



Introduction of VMS - Unicorn



Contents



01 | General Introduction

02 | Key Features

03 | Typical Networking

04 | Successful Cases



General Introduction

What is Unicorn?



What kind of devices do we usually need for a general video surveillance project?

Buy VMS and license?

Prepare PC to run VMS?

Recorder for recording and playback?

Decoder for Video Wall display?

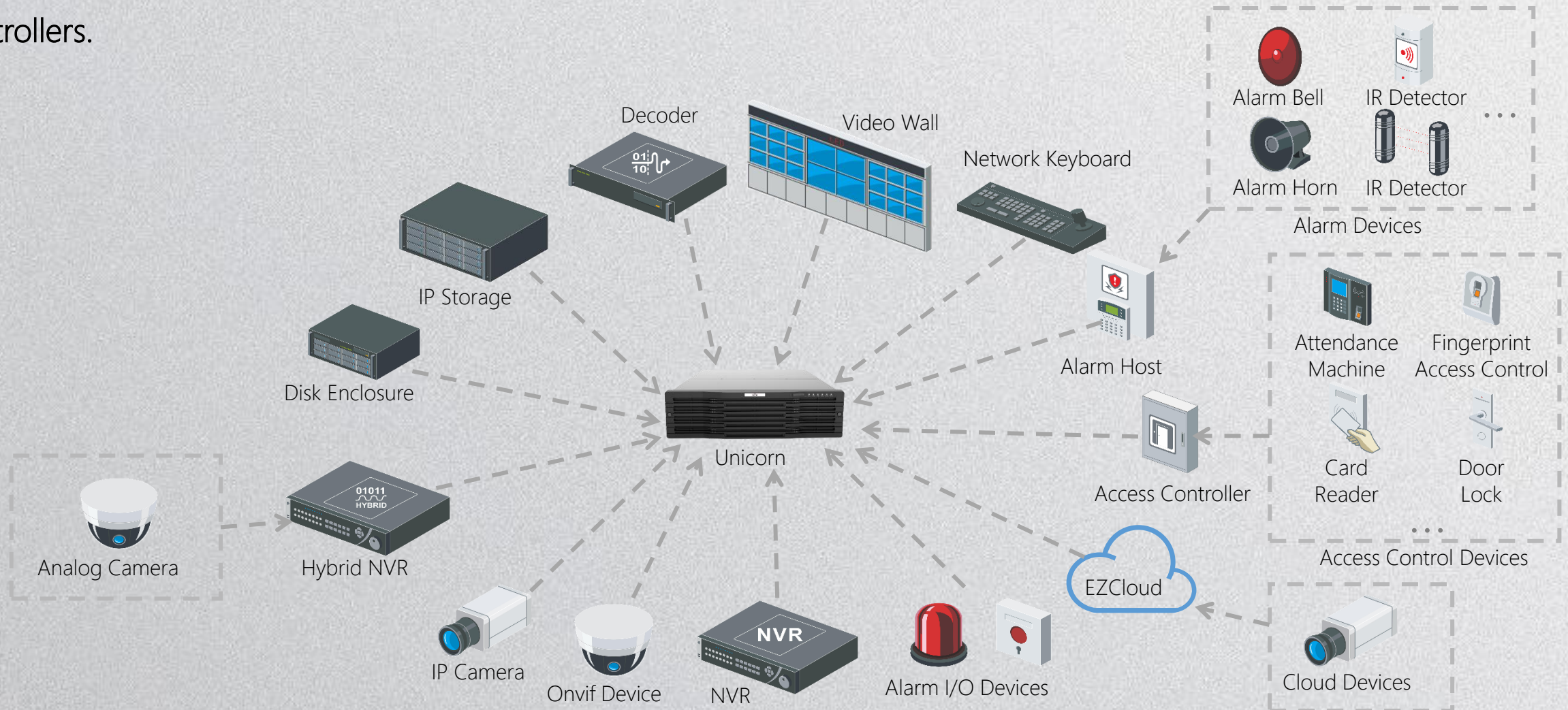
Storage Server to manage IP Storage devices?

Media Switch Server for video stream switching?



Unified Management Platform

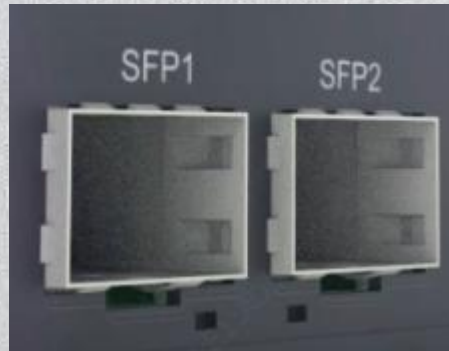
Unicorn can manage various devices such as IP Camera, NVR, Hybrid NVR, Decoder, Network Keyboard, Disk Enclosure, IP Storage, Cloud Devices, Video Wall. it can also support Onvif Devices and integration of Alarm Hosts and Access Controllers.



