How to Plan Your Megapixel Surveillance Project

Part 1

Surveon Whitepaper

For system installers, the main reason they cannot participate in the network surveillance is because they know nothing about it.   How to handle the bandwidth issues, the complicated settings and how to set up a network surveillance project with ease will be covered in this article.

From the previous articles, we have explained some basic knowledge of the network surveillance, the front-end network cameras to capture images, the middle-end CMS/VMS to manage videos and the back-end storage devices to retain videos, and these 3 elements establish a complete network surveillance project.   This article will help users to learn how to link the IP surveillance to the network devices and plan a complete IP surveillance solution.

Network Surveillance Myths
Before we move to the introduction of planning a network surveillance solution, let us clear 2 network surveillance myths first.

Myth 1: Using network cameras will burden the bandwidth?
The answer is no.   This might be the question from the CCTV installers or an argument from people who reject the idea of the network surveillance.

Basically it only takes 4~6 Mbps for 1 channel of a full HD camera and an Ethernet interfaced devices can support almost 100Mbps per port; thus to provide sufficient bandwidth for videos to travel smoothly should not be a problem.

Besides, the network surveillance by nature lowers the demands of cabling.   For a medium to large scale project, the whole installation costs can be also reduced.

Myth 2: When you know nothing about the network, it is impossible to design a network surveillance project?
Since only big scale projects require complex network settings, the network surveillance system is relatively easy to install and configure for small to medium scale projects to embrace this trend.   There is no need to learn all the complex or professional network knowledge to design a medium scale projects; thanks to the SOP or a few hours of trainings provided by vendors, installers can follow the SOP to set up 8~50 channels of surveillance projects.

Only 6 Steps to Plan a Network Surveillance Solution

Most of the vendors will offer design flow for help.   Take Surveon Technology as an example, it is one of few complete surveillance solution provider to offer self designed and manufactured products of IP cameras, Video Management Software (VMS), advanced Central Management Software (CMS), and storage devices so that end-to-end design flows and solutions can be provided.

However, if choosing other vendor, the design plan will still be similar.   Let us make use of Surveon Technology's surveillance architecture to do the explanation.

All-In-One Easy Surveillance Architecture
All-In-One architecture is largely deployed in small scale surveillance projects, while for medium to large scale projects, multiple NVRs with client-server architecture CMS are utilized.   We will focus on the all-in-one architecture in this article.

One NVR, 4~12 Channels
For a small convenience store, it might only need 6 cameras, 1 NVR, 1 local display and use a PoE switch to link all the devices.   Normally the all-in-one NVR with 2 hard disc drives that supports 12 channels of recordings are quite sufficient for small scale projects.   Furthermore, owing to the space limitation, NVR should have the features of compact size, good heat dissipation and energy-saving.

One NVR, 12~48 Channels
For bigger scale projects, such as residential communities, the surveillance design is quite simple; as we often see from the gatehouse where only one NVR and one display are installed for the security guard to monitor.

This kind of surveillance project has a wider coverage for example a 3-building compound.   Thus a network surveillance will be needed since it significantly reduce the cablings that are needed to go back to the control center when deploying the conventional surveillance solution, saving the installation costs from cablings in each floor of the different buildings.

This kind of surveillance requires more channels and that leads to more hard drive disks like 6 to 8 disks to meet the demands of 2 to 4 weeks recording retentions.

Hybrid NVRs are often utilized for projects such as the traditional surveillances upgrading to network ones and the ones with cabling difficulties in different installation sites.

The introduction on all-in-one solution does not cover the client-point parts, allowing users to establish a preliminary storage architecture.   We will present more complex-structured projects in the following article and hope that system installers with no network backgrounds can build critical knowledge continuously so that everyone can set up IP surveillance projects with ease.

(Continue in Part 2)