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2015

Building Stable IP Surveillance Networks

The Cause for Instability

The following are the major reasons for camera instability. Special attention are needed during IPCAM installations and network design. Please follow the suggestion in this guide to achieve stable video network.

Power or ESD Issues

Can damage the hardware or cause the device to reset to default.

Network Issues

Cause video delays, frame rate drop, lost connections, or slow access to devices

Power and ESD Issues

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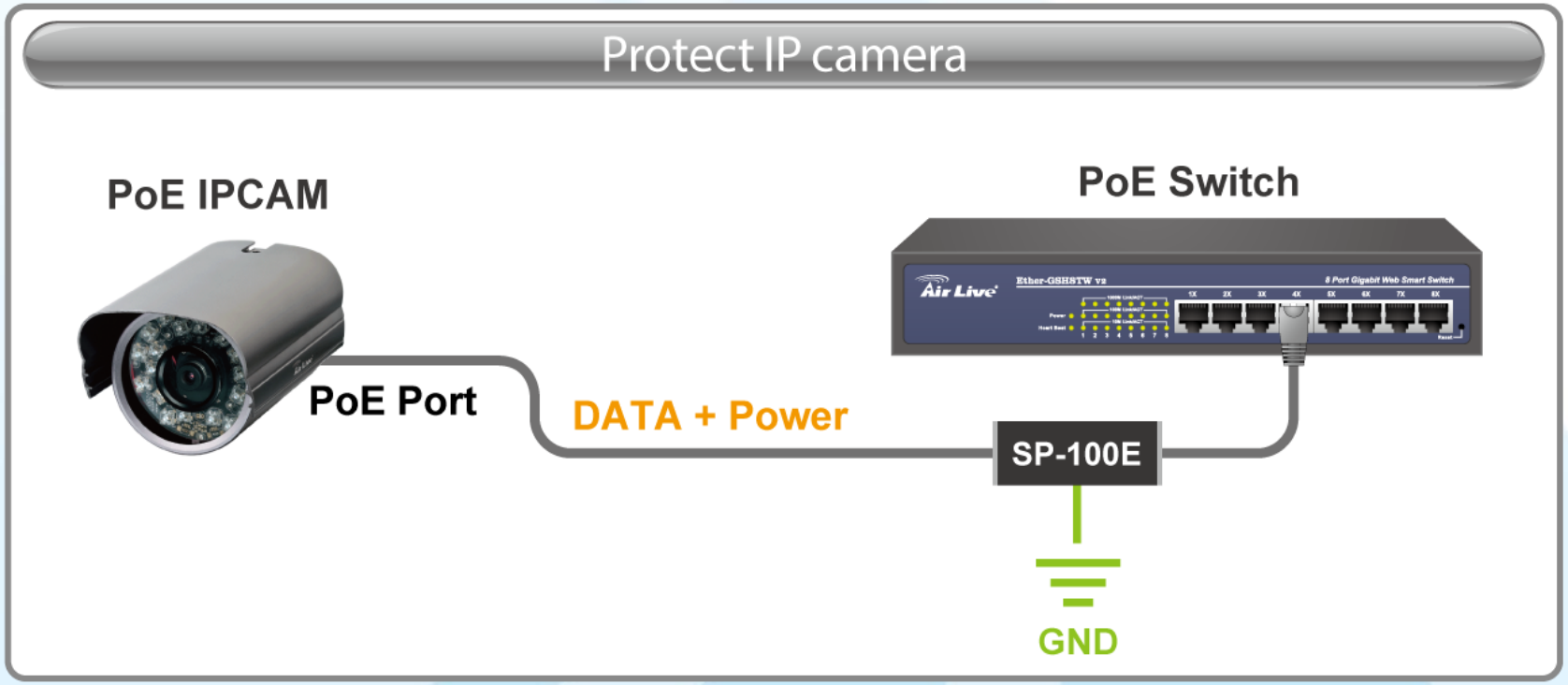
Static electricity, unstable power, power surge, ESD, and lightning are the major causes for device failure and unstability. Special protection are needed during camera installations.

Static Electricity or ESD	Can damage the LAN Port or caused permanent hardware damaged.
Unstable Power Source and voltage surge	Can cause the camera to reboot or restore the settings to default
Lightening Related Surge	Can damage the LAN Port or caused permanent hardware damaged.

