
**What is Client Server Scalable Architecture?
& Benefits of Surveon Client Server Scalable VMS Framework**

Application Notes



Technical Support Team

Preface

In the surveillance market, the PC-based DVR software is currently most popular. However, the trend is moving to IP camera and VMS software. Because of the invention of IP cameras, many vendors have been developing Video Management Software (VMS) with different architecture to support IP cameras, and each VMS architecture has its pros and cons. Currently the main stream for large scale, enterprise level VMS is based on client-server architecture. On the other hand, the all-in-one VMS architecture also has its market share. This application notes will be based on Surveon Enterprise VMS to discuss the advantages of the client-server architecture versus that of the all-in-one architecture and how to apply Surveon Enterprise VMS to projects with different scales.

1. All-in-One Architecture and Client-Server Architecture Comparison:

All-in-one architecture is like the PC-based DVR. Every component is installed in the single device. It is very simple to setup on the field site. But it has a lot of disadvantages and limitations, such as non-scalable, unstable, and unable to handle multiple megapixel recording.

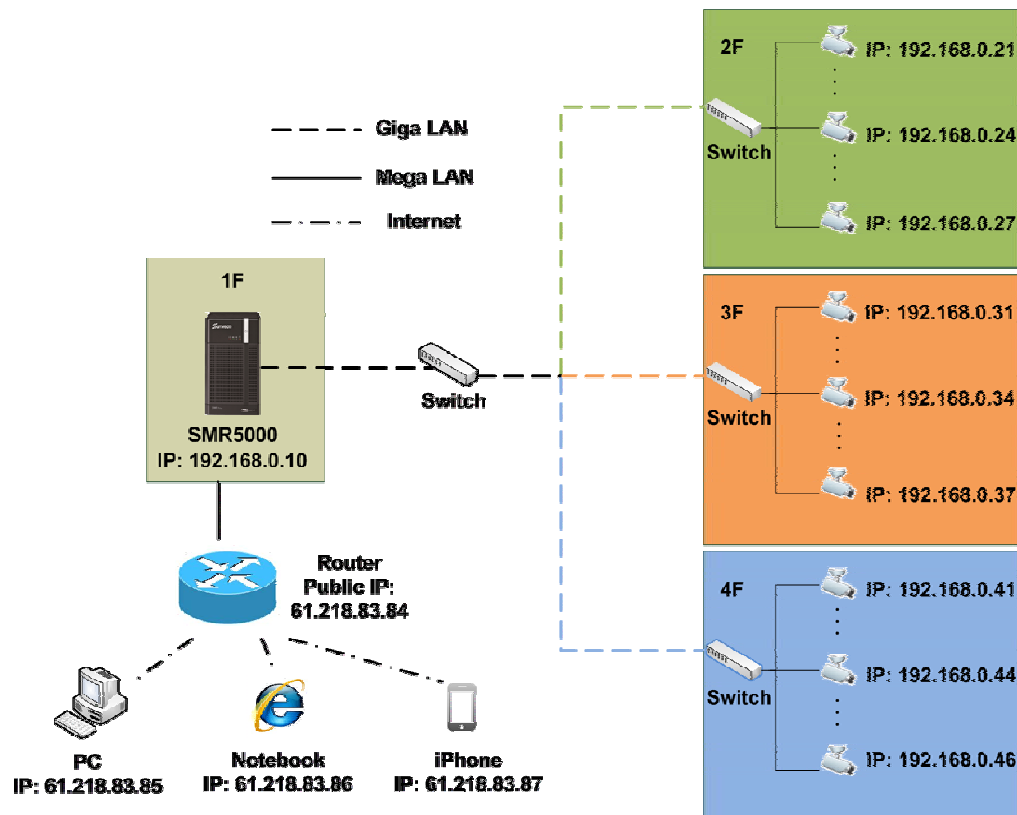
Client-server architecture is another story. Every component is independent but can co-work with each other in this architecture. In other words, if the project is big, you can directly install the component in more devices to extend the capability. If one of components fails, the other components will not be affected. Therefore it can minimize the impact of failure and increase stability.

