

Video Streaming Server Clustering & Redundancy Scheme for Large Scale Service (영상분배서버 이중화)



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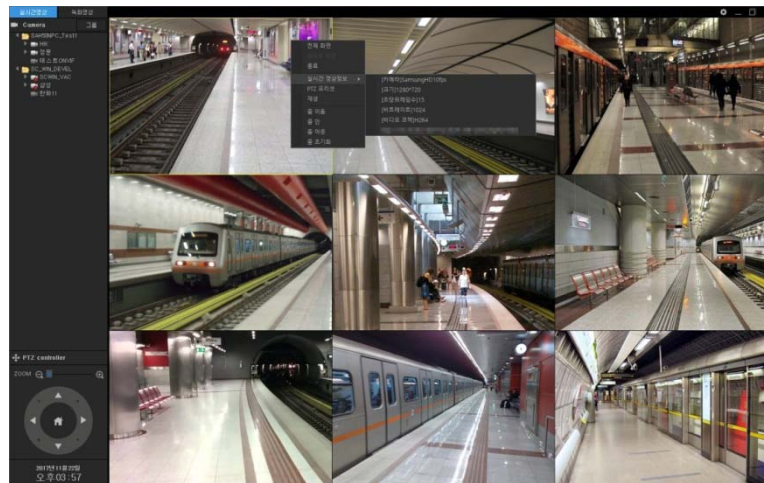
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Smart VMS Solution Overview

