

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



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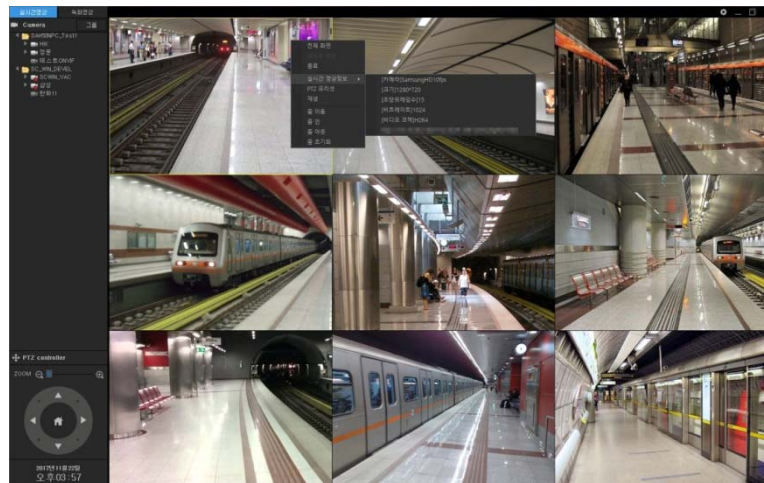
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# Smart VMS Solution Overview