Hardware Overview

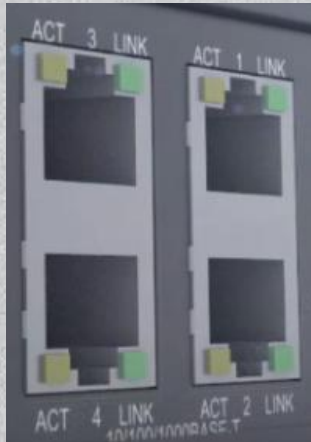
2 x SFP Ports

Optical Fiber



4 x GE Ports

Multi Address
Load Balance
Fault Tolerant



2 x Power Supply

Redundant Design



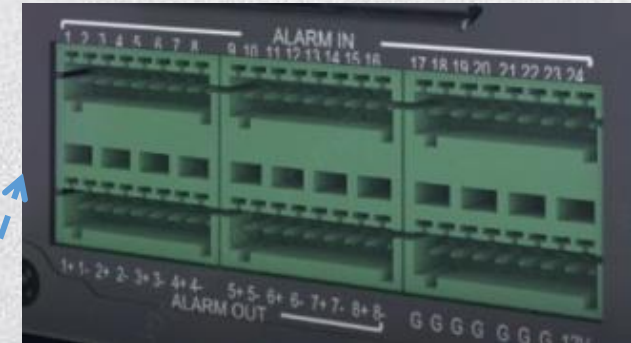
Decoder Card

4-HDMI and 6-HDMI optional



Alarm I/O

24 In / 8 Out



2 x Mini SAS

Expandable to 48 HDD



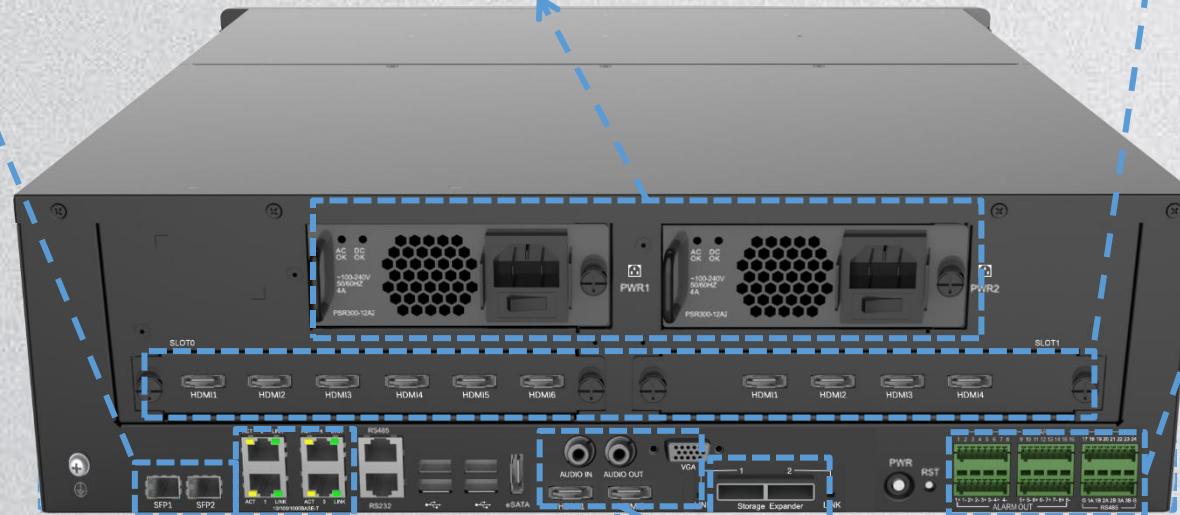
Built-in Decoder

16 SATA

Built-in Storage

2 x HDMI

1 x VGA



Key Specifications

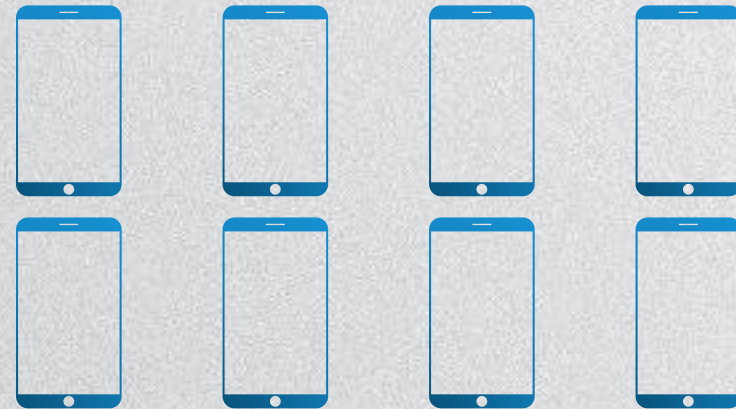
Max. Online Client Users

300 Users

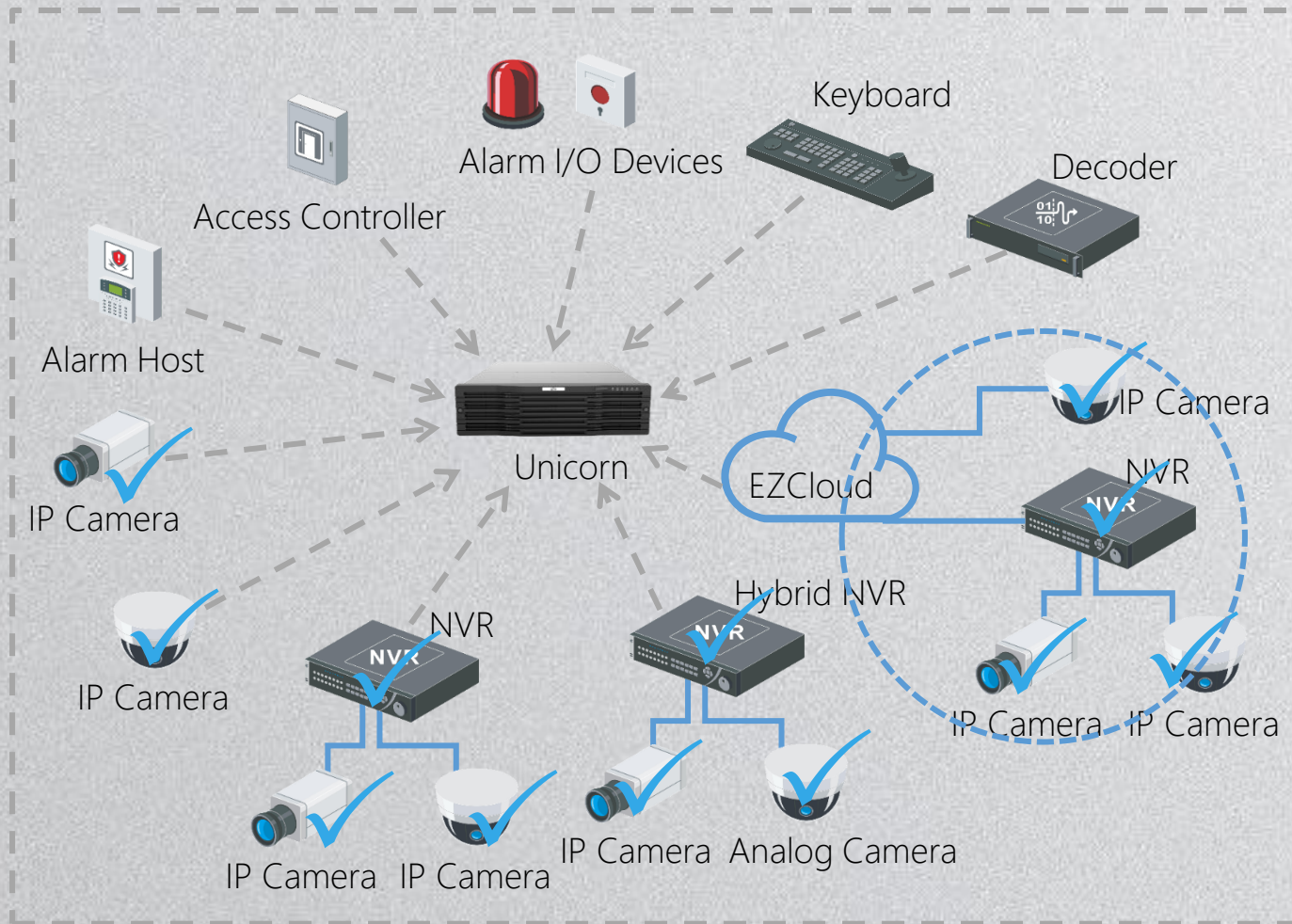


Among above, Max. Online Mobile Client Users

64 Mobile Users



Key Specifications



Max. Management Devices

1000 Devices

Among above, Max. Cloud Devices

256 Cloud Devices

Max. Management Channels

2000 Channels

Key Specifications

Max. Input Bandwidth

512Mbps

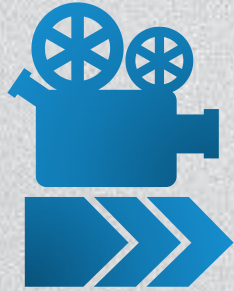


Max. Output Bandwidth

384Mbps

Max. Recording Channels

256 Channels



Max. Playback Channels at one time

24 Channels



#The above parameters are for single server, parameters for whole system can be increased by adding slave servers.

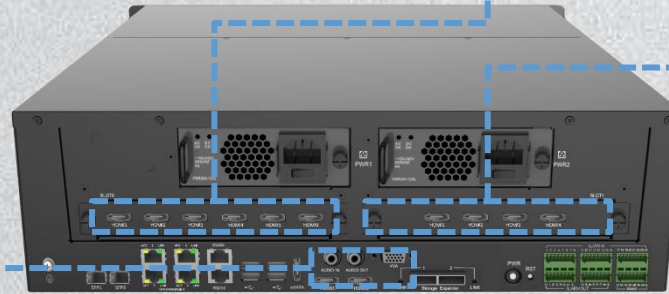
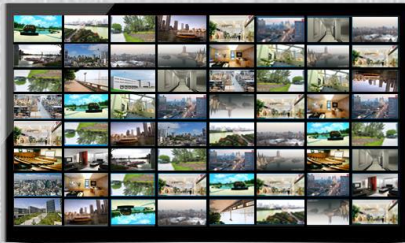
