'Master' monitor can display up to 36 cameras, a 'Video group' can display up to 16 cameras
- You cannot display the same camera on multiple video tiles.
- eMap hyperlinks only work on 'Master' monitor (cannot open or drag to a 'Video group' monitor
- Only one monitor can be selected to open the Playback module.
- Only one monitor can be selected to open eMaps.
- Only one monitor can be selected to open the 'Master' (Control GUI)
- A maximum of 3 monitors can be used to display cameras live.
- Only 2 monitors can be selected as 'Video Group'
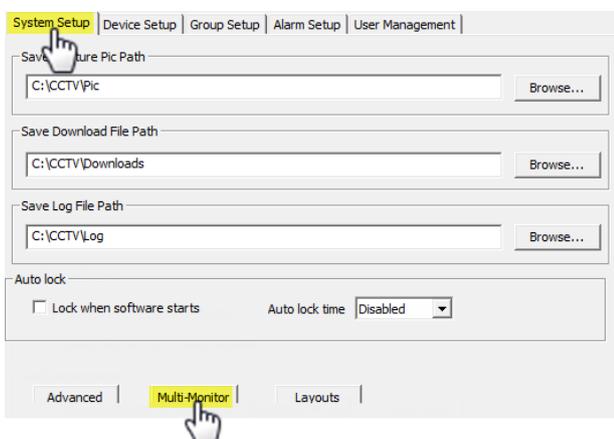- Alarm Groups/notifications can only open in the monitor selected for 'Master' module.

Setting up what appears on each monitor

You must have 'Setup rights' to configure multi monitor.

Multi-Monitor setup allows you to configure what elements or modules open automatically when the software starts, on what monitor and if it opens in 'full screen' or not.
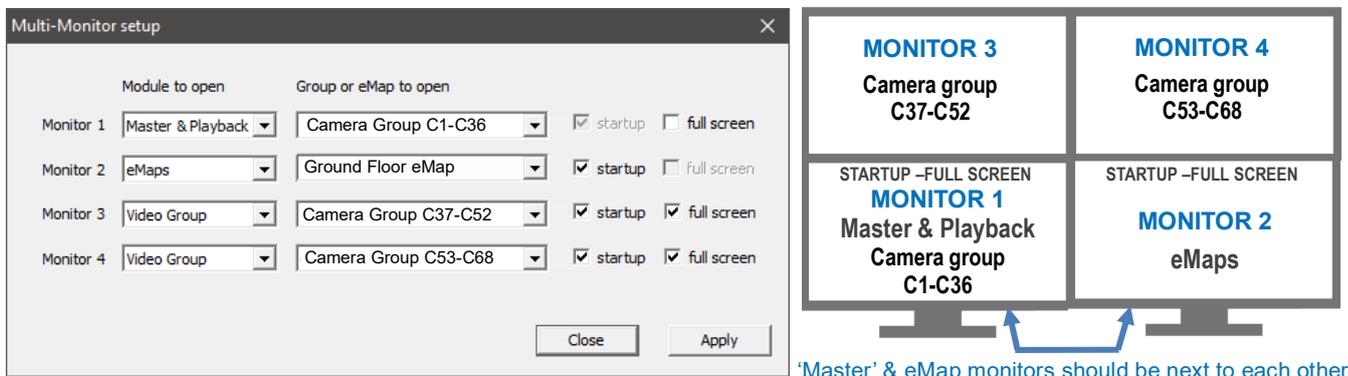
A 'Video Group' is simply a 'camera group' so you need to configure all your camera groups before configuring Multi Monitor..

To navigate to Multi-Monitor setup click the 'Setup' button (cog) on the bottom right of the Live view interface. Then under 'System Setup' click on the 'Multi-Monitor' tab located near the bottom of the window. (see below)
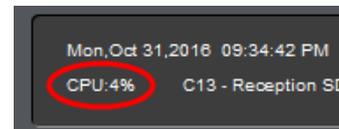

Note: The labels for 'Monitor 1/2/3/4' in Freedom VMS may not always reflect what the Windows™ OS defines as monitor 1,2,3 etc. additionally, if a display monitor loses power or the cable is dis-connected while Freedom VMS is running, the Windows™ OS or your GPU may re-assign monitor display/contents to another monitor which in turn may cause Freedom GUI elements move to another monitor. If this occurs, you may need to restart the Freedom VMS software to restore monitor configuration.

In the example below we are using 4 monitors, monitor 1,3,4 are displaying video groups. Monitors 3 and 4 are set to open in full screen for maximum viewing size. The 'Master' monitor (1) is NOT set to 'full screen' mode. Monitor 2 is configured to display the 'Ground Floor' eMap.

After configuring click 'Apply' then restart the Freedom VMS software.

IMPORTANT!: after restarting the software and waiting for the cameras to appear, look at the CPU monitor in the bottom left of the Live view interface and ensure it is not exceeding 70% continually, if so this indicates your PC CPU is not capable of viewing this many HD cameras in main-stream.

If the CPU is not being exceeded but not all cameras appear, this may indicate that either your network is not capable of supporting this many cameras, or your camera groups are not setup correctly, for example, some camera groups may have the same camera configured in multiple camera groups, in this case only one instance of the camera will be displayed, the other will be a blank tile.

Manually opening Video Groups

If you have closed a Video Group, you can manually open it again by clicking the hamburger menu on the 'Master' monitor GUI and selecting the Video Group you wish to re-open.