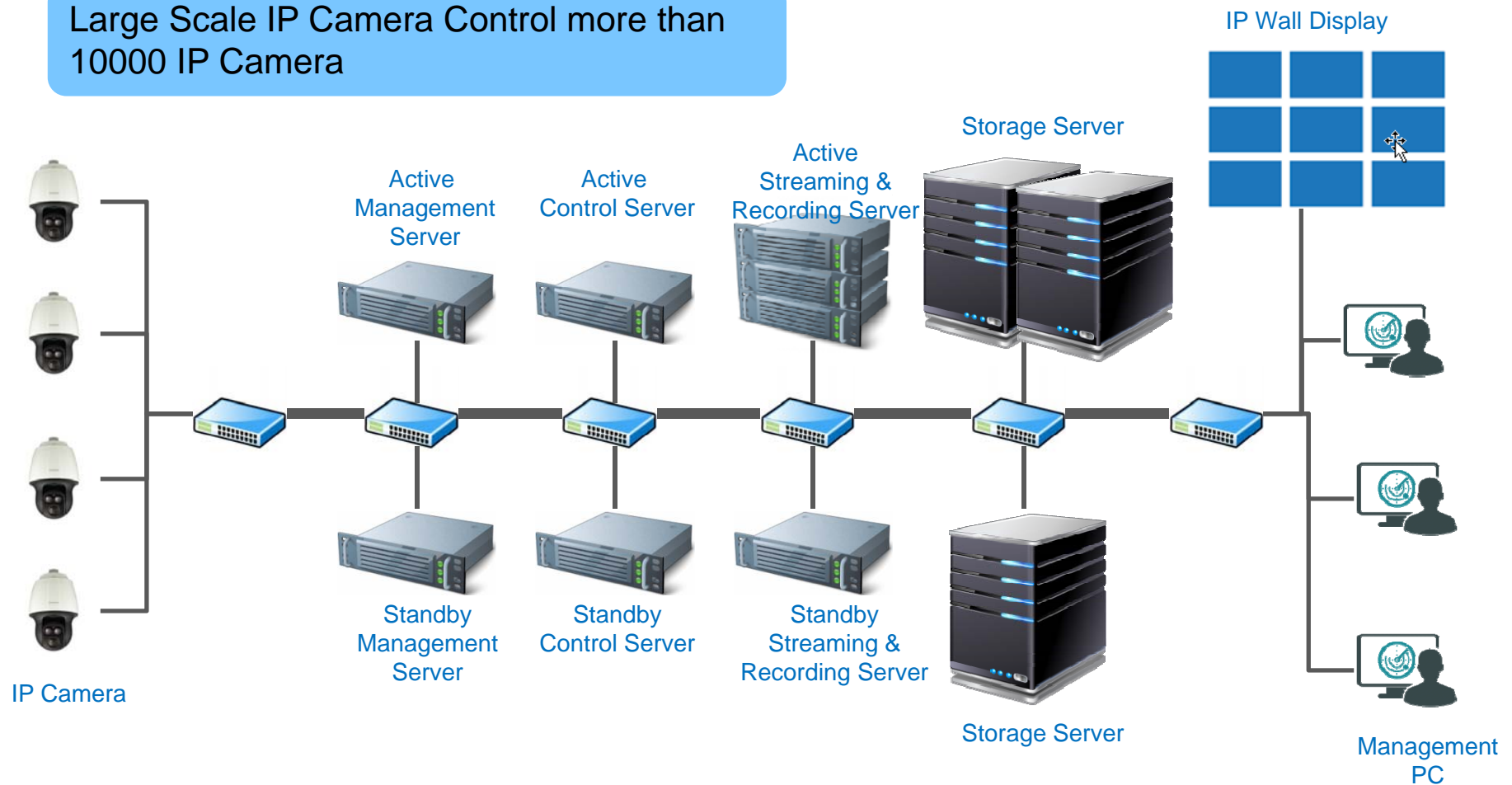


# Main Features

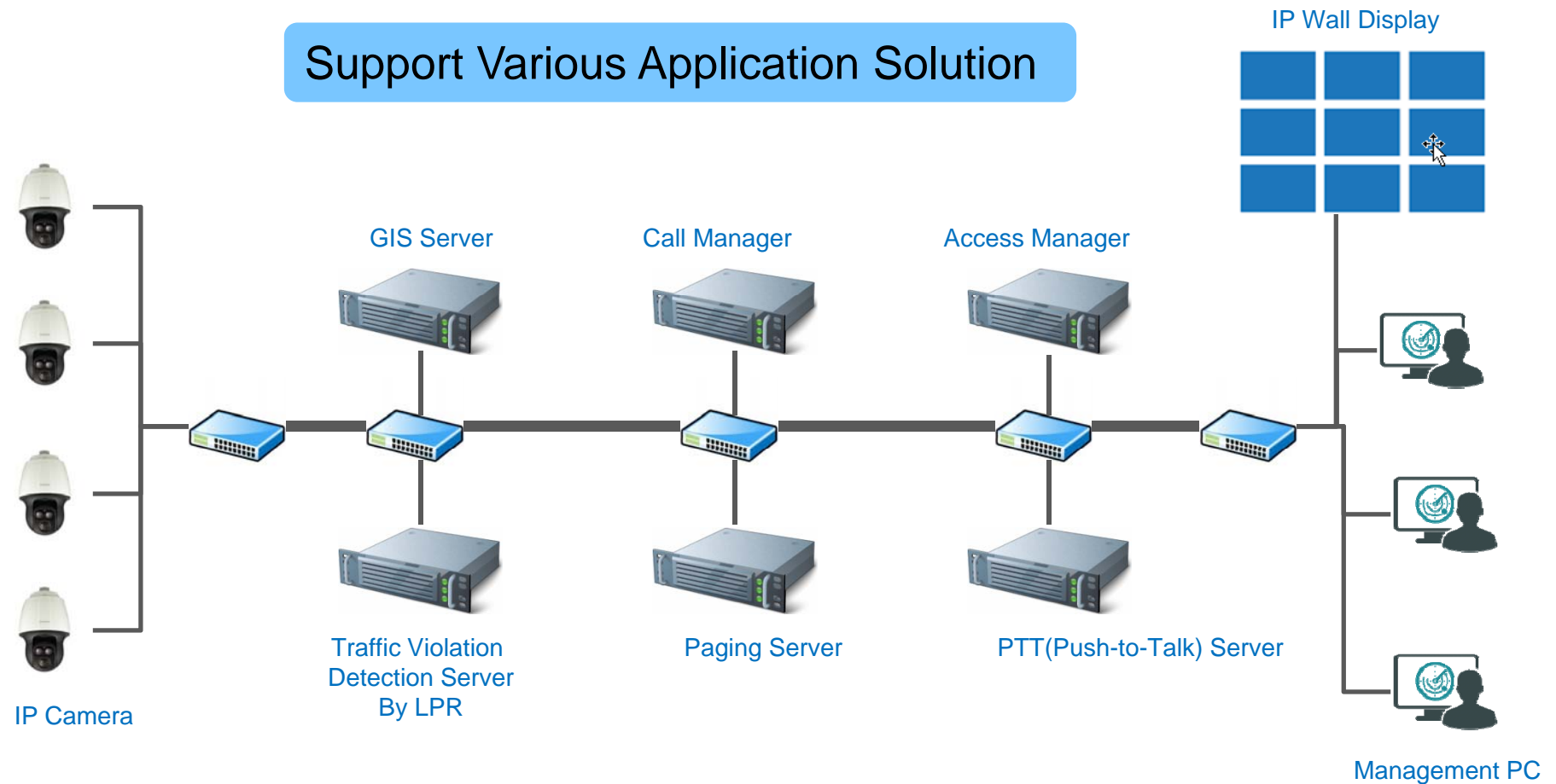
- New Enhanced Scalable Architecture for Large Scale IP Camera or Video Codec Deployment
- System Redundancy Architecture Support for Fault Tolerant and System Stability (Active–Standby)
- Extendable Architecture Support for Integrated Security Service like as Intrusion Detection, Unmanned Security Site.
- 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