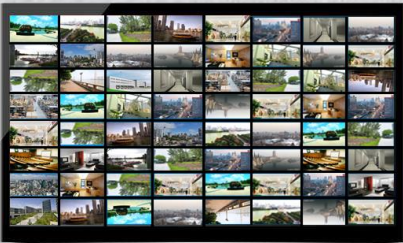
Key Specifications

VGA:

Up to 36 Windows

HDMI:

Up to 64 Windows



Build-in Decoding Ability

Built-in Decoder (2 x HDMI, 1 x VGA)

Up to 64 Windows for each HDMI port

Up to 16 x 1080P@30 for 3 Ports

(64 x D1@30, 128 x CIF@30)

Decoder Card (6-HDMI and 4-HDMI optional)

Up to 16 Windows for each HDMI port

Up to 96 x 1080P@30 for 2 x 6-HDMI decoder card

(192 x 720P@30)

Key Features

Ultra 265

To save money for clients on cost of network devices and HDDs

Ultra 265



Ultra 265

The most popular video compression technology in video surveillance industry

The most advanced video compression technology in video surveillance industry

The deep video compression technology of Uniview to reduce the bitrate based on H.265

Up to **75% OFF**



Hard disk usage in the same application

Ultra 265 Typical Application

35-ch 2MP@25 Record

30x24h Hard Disk Usage



12 x 4T



H.264 Solution



Ultra 265 Solution

3 x 4T



Record **More in the Same Application**

Key Features

Easy to Use

To make video surveillance operation much easier

Various Clients



B/S Client

For management and configuration



C/S Client

For operations including Preview, Playback, E-Map, Video Wall control and etc.