In Surveon VMS, we have six major components to work together. The recording server is used to record and stream the video. The domain and account/account server is used to handle global account information. The local client is used to show live view in the local machine. The remote client allows user to access the NVR from remote sites. Besides, both local client and remote client can allow users to modify the system configuration. In additional, in the large scale project, the CMS server can manage multiple NVR and support up to thousands of channels for recording. The following is the comparison table:

Module for VMS	All-in-One Architecture	Traditional All-in-One Characteristics	Client-Server Architecture	Client-Server Characteristics
Recording Server	One AP with (Recording + Account + Local Client)	Pros: ■ Easy installation Cons: ■ Single server performance; hard to handle multi-channel megapixel recording ■ One component failure will impact the whole system ■ Doesn't have central account management and this function needs to be assisted by another CMS server. ■ The local client and remote client are different program. ■ Hard to be scalable	Independent AP	■ It can support up to 64CH with 1080p ■ It is stable and is not affected by another failed module.
Domain / Account Server			Independent AP	■ All accounts are managed by central domain server ■ The central domain can manage thousands of NVR
Local Client			Independent AP	■ Single client program for local and remote clients
Remote Client			Another Client	Local Client / Remote Client
Configuration	Only Local Client		Optional	■ The streaming is not delivered by CMS server. So the performance can be scalable and is not limited by CMS server.
CMS Server	Yes			

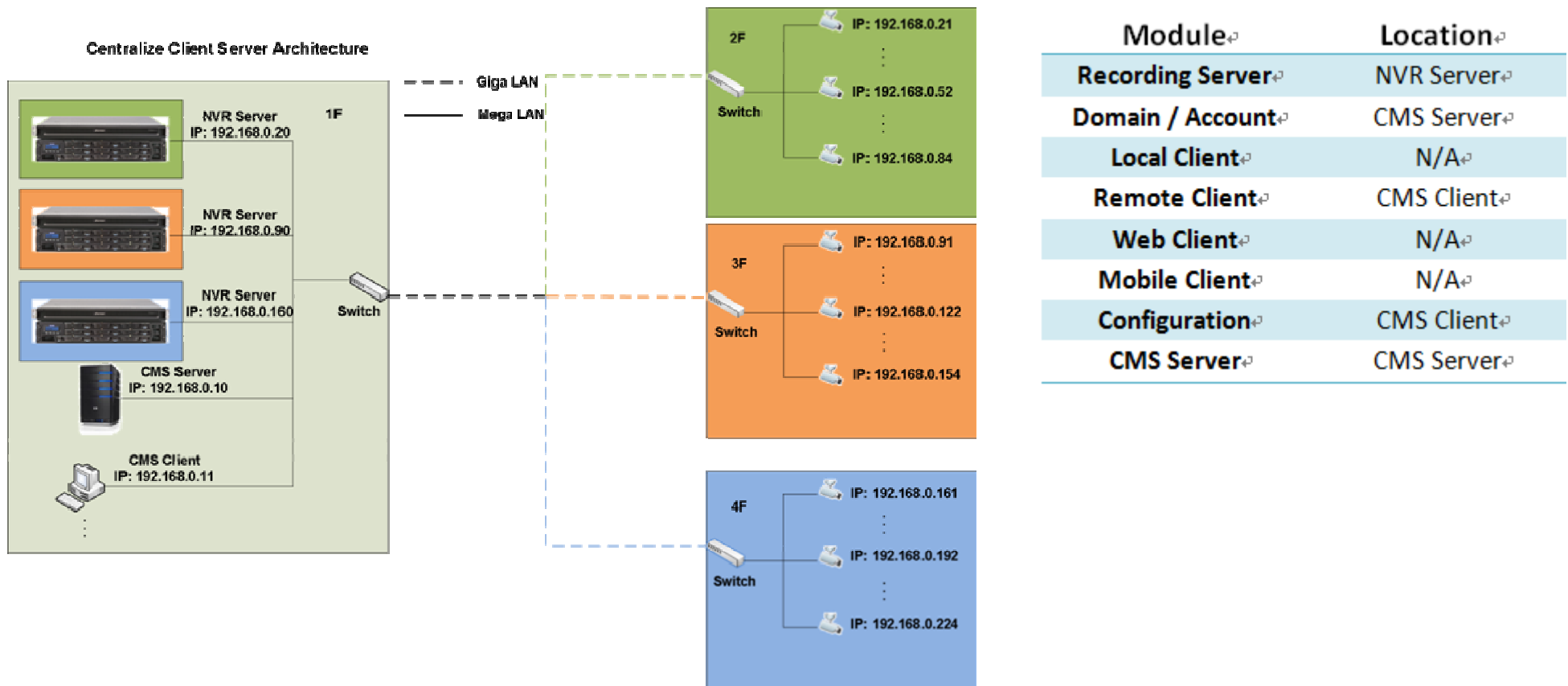
2. Surveon client-server architecture can apply to different project scales:

2.1 For 10 to 20 channels, it is relatively simple. So users can install all components in the single server and it works like an all-in-one model. As you can see in below diagram, the recording server/domain server/local clients are all installed in SMR5000. And users can access SMR5000 via internet using iPhone, web browser and remote PC. It is very convenient for small project configuration.



Module	Location
Recording Server	SMR5000
Domain / Account	SMR5000
Local Client	SMR5000
Remote Client	PC
Web Client	Notebook
Mobile Client	iPhone
Configuration	SMR5000/ PC
CMS Server	N/A

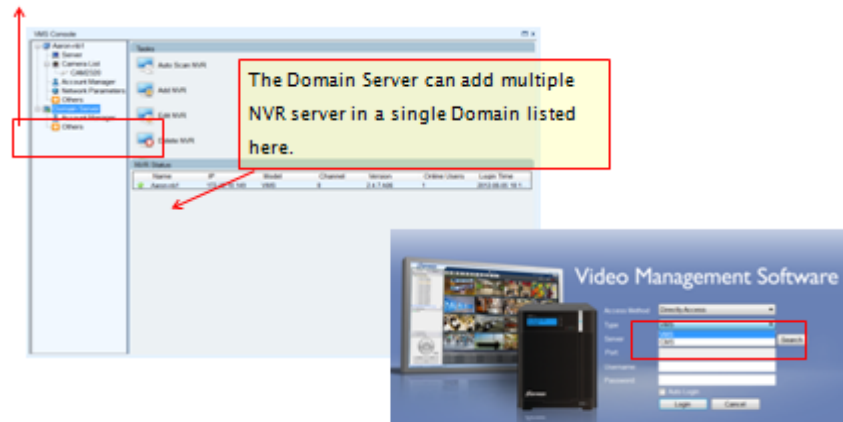
2.2 For large scale projects, as you can see, the recording server is assigned to NVR server. The domain account service is assigned to CMS server. The live view and configuration are assigned to CMS client. And in this architecture, users can deploy multiple NVR for recording hundreds of channels or 6-month period of video, and setup a CMS server to manage the NVR. After that, users can view all the channels via a unified CMS client in different locations



In conclusion, based on Surveon's client-server architecture, all the accounts are centralized and managed by the domain server. The video streaming and recording video are distributed on each NVR. All these process can be online and through our domain management interface as belows.

Easy Scalable by Domain Architecture

The domain server for each NVR/SMR can be used as the central domain server to include more SMR to it's domain.



When user log in as the CMS client to this Domain. All the authorization is manage centralize for account, view, NVR, and can manage across the whole network

Summary

This application notes just shows you the brief concept of Surveon's client-server architecture. You can visit Surveon website to get familiar with our product features and corresponding products.