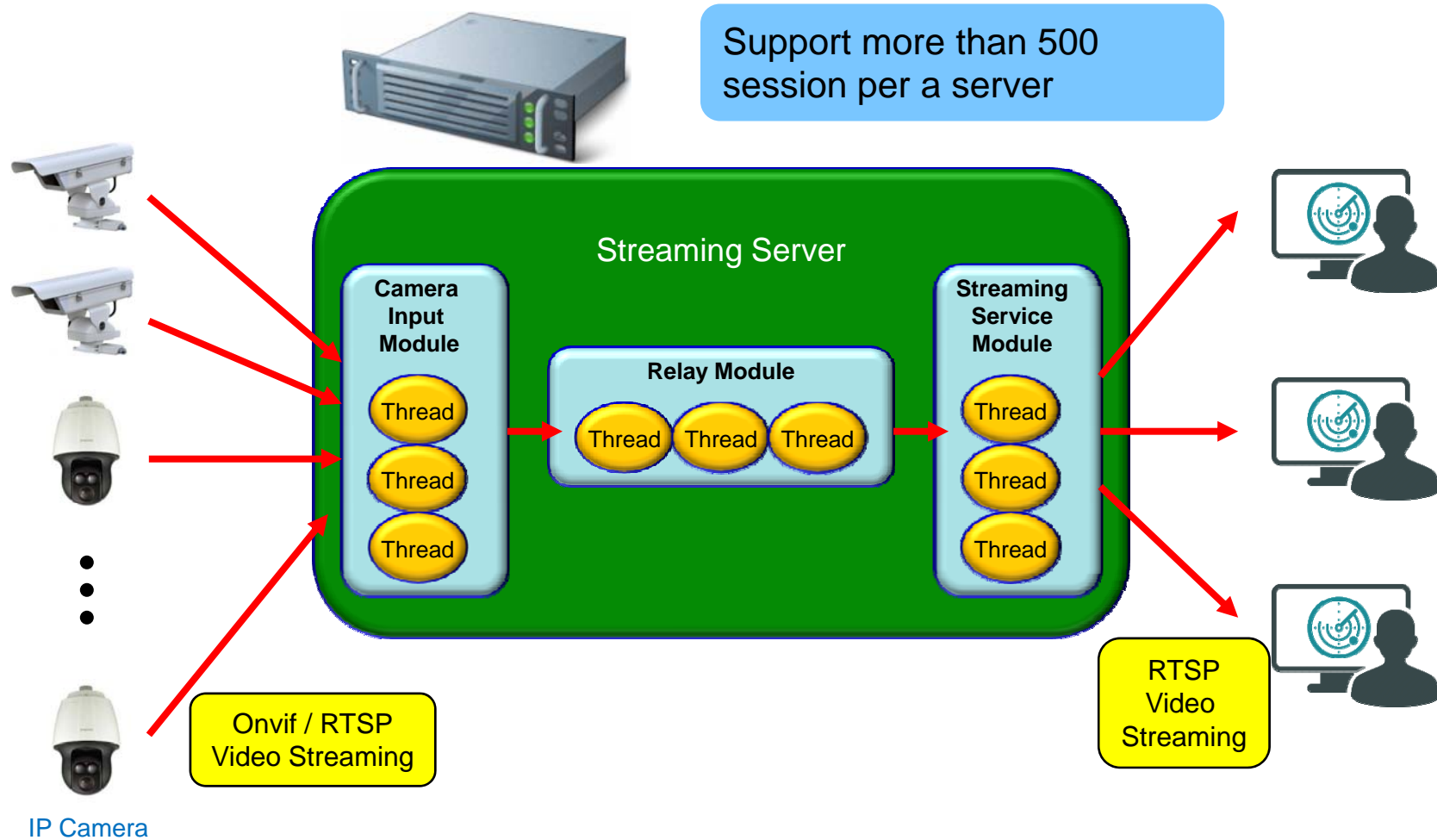
# Network Diagram





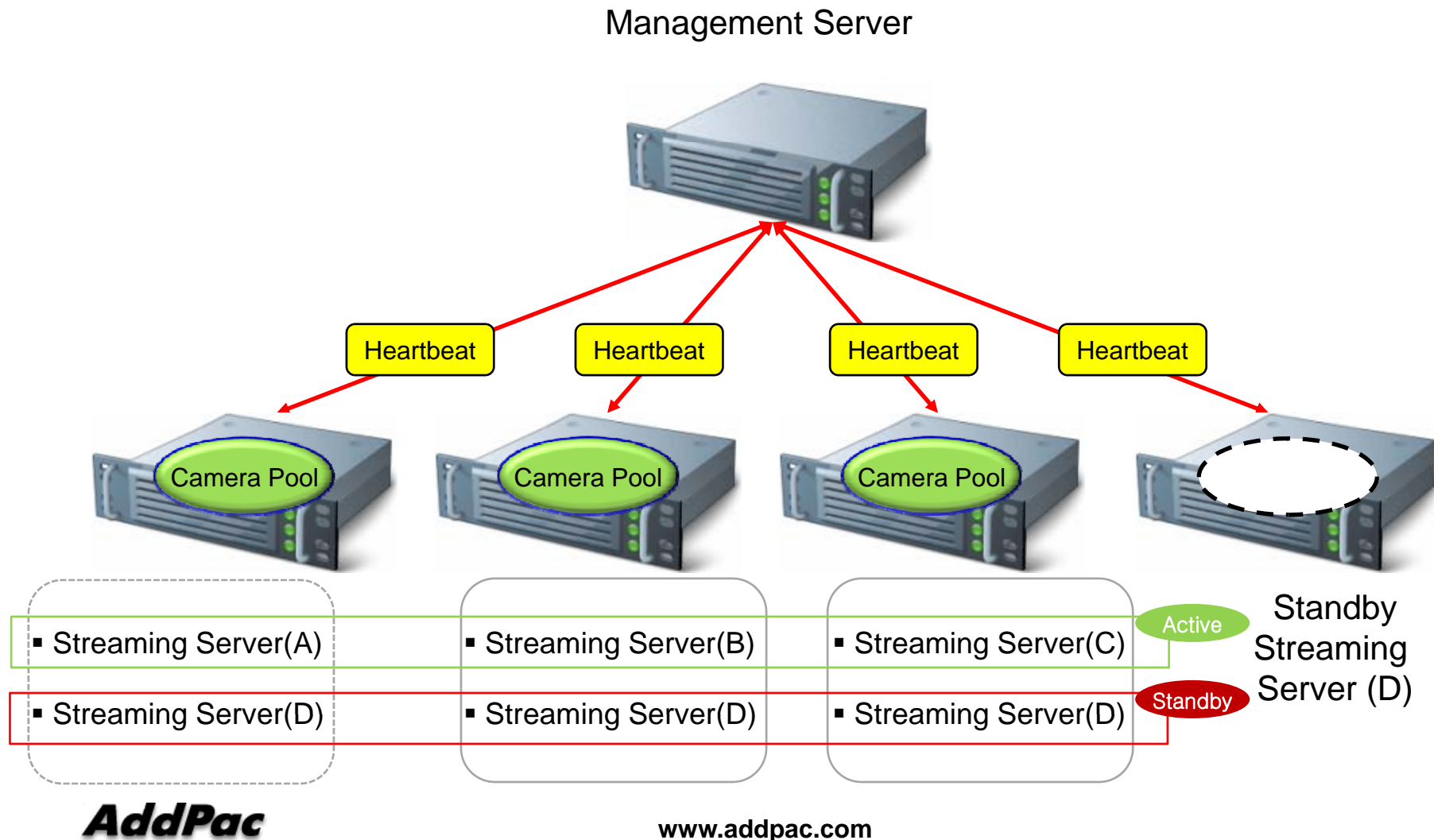
# Video Streaming Server Overview for Large Scale IP Camera Service