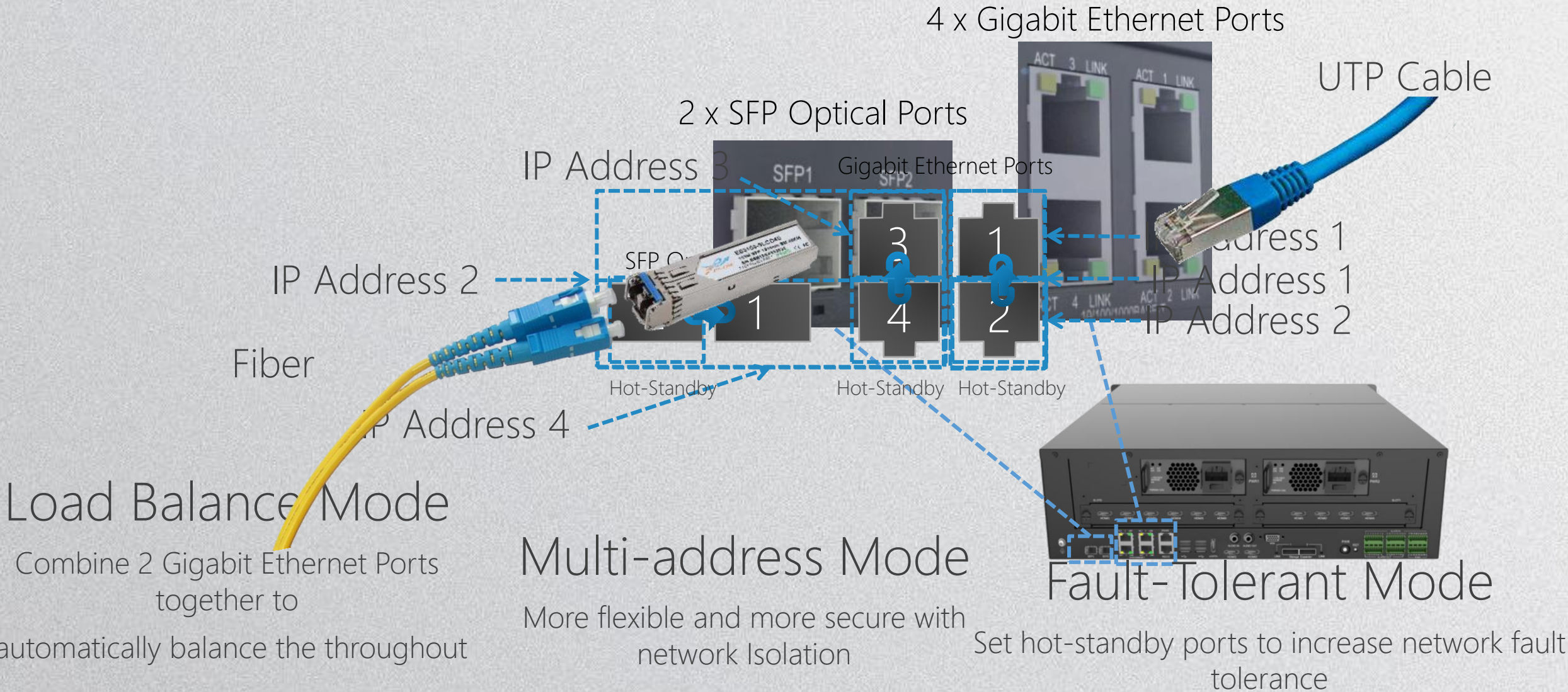
Mobile Client

For remote operation including Preview, Playback, Alarm control and etc.



Flexible Network Interface

Unicorn support various network access interface and working mode.



Easily Device Search

It's very easy to batch search and batch add devices to server.