POE Surge Protector

SP-100E

POE Surge Protectors such as AirLive SP-100E can protect your IPCAM from power surge and ESD from lightning. The SP-100E is highly recommended for outdoor camera installations. Please make sure the SP-100E's green cable is properly grounded



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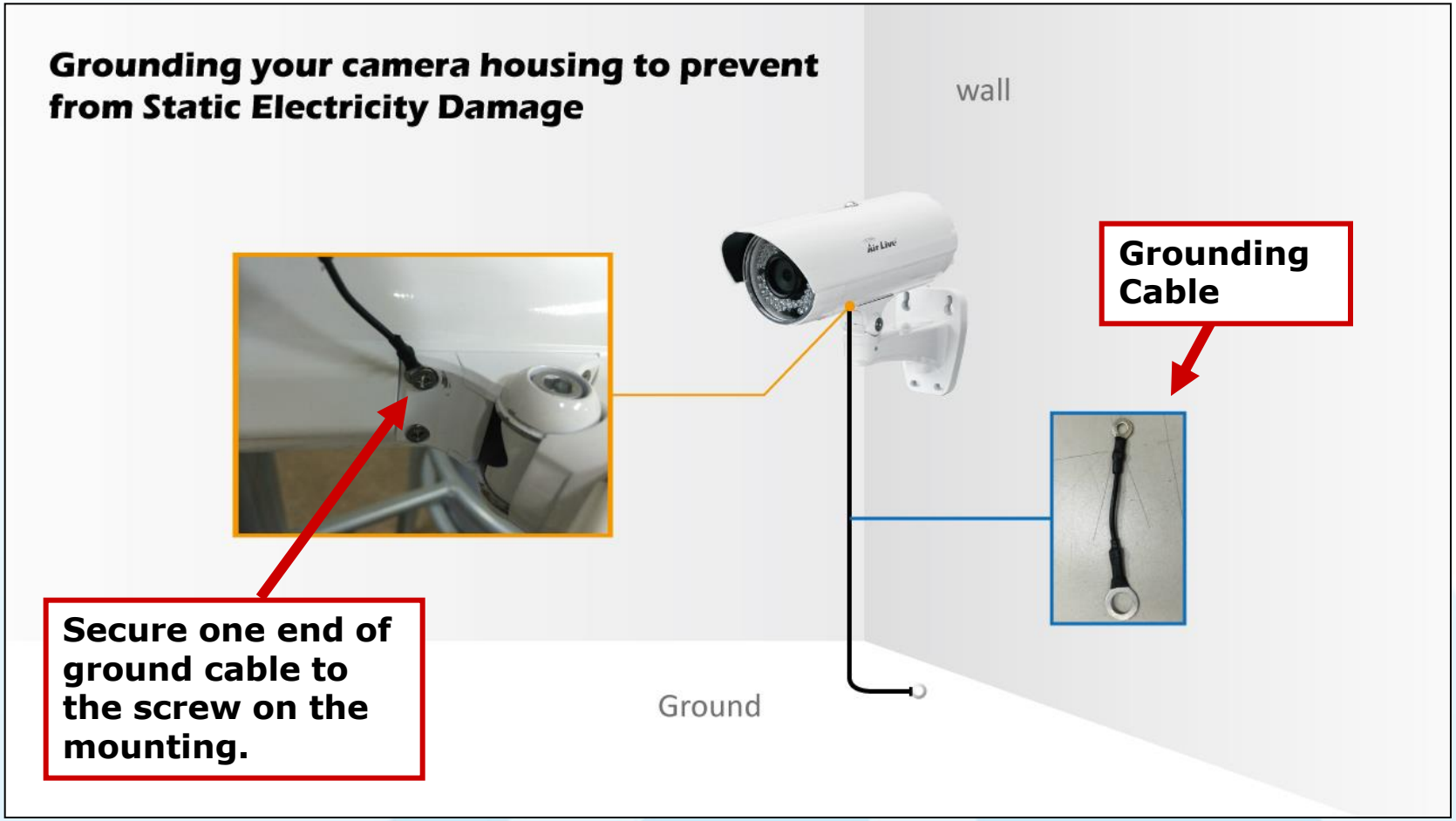
UPS Protection

Please use UPS to power the POE switches and NVRs. This will protect your video network from unstable power and voltage surge. If your IPCAM or NVR reset frequently, this is the best solution. Using UPS also means that the camera system can still record video during power outages.