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

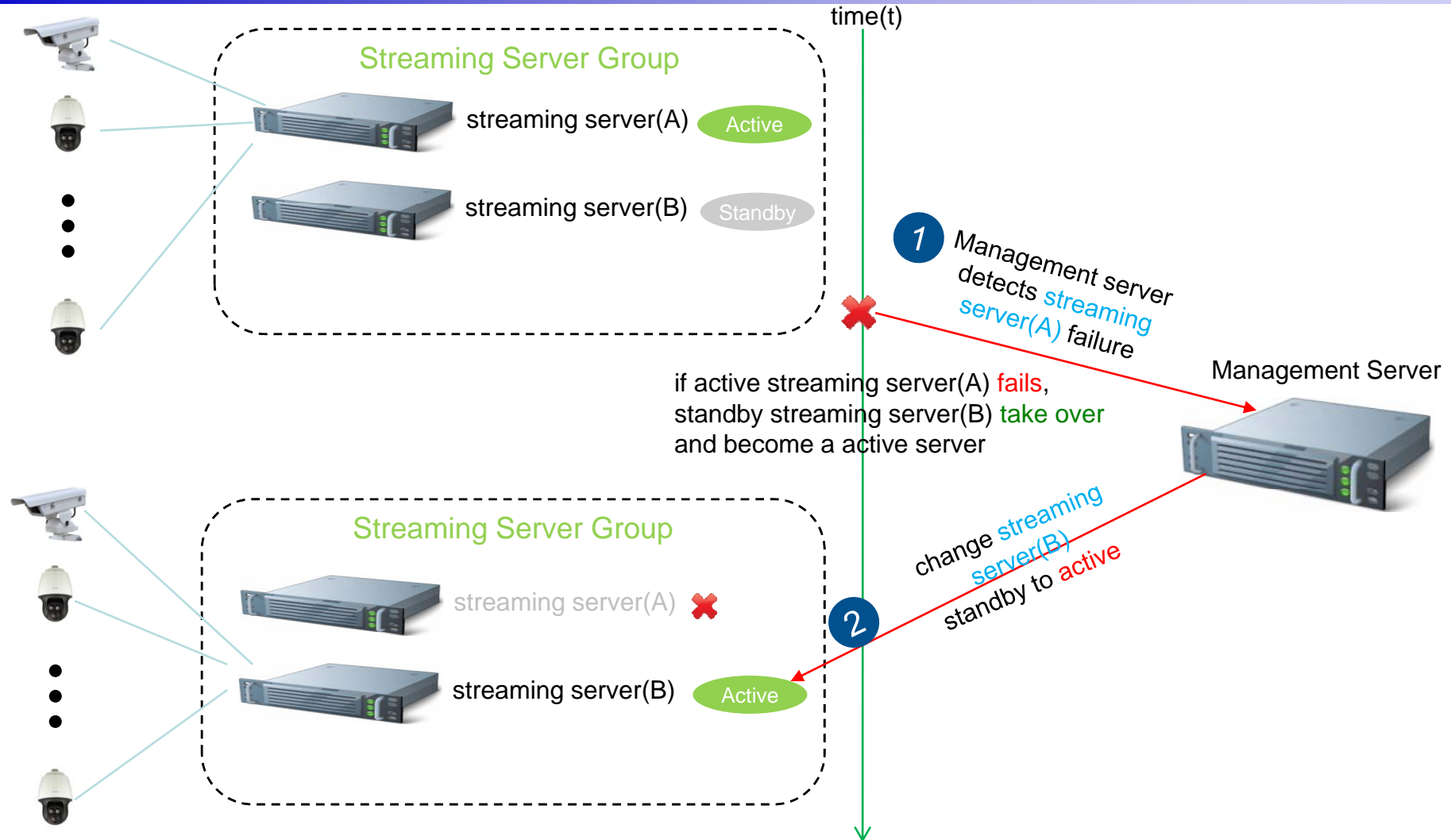




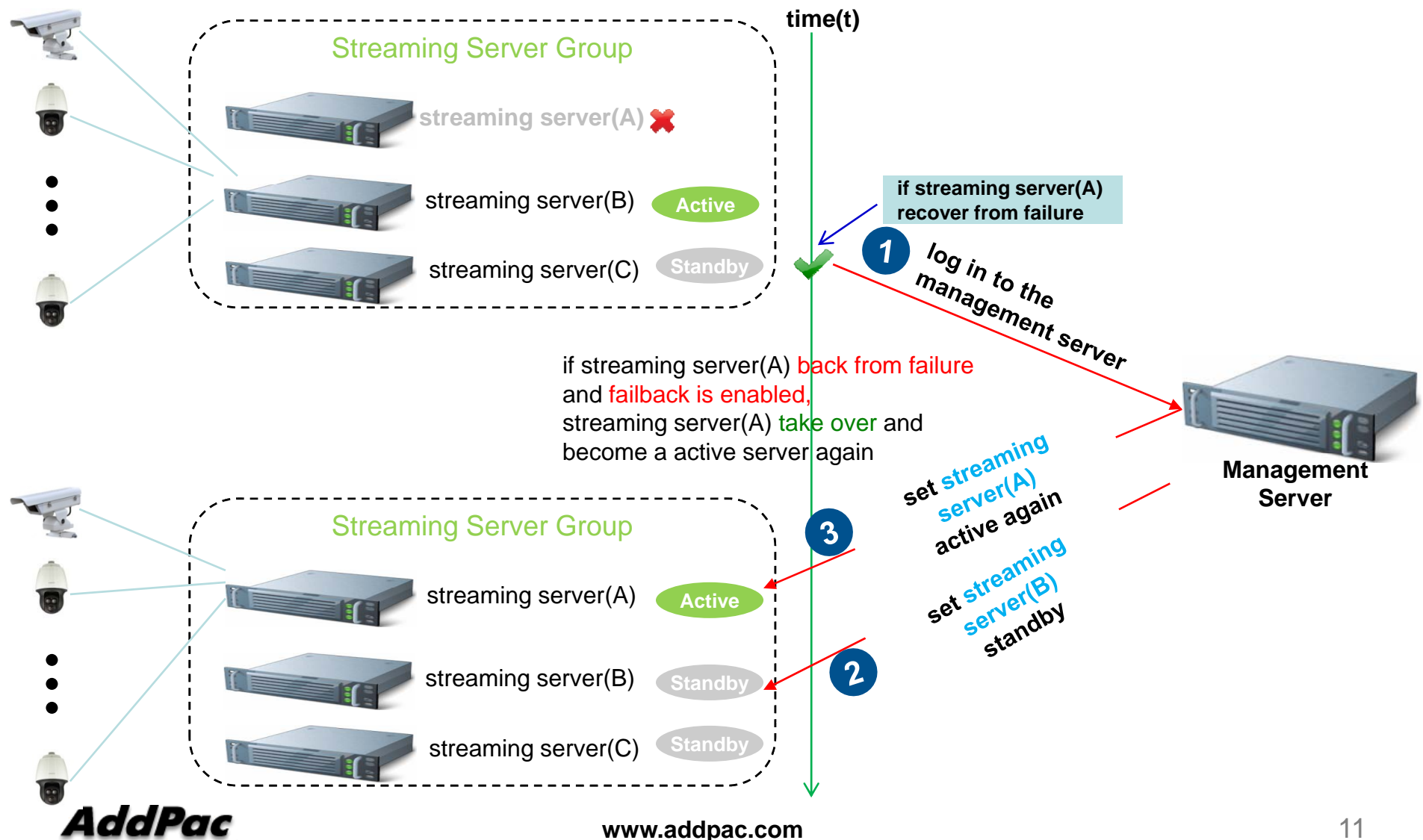
# Streaming Server support IP Camera Pool based System Redundancy ( N+1 )