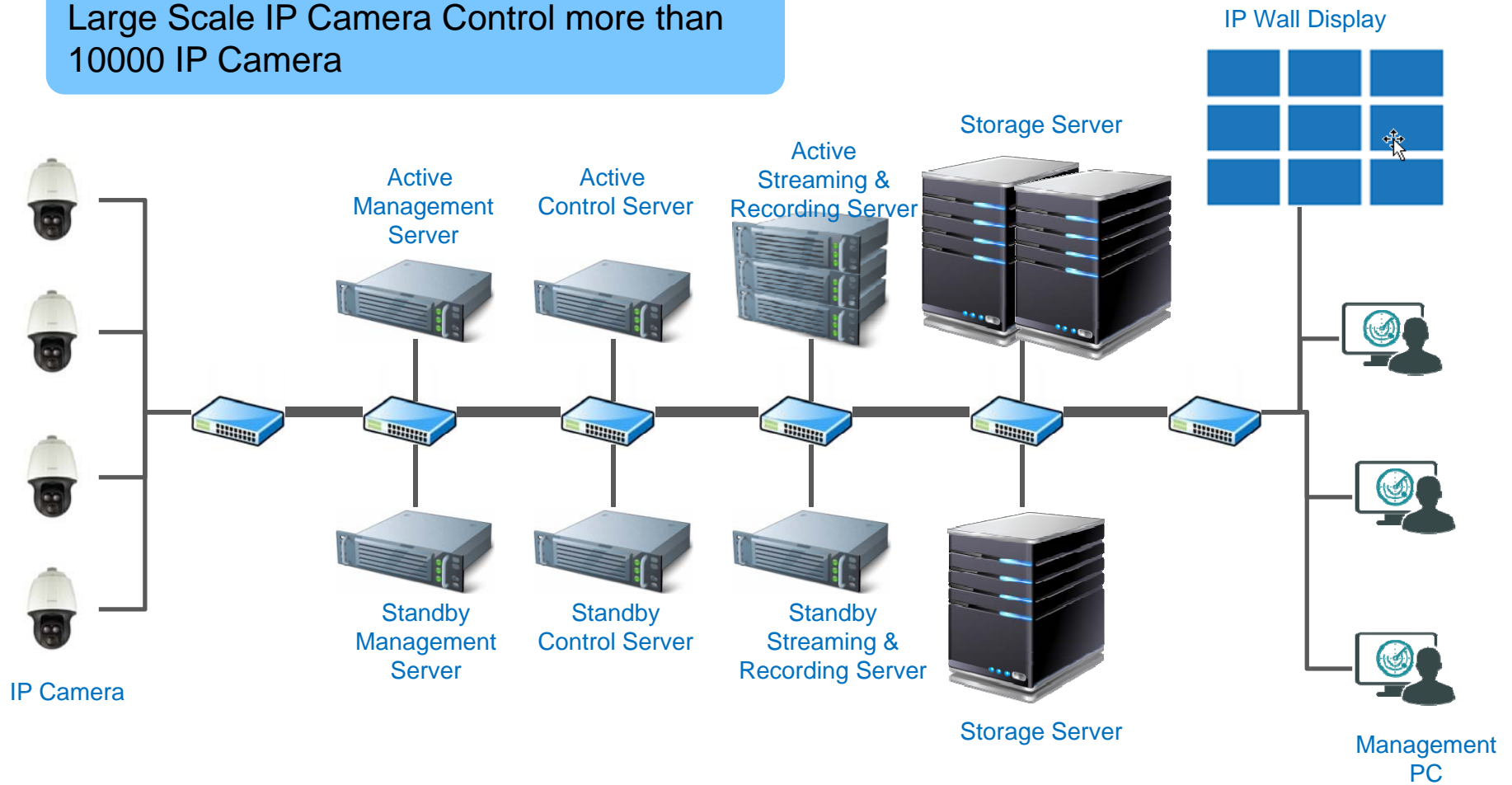


Main Features

- New Enhanced Scalable Architecture for Large Scale IP Camera or Video Codec Deployment
- System Redundancy Architecture Support for Fault Tolerant and System Stability (Active–Standby)
- Extendable Architecture Support for Integrated Security Service like as Intrusion Detection, Unmanned Security Site.
- Extendable Architecture Support for Traffic Monitoring Specialized VMS like as Powerful PTZ, Subtitle Generation, Web based Live Traffic Monitoring, etc.
- Operator can have Independent Management Scheme via Management Server
- Various Application Server Interworking Structure Support like as GIS, Traffic Violation Detection by LPR(License Plate Recognition), IP Telephony, Push-to-Talk, IP Emergency Phone, etc.

