
How to Plan Your Megapixel Surveillance Project

Part 2

Surveon Whitepaper



The diversity of network surveillance architectures makes system integrators bewildered, not sure where to start or what to learn. Continued last issue's topic "Simple Architecture", this issue we will talk about the client-server storage and centralized IP storage bringing you a systemic concept.

From the last issue, we have introduced all-in-one simple surveillance architecture. This time we will focus on the client-server storage and centralized IP storage for readers to deliberate and be able to build more challenging network surveillance projects.

Client Server Network Surveillance Architecture

For high end projects, such as parking lots, the most important things are the NVR recording performance and stability. To avoid disoperation and interruptions on the recording stability, all the monitoring or playback can be done via a remote client.

Basic Client Server Architecture

For example a standalone NVR not only needs to record but also support 8 channels of live view. This can use up all CPU capabilities and may cause the overall system unstable. Therefore for cases like this, it is better to apply the basic client-server as the Figure 1 shown below.

Centralized Client Server Architecture

For big projects, more than one NVR are deployed. Advanced software can make use of the client-server architecture to increase the number of channels even to hundreds. Example from the Figure 2, this deploys several professional clustered RAID NVRs and each NVR can support 60 channels of Full HD images. Once connected to the CMS, these 3 NVRs can add channels from ten to hundreds and the numbers of computers from the client end can also be multiplied to satisfy different monitoring demands. Naturally network bandwidth and I/O performance should be also taken into account.

Distributed Client Server Architecture

This mentioned CMS connecting method can diversify to different possibilities. Take a campus project as an example, the user wished to install HD IP cameras in the 3 main campuses and different campus has its own NVR, IP cameras, and PoE switches via network to connect to the 3 LANs. So that security guards can monitor

certain campus through its local cameras to save bandwidth not worrying the massive data transmissions.

Centralized IP Storage Architecture

The last and also the most complicated architecture is the IP HD Surveillance Solution. As its name suggested, IP surveillance is involved with IP cameras, NVR and even IP-based storage. The most common one is iSCSI (Internet Small Computer ,an Internet Protocol (IP)-based storage networking standard for linking data storage facilities. For big projects with more than hundreds of channels, it is recommended to use the concept of cloud computing to enhance the performances of storage and network bandwidth. Take a large hospital project as an example, if using the conventional storage method, more IPCs and NVRs will be needed. And each with 4~5 HDDs, adding protective sectors and buffer storages in, the total storage is often overestimated to 20%, compared with the IP centralized storage method. Therefore, the cost of HDDs and maintenance can be significantly reduced when deploying the IP centralized storage method. Besides the cost benefit, since IP centralized storage can be scalable in IP cameras, storage and VMS, most of the international large projects have chosen to deploy the IP HD Surveillance Solution.

In the recent issues we have covered the main architectures of IP surveillance storage and provided readers with complete descriptions. Possessed with this knowledge, readers can make better decisions on the surveillance solutions according to different professional projects. IP surveillance is not that complicated. Once you know the basic information, give it a try and learn from mistakes, by and by, you will be able to face even bigger IP surveillance challenges.