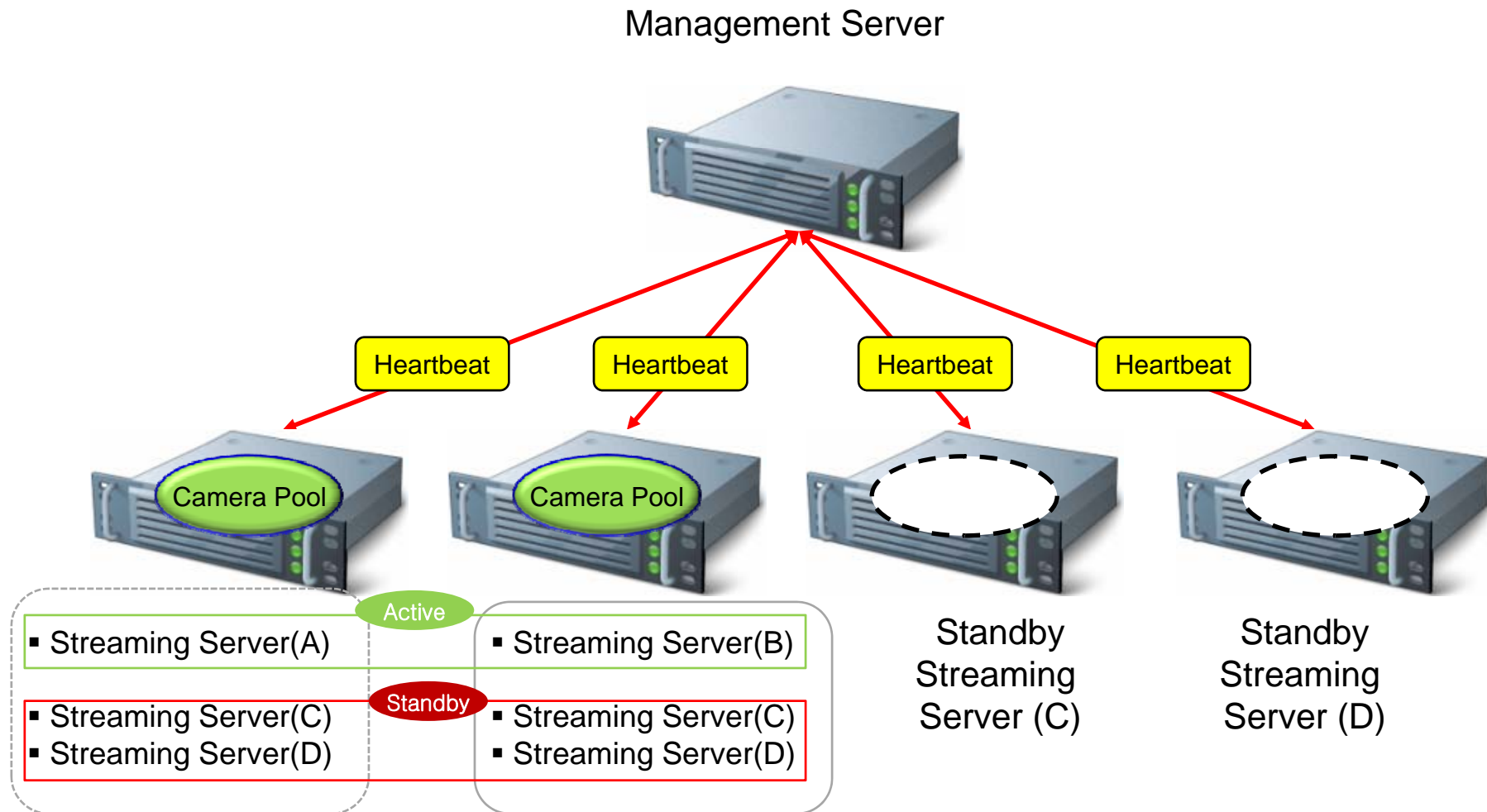
# Failover procedures in a streaming server group