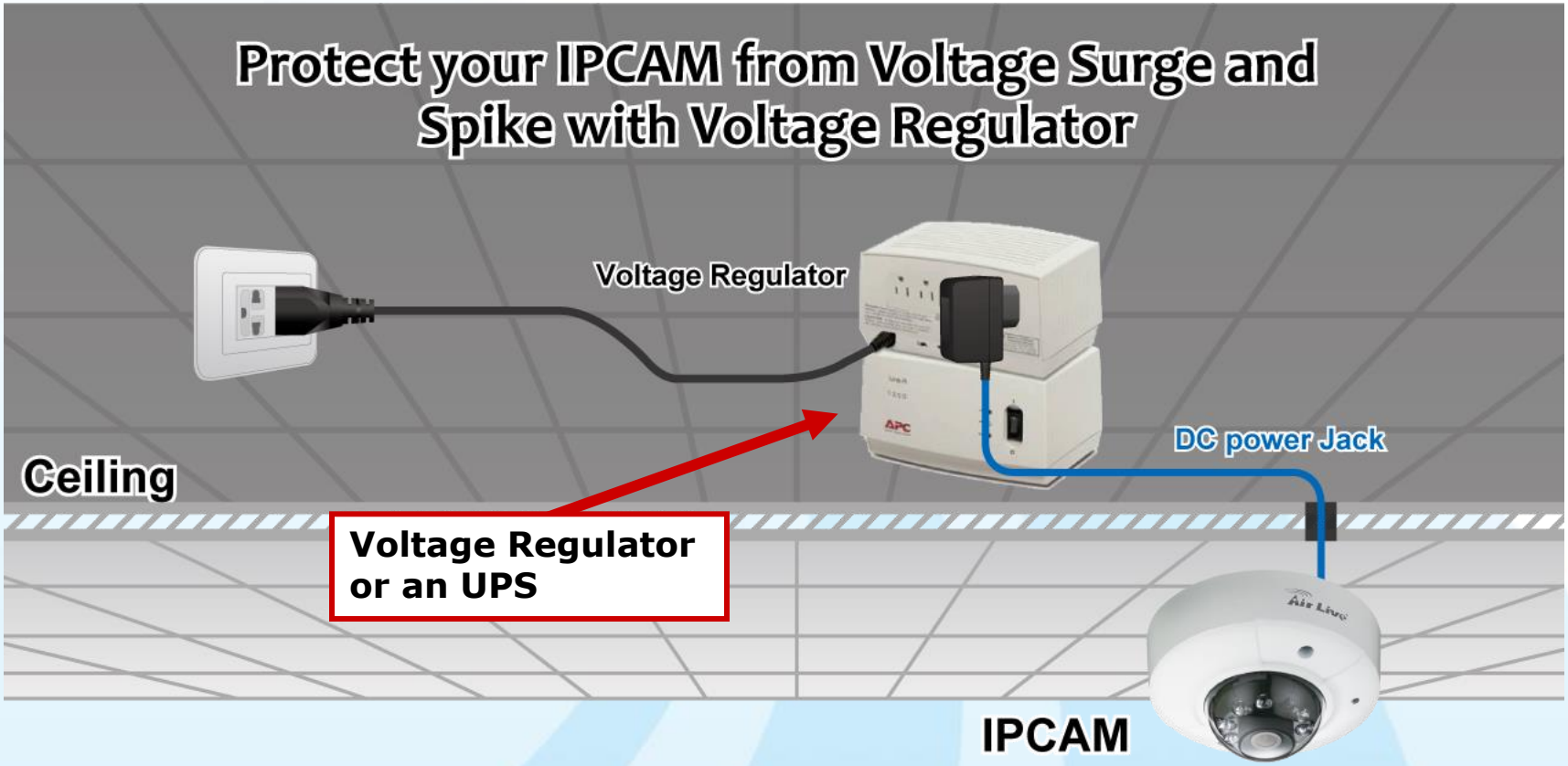
Case Grounding

Proper case ground is needed to ensure the static electricity on the case can be conducted to the ground to prevent damage to your device.



Voltage Regulator

If you are powering the IPCAM through DC jack instead of POE. Please use a voltage regulator, surge suppressor, or UPS. This will protect your IPCAM from power surge that might damage the camera or cause it to reset.