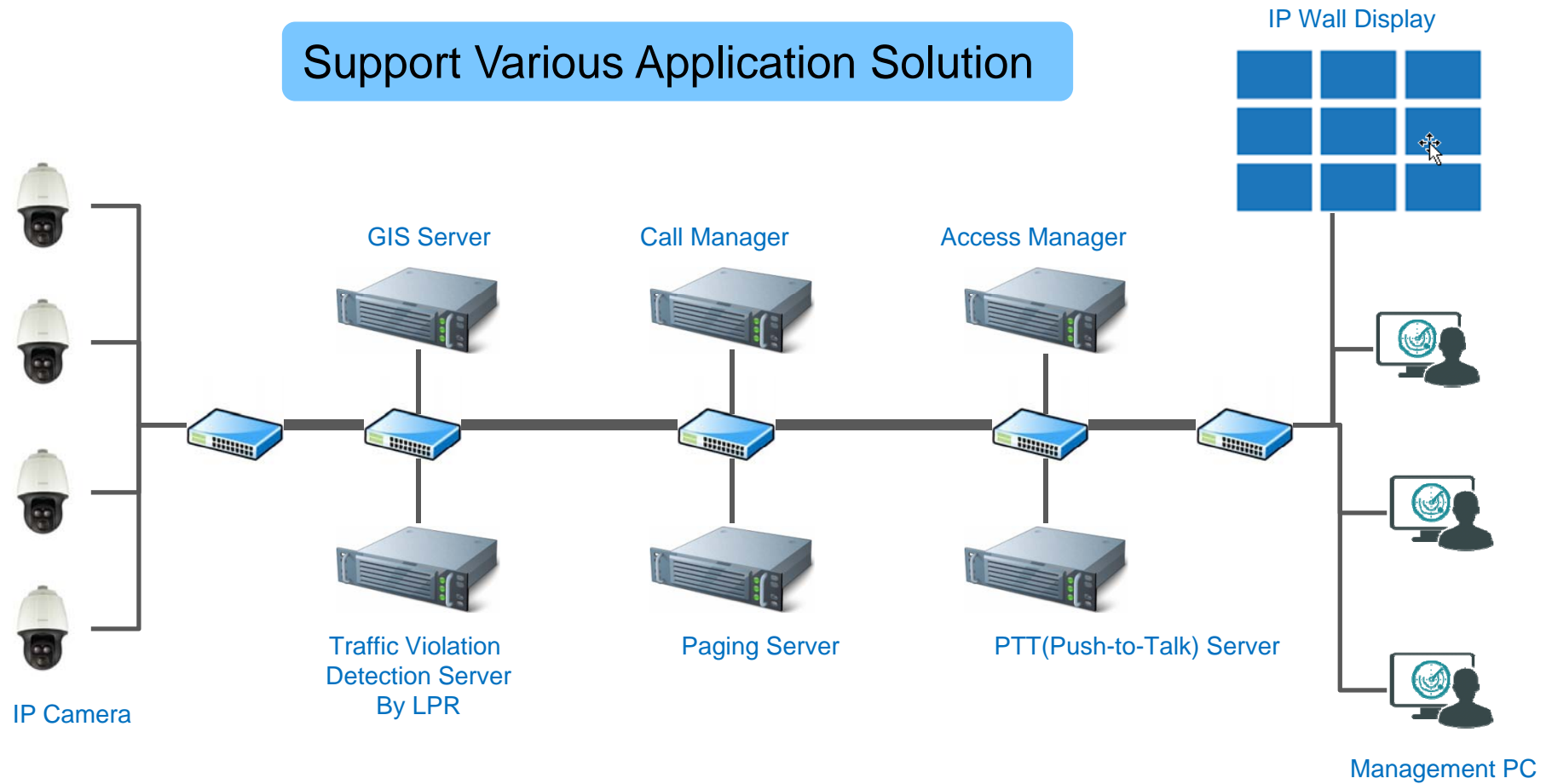
Network Diagram

Large Scale IP Camera Control more than 10000 IP Camera



Network Diagram

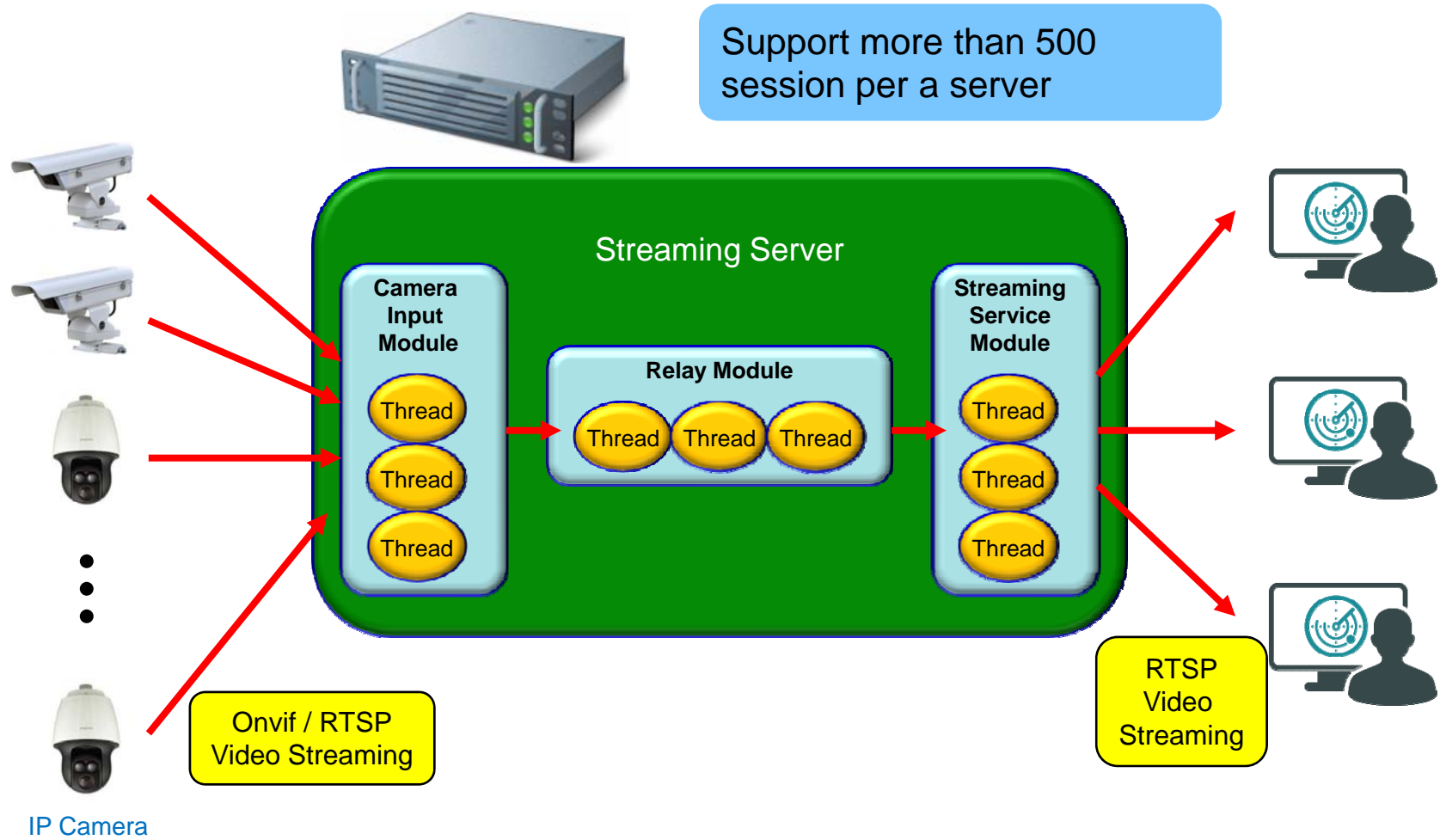
Support Various Application Solution



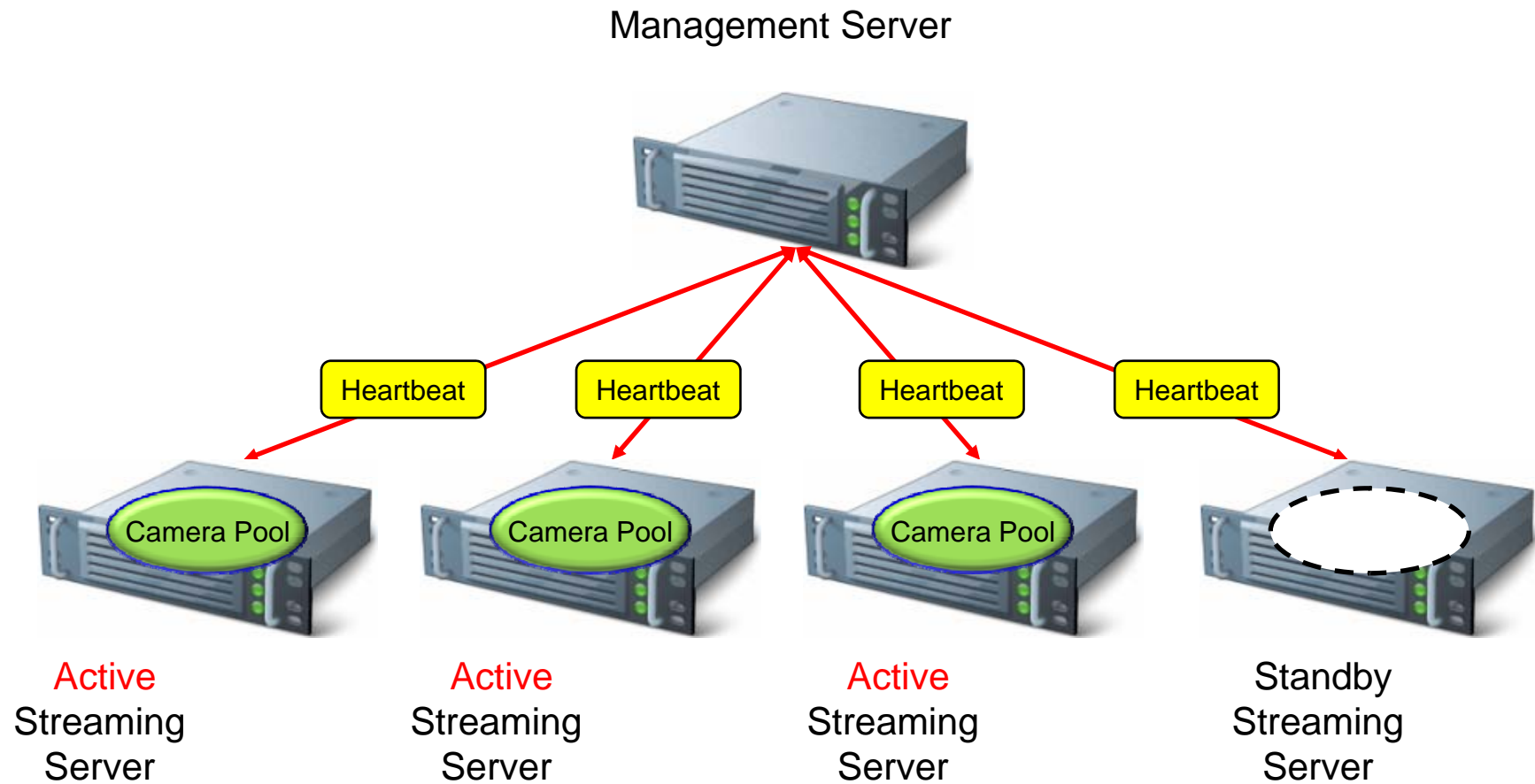


Video Streaming Server Overview for Large Scale IP Camera Service

Support Live Video by using Resource Efficient Real-time Thread Technology



Streaming Server support IP Camera Pool based System Redundancy





Video Streaming Server Clustering & Redundancy Scheme

Main Features

- Active SS(streaming server) is only one in SS group.
- Support multiple SS in SS group.
- A SS can participate to multiple SS group.
 - Support N(group):1(SS) redundancy.
 - Support failback option for N:1 redundancy.
- Support configurable failover time.
- Support alarm and event.



UI Design & Examples

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- Streaming Server Group Configuration
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- Streaming Server Failover
- Streaming Server FailBack
- Streaming Server Configuration

Streaming Server Group Configuration

The screenshot shows the Smart VMS interface for 'seoul HQ'. The 'System' menu is open, and the 'Streaming Server Group' option is selected. A table lists the existing group:

Group Name	Assigned Camera	Streaming Server	Edit	Delete
1 streaming server group	24	• primary streaming server (Primary Server) • secondary streaming server		

The 'Add Streaming Server Group' dialog is open, showing the following configuration:

Group Name: streaming server group

Streaming Server:		Assigned Streaming Server:	
Server Name	IP address	Server Name	IP address
There is no items		primary streaming server	172.16.30.170
		secondary streaming server	172.16.30.169

A red arrow points from the 'Add Streaming Server Group' dialog to the 'primary streaming server' entry in the table above.

Make a Streaming Server Group

- A streaming server participate to group with priority.
- Each streaming server can be allocated to many streaming server group (N : 1).
- The streaming server with the highest priority will be active, and the others are standby.