Auto Search

Automatically search



Start IP: 10.15.125.23

End IP: 10.15.125.80

Specify network segment



IP: 10.15.125.67

Specify IP address

10.15.125.92



10.15.125.26



10.15.125.28



10.15.125.89



10.15.125.88



10.15.125.29



10.15.125.84



10.15.125.32



10.15.125.82



10.15.125.36



10.15.125.73

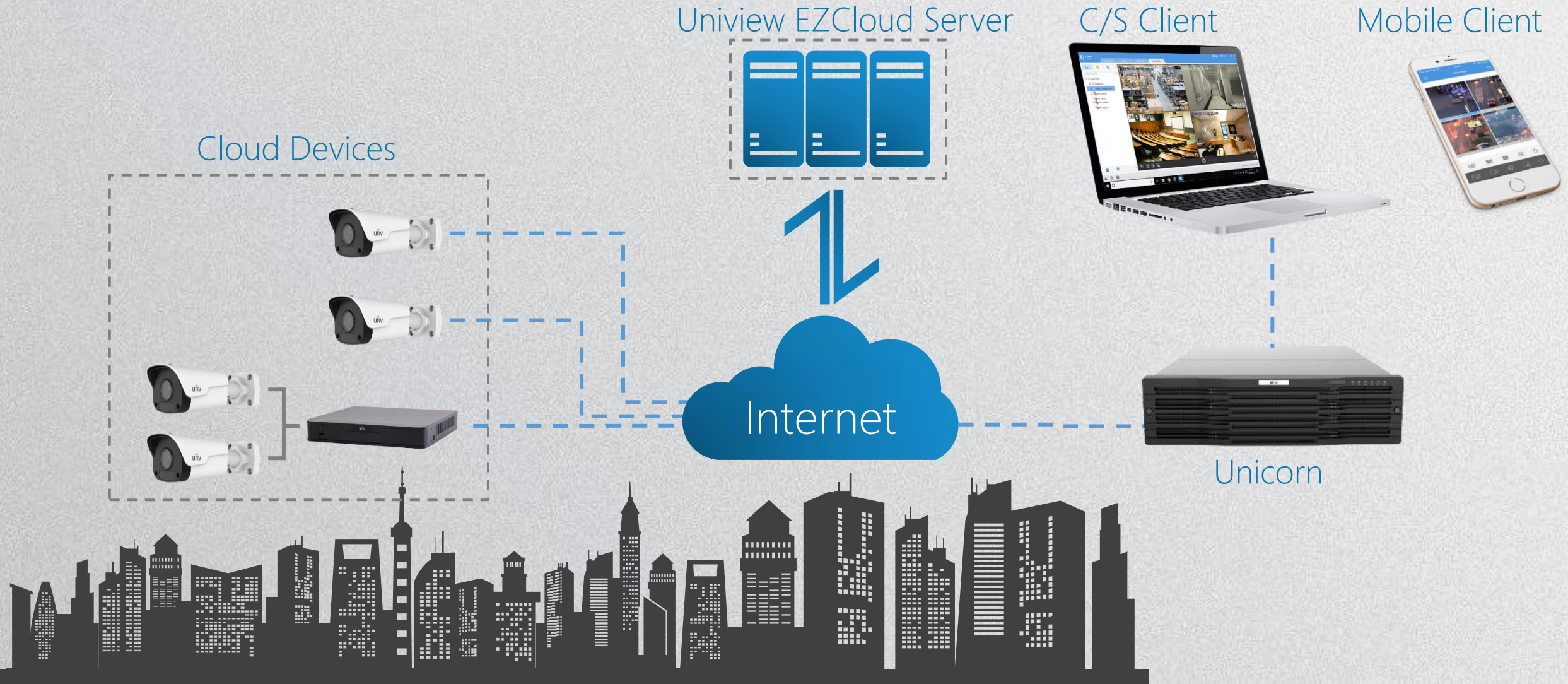


10.15.125.67



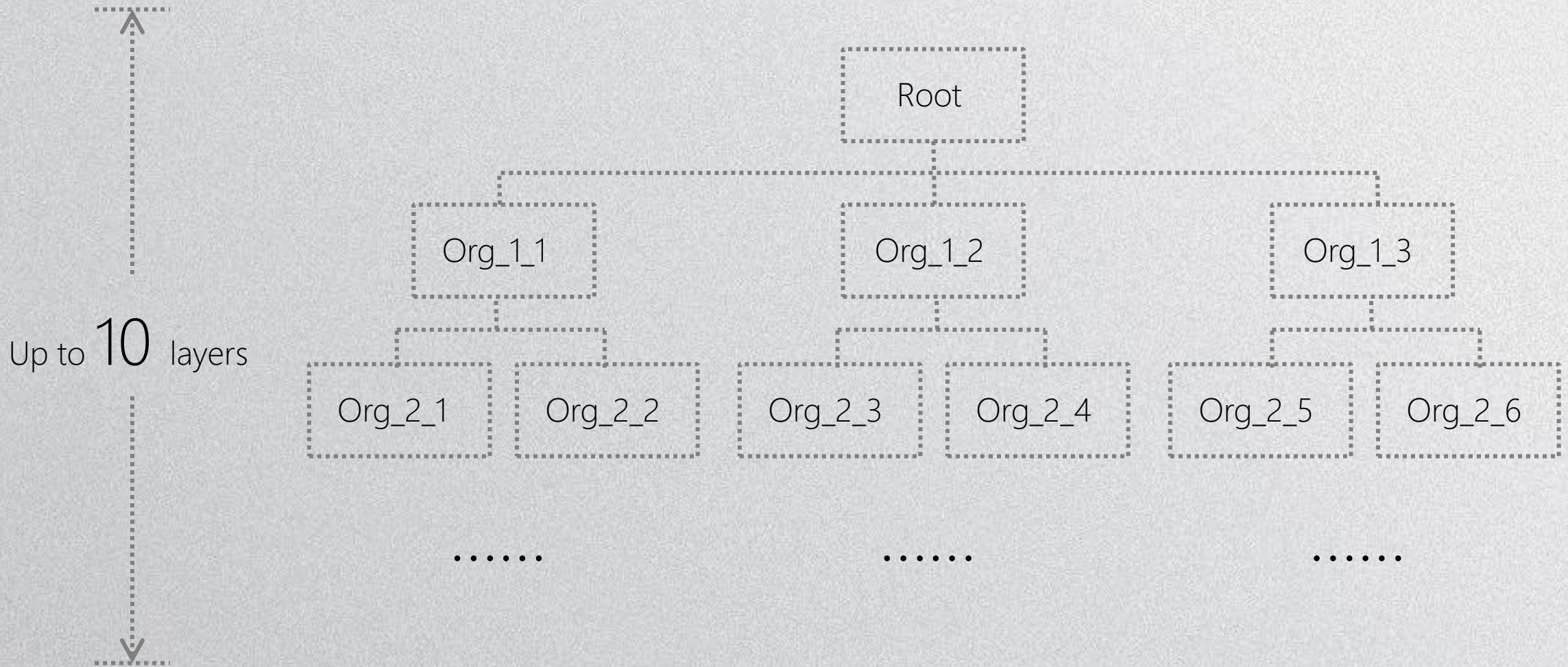
Cloud Device Access

Unicorn can add cloud devices via internet (up to 256 cloud devices for single Unicorn), so the Client software can do live view and playback remotely.