Network Issues

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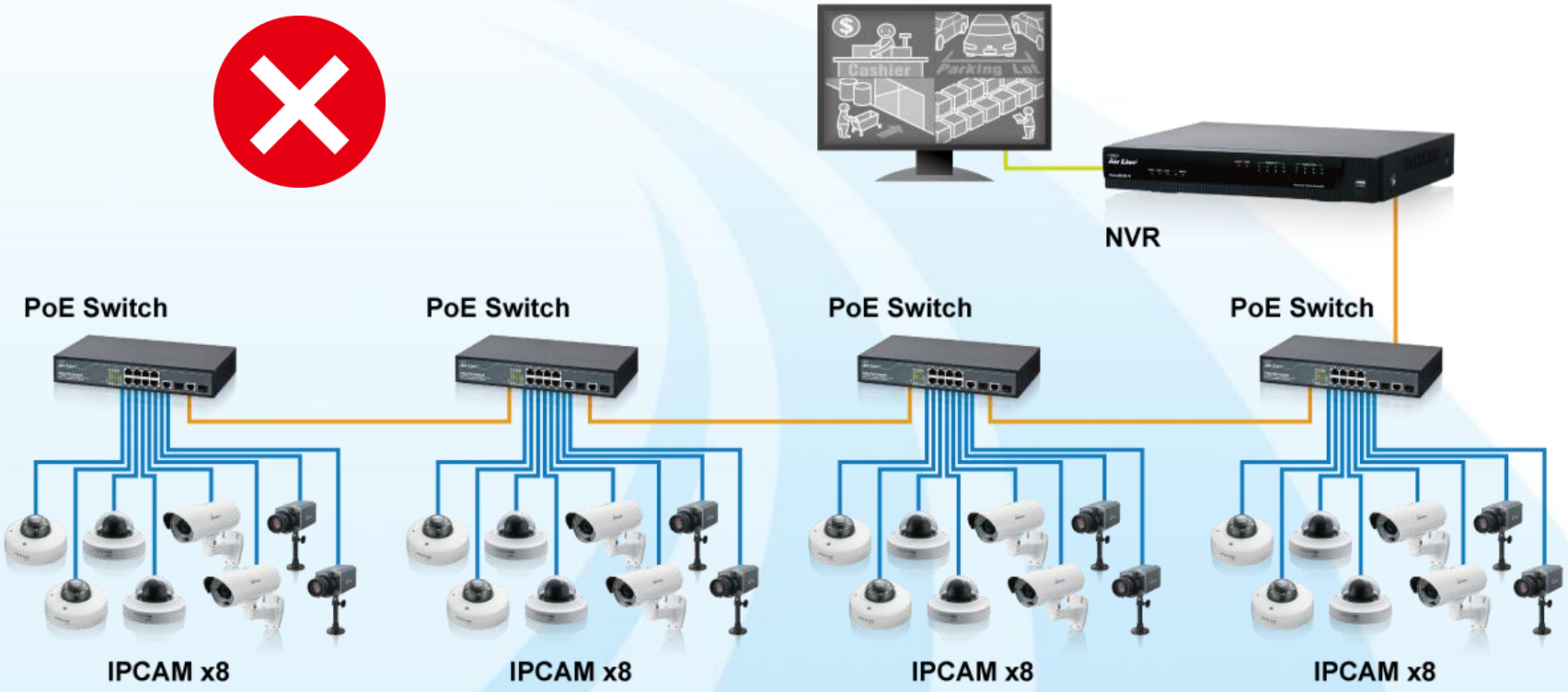
Do not Cascade Switches

Cascading the switches is like putting all traffic on the highway into one single lane. The networking congestion and bottleneck will occurs. This will cause severe network slowdown that will result in lost camera connections, slow access for configurations and bad video quality.



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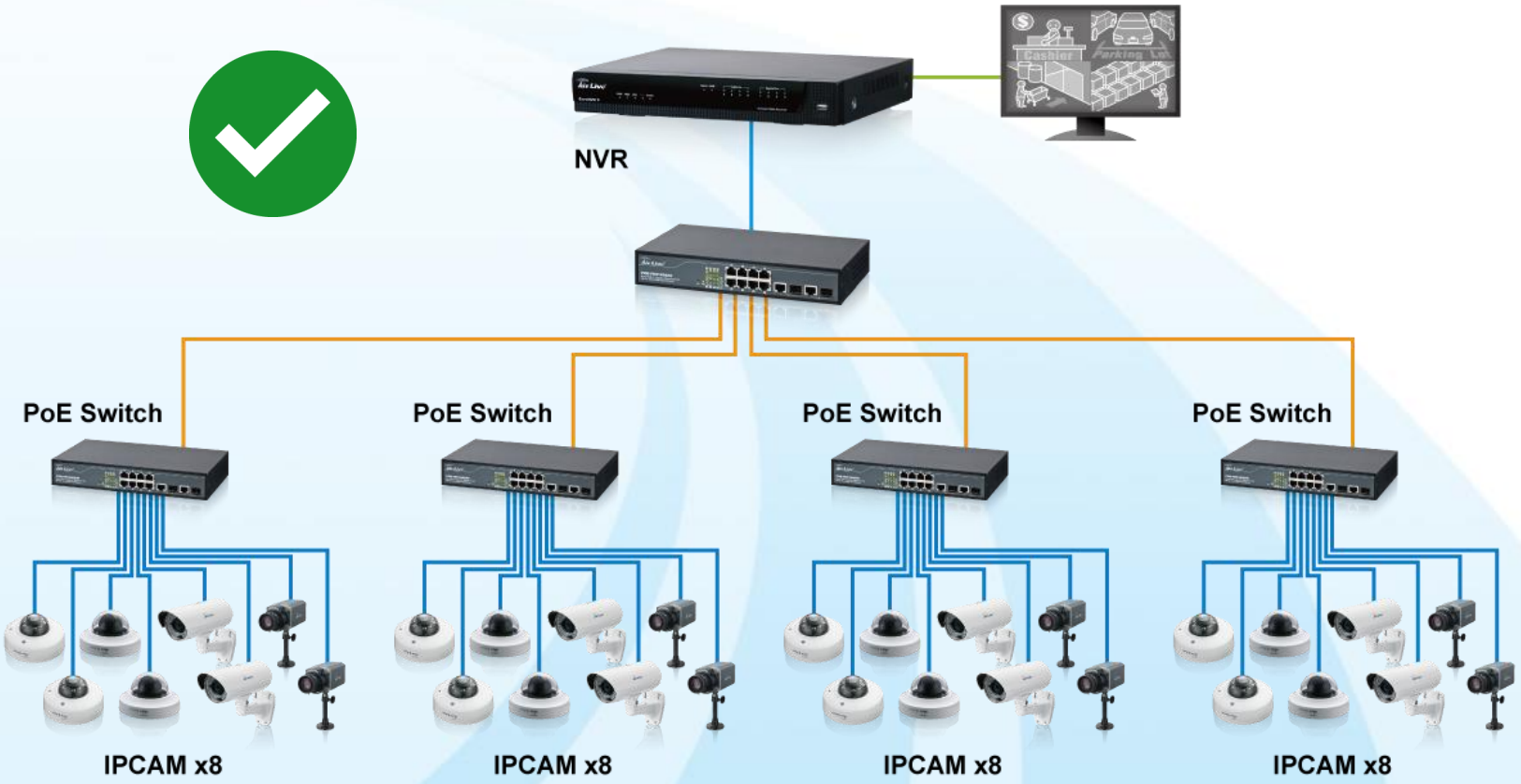
Use Central Switch