IP Camera Property Configuration

The screenshot shows the 'Smart VMS' interface with the 'yeoksam' camera selected. The 'Edit Camera' dialog is open, displaying the following configuration details:

- Device Name *: dahua
- Protocol Type: ONVIF IP
- Streaming Server Group *: streaming server group
- IP address *: streaming server group
- Username: admin
- Password: admin**admin

The 'Camera Information' section includes:

- MAC address:
- Model:
- Vendor:
- Serial Number:
- Hardware ID:
- Hostname:
- PTZ Supported: false
- GUID: 4297b0e1-33cf-4318-98ee-1e1f21e63e34

A red arrow points to the 'Streaming Server Group' dropdown menu. A callout box contains the following text:

Allocate a Camera to the SS group.

- Each camera can be allocated to a streaming server group which manage one or more streaming servers

Streaming Server Monitoring

Smart VMS 2.4.180108 kunsan 172.16.30.169, super administrator 10:51 AM Login

Dashboard Devices Active Alarms History

Streaming Server Storage server Camera

	Name	IP address	Active Streaming Server Group	Camera	Live	Recording	CPU	Memory	Storage	Reboot
1	primary streaming server	172.16.30.170	streaming server group	25 / 500	0 / 3000	2 / 500	1.0%	341.8 MB / 3.4 GB	26.3 GB / 1.8 TB	🔄
2	secondary streaming server	172.16.30.169		0 / 100	0 / 500	0 / 200	4.5%	792.3 MB / 7.6 GB	65.5 GB / 289.3 GB	🔄

Monitoring active SS

- "Primary streaming server" is active mode now in "streaming server group".
- "Secondary streaming server" is standby mode state.
- If "Primary streaming server" fails, "secondary streaming server" will be active.

Streaming Server Failover

Smart VMS 2.4.190109

headquarter 172.16.30.169, super administrator Login 11:30 AM

Dashboard Devices Active Alarms 35 History

Streaming Server Storage server Camera

streaming server(primary streaming server) disconnected
primary streaming server - 2018-01-09 11:25:51

Name	IP address	Active Streaming Server Group	Camera	Live	Recording	CPU	Memory	Storage	Reboot
1 secondary streaming server	172.16.30.169	streaming server group	24 / 100	0 / 500	2 / 200	1.1%	861.6 MB / 7.6 GB	65.6 GB / 289.3 GB	
2 primary streaming server	172.16.30.170		-	-	-	-	-	-	

Monitoring Failover SS

- If “primary streaming server” fails, alarm message will be notified
- Within seconds you configured in streaming server failover configuration menu, the “secondary streaming server” is active now in streaming server group
- The “secondary streaming server” shows current camera, live and recording session for cameras with license value.

Streaming Server Failback

The screenshot shows the Smart VMS interface with a notification box stating "streaming server connected" for the primary streaming server. Below the notification is a table of streaming servers. A red arrow points from the "streaming server group" column of the primary streaming server row to the "Monitoring Failback SS" text box.

	Name	IP address	Active Streaming Server Group	Camera	Live	Recording	CPU	Memory	Storage	Reboot
1	secondary streaming server	172.16.30.169		0 / 100	0 / 500	0 / 200	1.4%	842.4 MB / 7.6 GB	65.9 GB / 289.3 GB	🔄
2	primary streaming server	172.16.30.170	streaming server group	25 / 500	0 / 3000	2 / 500	1.3%	333.8 MB / 3.4 GB	25.8 GB / 1.8 TB	🔄

Monitoring Failback SS

- If use_failback_option is true and "primary streaming server" is return to alive mode, then system will failback onto "primary streaming server"
- Now, "primary streaming server" is active now

Streaming Server Configuration

Smart VMS 2.4.180108

seoul HQ 172.16.30.169, super administrator Login 11:54 AM

Recording Record Schedule Operators System Maintenance **Setting**

Search

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- suwon
- yeoksam

Streaming Server

Server keep-alive interval: 3 seconds

Use fail-back feature to primary server

Event Retention Period

Alarm & Event: 10 Days

Apply

Configure Failover Time

- You can configure keep alive interval for each streaming server



Thank you!

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