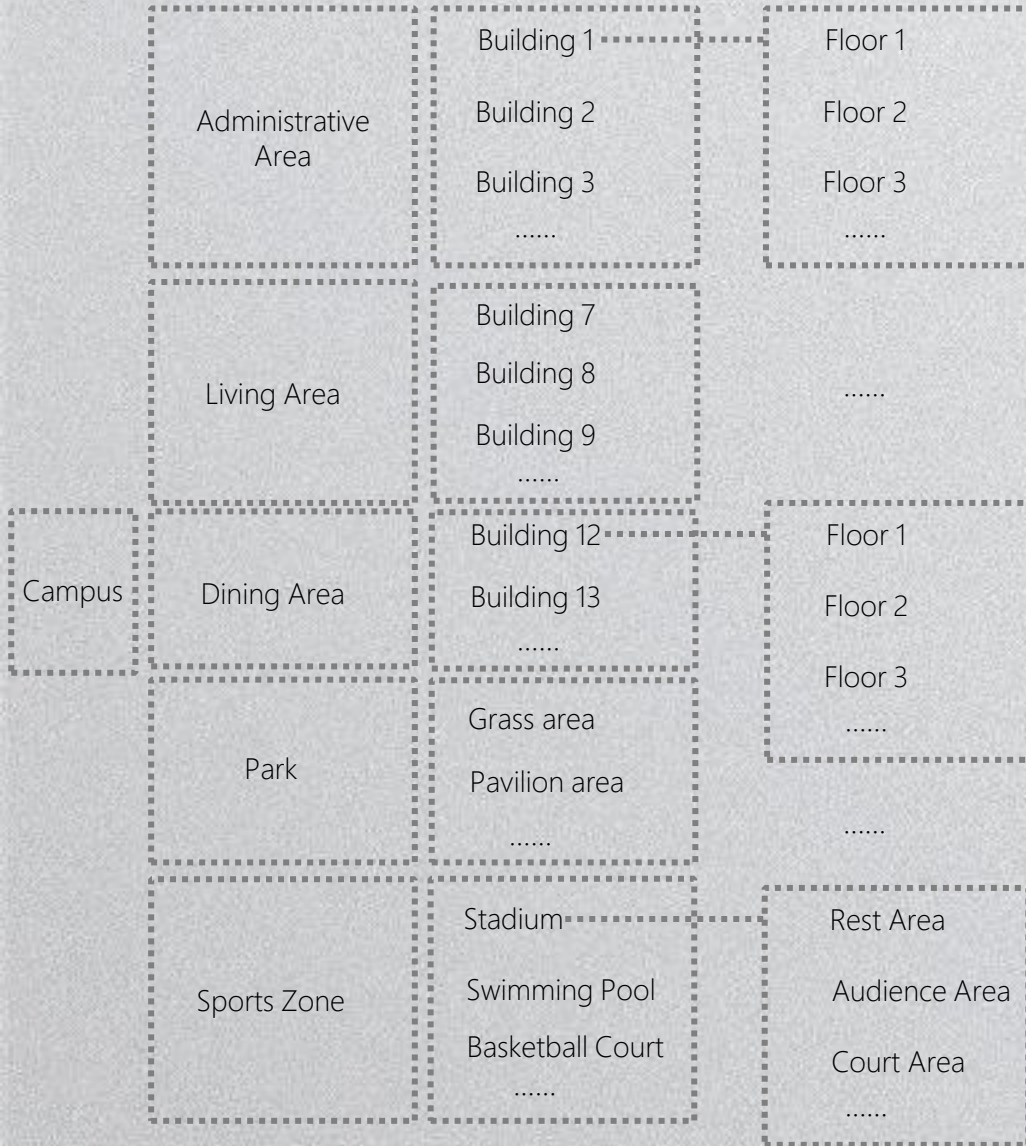
Organizations

Administrators can create organization and assign devices and channels to specific organizations, which can make all channels more organized and much easier to be located.



Organizations

For example, if there is a campus with different areas, you can build organization based on different areas.



Assign video channels, audio channels, alarm I/O channels to organizations, then all devices and channels can be organized and easy to be located.

User and Role Management

The user management system contains two parts: User and Role.

"Role" is used to define a type of person.

"User" is used to define a individual person or account.