Connect all the switches in each location or floor to the central switch. This is call “Star Topology”. Star Topology ensures there is enough bandwidth for each IP Camera networks.



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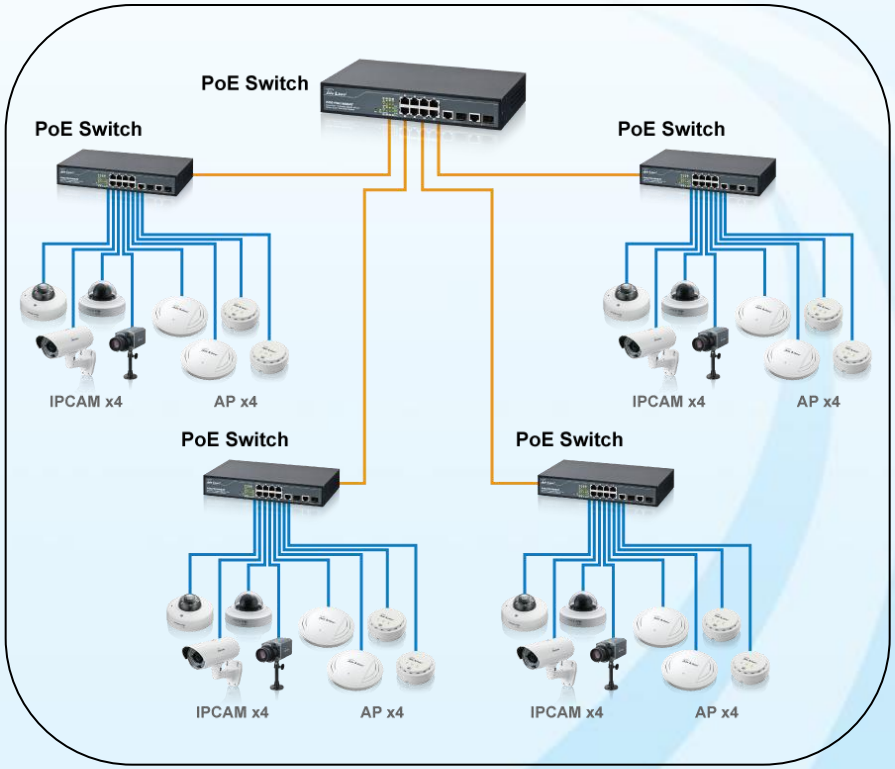
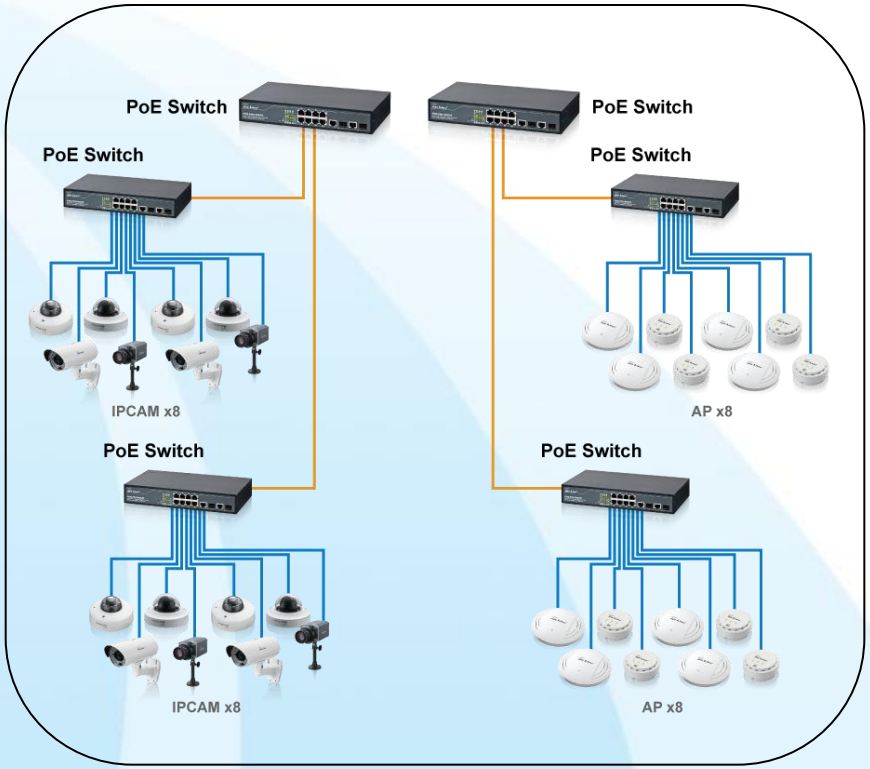
Separate the Video and Data Network