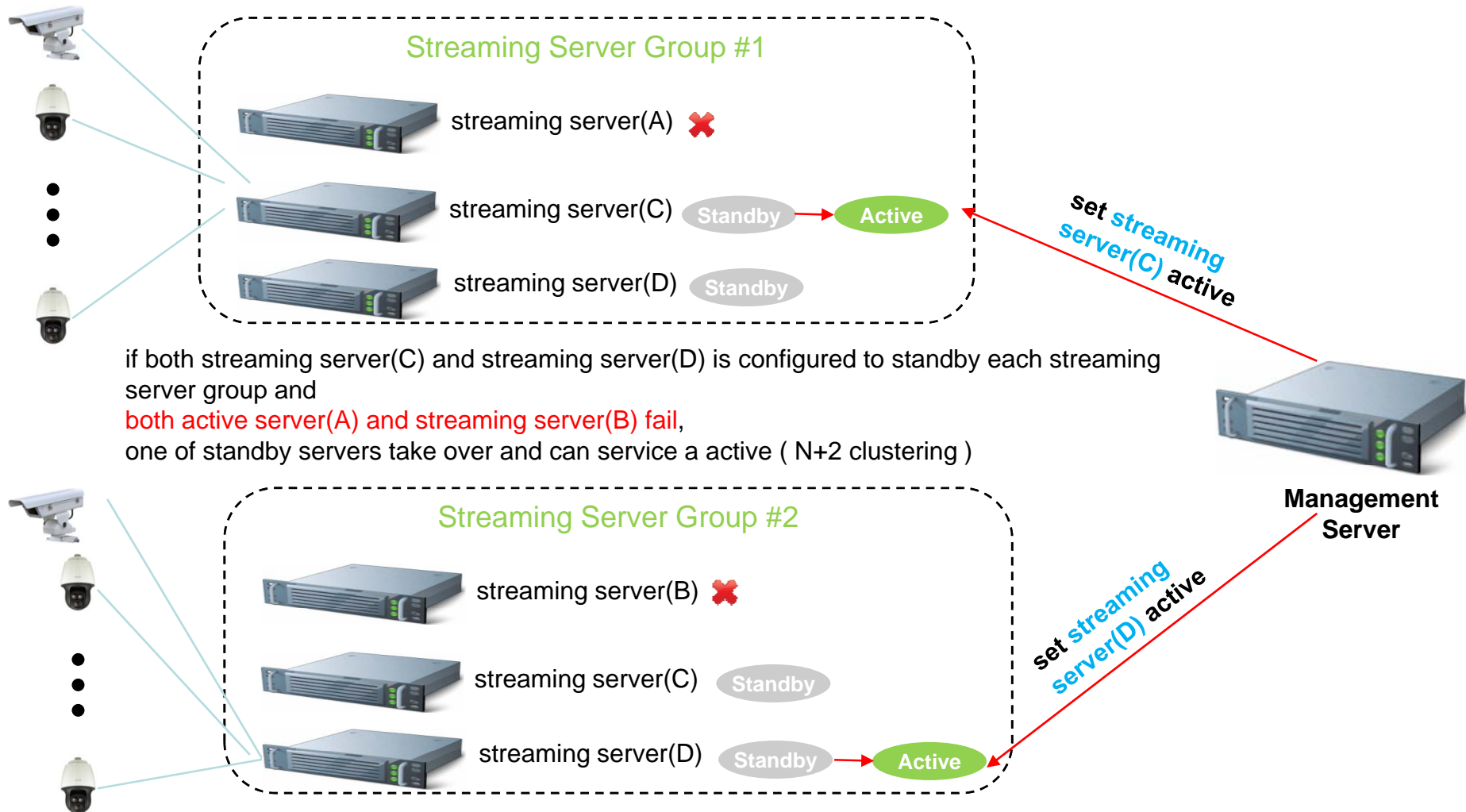
# Failback procedures in a streaming server group



# Streaming Server support IP Camera Pool based System Redundancy ( N+2 )



# Redundancy in a streaming server group with 2 standby servers





# 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 N(group):2(SS) or more redundancy
- Support configurable failover time.
- Support alarm and event.



# UI Design & Examples



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- Streaming Server Group Configuration
- IP Camera Property Configuration
- Streaming Server Monitoring
- Streaming Server Failover
- Streaming Server Failback
- Streaming Server Configuration

# Streaming Server Group Configuration

**Smart VMS**  
2.4.180108

seoul HQ  
172.16.30.169, super administrator Login 11:15 AM

Recording Record Schedule Operators **System** Maintenance Setting

SNC server Streaming Server Storage server **Streaming Server Group**

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

**Add Streaming Server Group**

Group Name: streaming server group

Streaming Server:	
Server Name	IP address
There is no items	

Assigned Streaming Server:	
Server Name	IP address
primary streaming server	172.16.30.170
secondary streaming server	172.16.30.169

Ok Cancel

## 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' user logged in. The 'Edit Camera' dialog box is open, showing the following fields:

- Device Name \*: dahua
- Protocol Type: ☐ ONVIF ☒ IP
- Streaming Server Group \*: streaming server group (selected from a dropdown)
- IP address \*: streaming server group
- Username: admin
- Password: admin\*\*admin

Below these fields is the 'Camera Information' section with the following details:

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

A red arrow points from the 'streaming server group' dropdown to the text box below.

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 2.4.180108

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

Smart VMS 2.4.180108

headquarter 172.16.30.169, super administrator Login 11:47 AM

Dashboard Devices Active Alarms 36 History

Streaming Server Storage server Camera

streaming server connected  
primary streaming server - 2018-01-09 11:44:08

	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

Search

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- ▶ addpac
- kunsan
- suwon
- yeoksam

Recording Record Schedule Operators System Maintenance **Setting**

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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