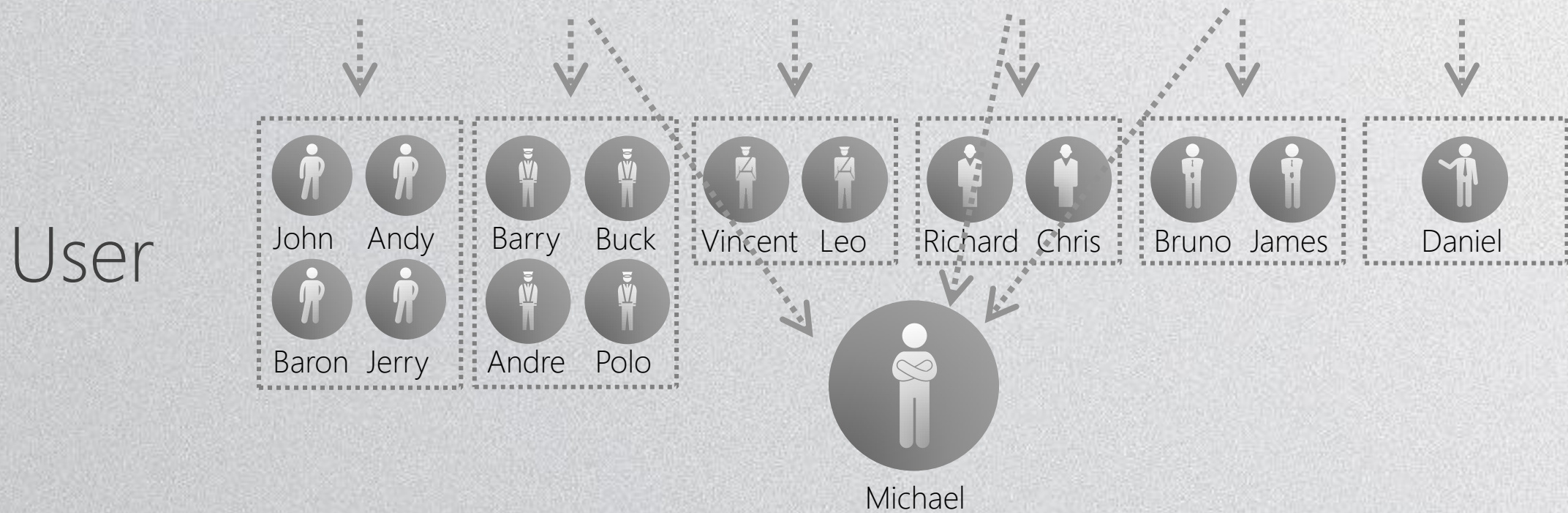


Role

Guest	Security	Security Captain	Manager	Director	CEO
☒ Preview ☐ Playback ☐ E-map ☐ Audio ☐ Alarm ☐ Recording Plan ☒ Dining Area ☐ Administrative Area ☐ Park ☐ Sports Zone ☐ Log ☐ Management	☒ Preview ☒ Playback ☒ E-map ☒ Audio ☒ Alarm ☐ Recording Plan ☒ Dining Area ☐ Administrative Area ☒ Park ☒ Sports Zone ☐ Log ☐ Management	☒ Preview ☒ Playback ☒ E-map ☒ Audio ☒ Alarm ☐ Recording Plan ☒ Dining Area ☐ Administrative Area ☒ Park ☒ Sports Zone ☒ Log ☐ Management	☒ Preview ☒ Playback ☒ E-map ☒ Audio ☒ Alarm ☒ Recording Plan ☒ Dining Area ☐ Administrative Area ☒ Park ☒ Sports Zone ☒ Log ☐ Management	☒ Preview ☒ Playback ☒ E-map ☒ Audio ☒ Alarm ☒ Recording Plan ☒ Dining Area ☒ Administrative Area ☒ Park ☒ Sports Zone ☒ Log ☒ Management	☒ Preview ☒ Playback ☒ E-map ☒ Audio ☒ Alarm ☒ Recording Plan ☐ Dining Area ☒ Administrative Area ☒ Park ☒ Sports Zone ☒ Log ☒ Management

For example, you can create several roles first, Configure detail permissions for each role.

User and Role Management



Then create individual users based on role, user will inherit all permissions from corresponding role.
One user can have several roles(up to 16 roles), the permissions will also be sum of all roles.

Easy Preview



Auxiliary Monitor

C/S Client support 1 main monitor and up to 3 additional auxiliary monitors to do preview



PTZ 3D Positioning

Extremely easy to control PTZ cameras by mouse click and drag



Custom Views

Quickly save and recall favorite windows layout and bound channels



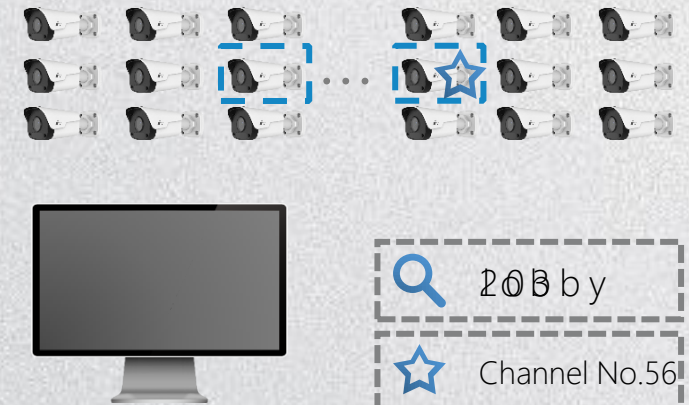
Digital Zoom Snapshot

Snapshot and integrate original image and digital zoom image together



Sequence Display

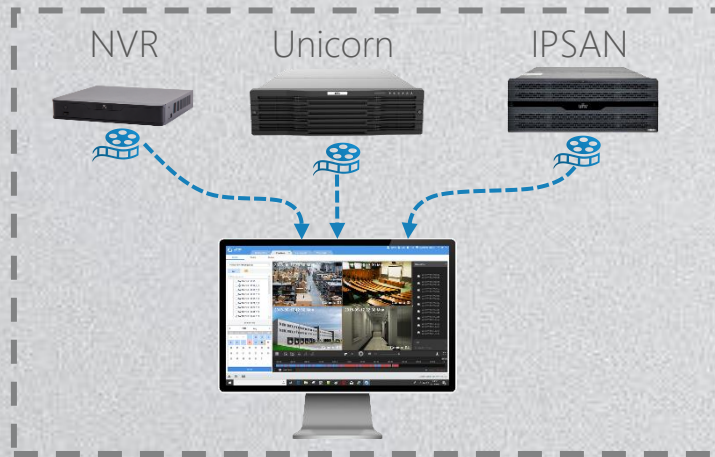
Display more even with limited screen and decoding ability