Surveillance videos are mission critical, therefore, it should be on the network of its own to prevent unexpected issues from the data network. If you are unable to physically separate them, you should at least implement VLANs.

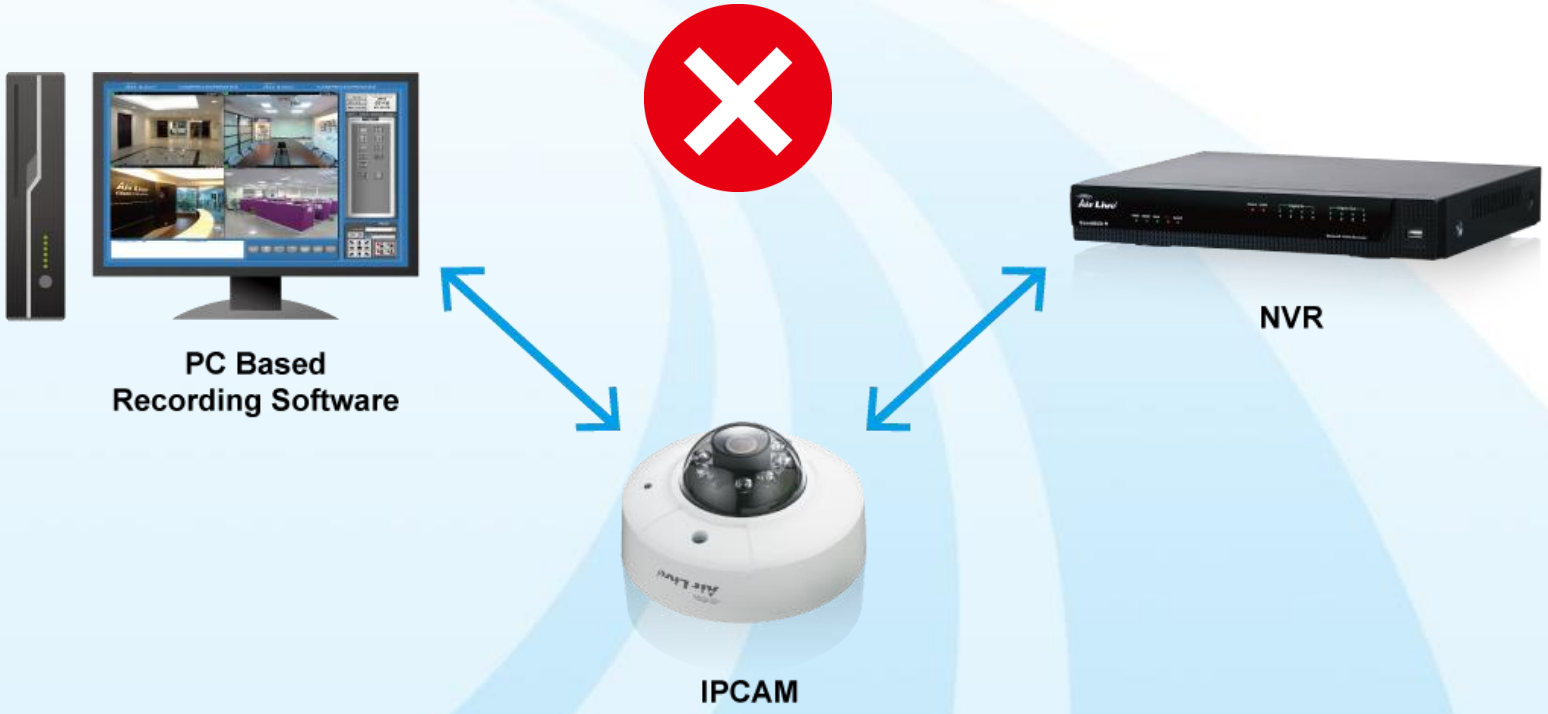
Combined Network



Separate Networks



When one IPCAM is sending video streams to 2 or more devices, it will cause frame drop and video breakup. Such as if you are recording the video of the same camera using both PC software(Campro Express 64) and a NVR.



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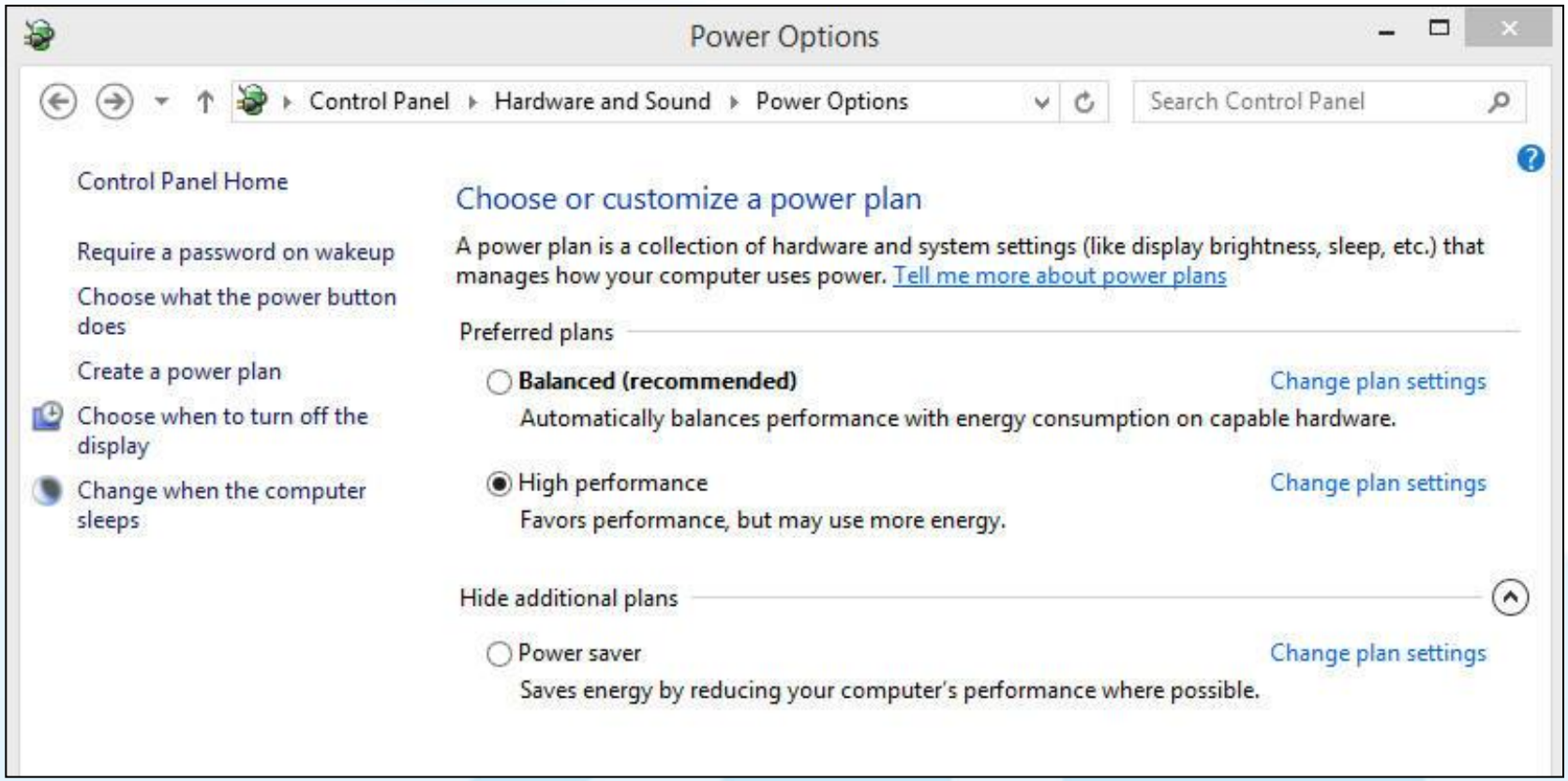
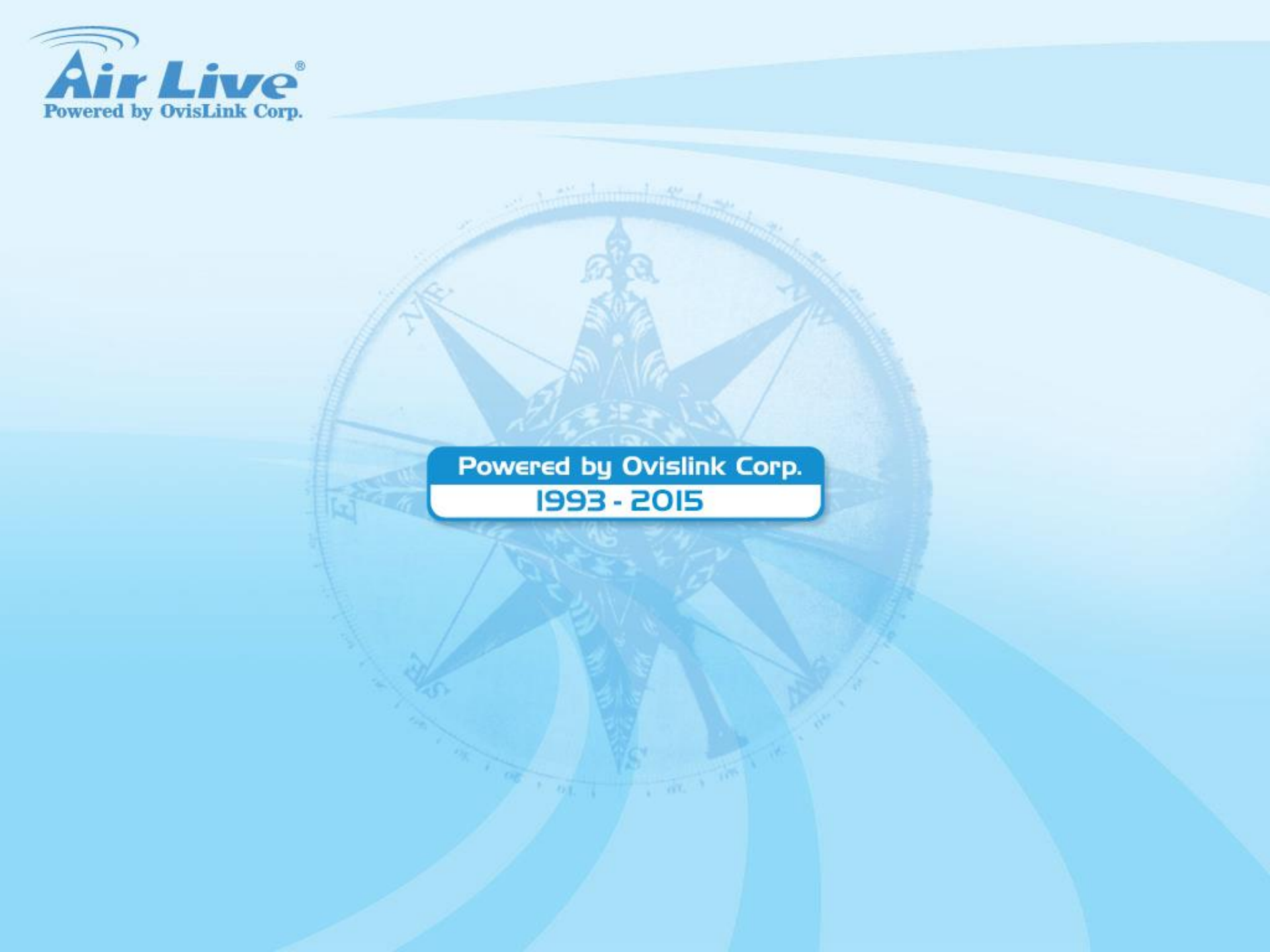
Set Power Management to High Performance

If you experience delays in video transmission when viewing the video through PC, please check your Windows Power Options settings. You should change to "High Performance" power plan.



The IPCAM's web interface uses Active-X for Live View. Therefore, it is best to use Internet Explorer for web configuration and live view. If you need to use Google Chrome or Firefox, please install the "IE Tab" plug in.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