Quick Lookup of Channels

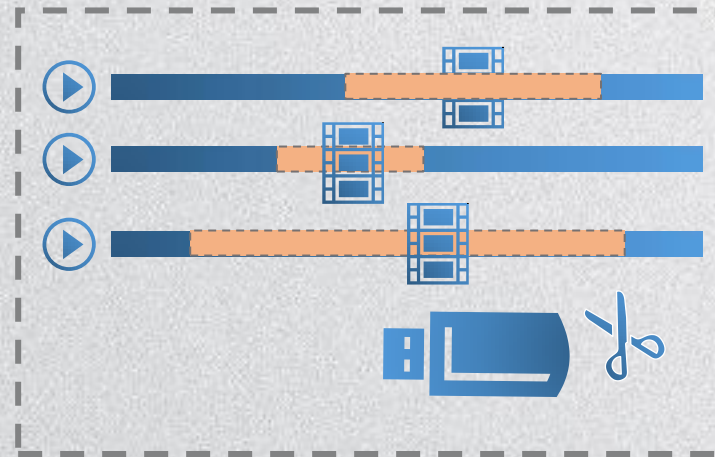
Quickly find specific channels by Favorites folder or Key words

Easy Playback



Multiple Playback Source

The Clients can playback from various recording devices and just operate in the same interface



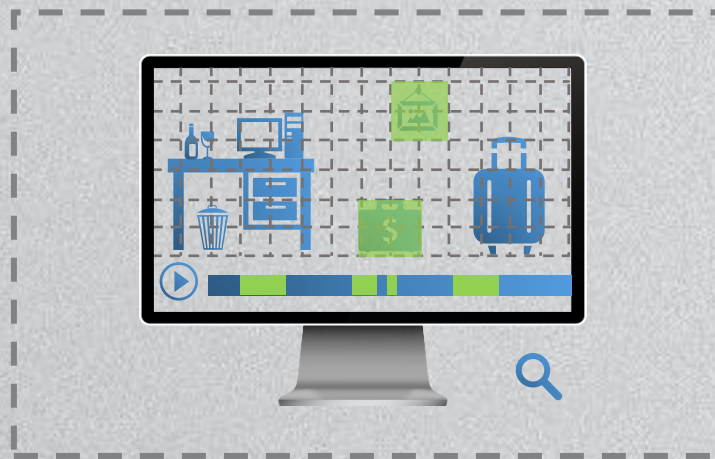
Quick Video Clipping

Just 2 mouse clicks to get video clips and easily export to external devices



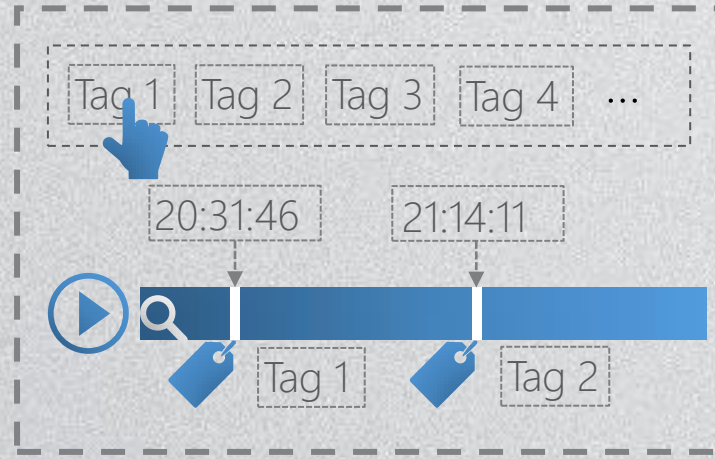
Instant Playback

Directly and instantly playback on preview window for lasted 30s to 300s video recordings



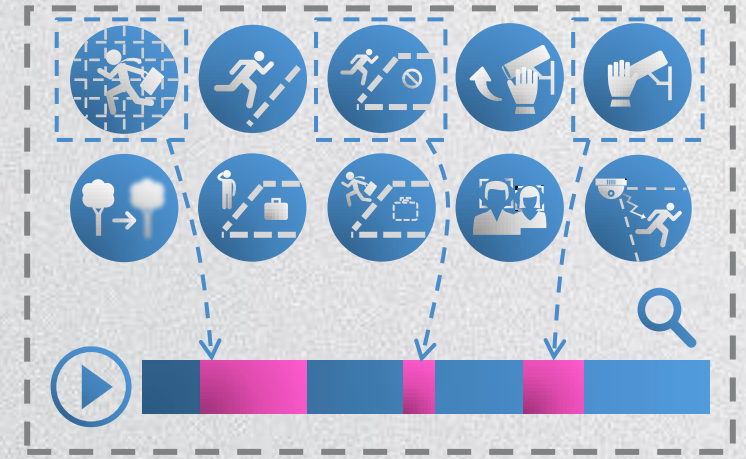
Smart Search

Quickly search out all video clips which motions triggered in specific area



Tagged Playback

Add tags at any time during playback and quickly return to it when needed

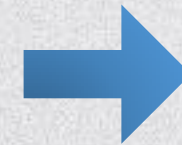
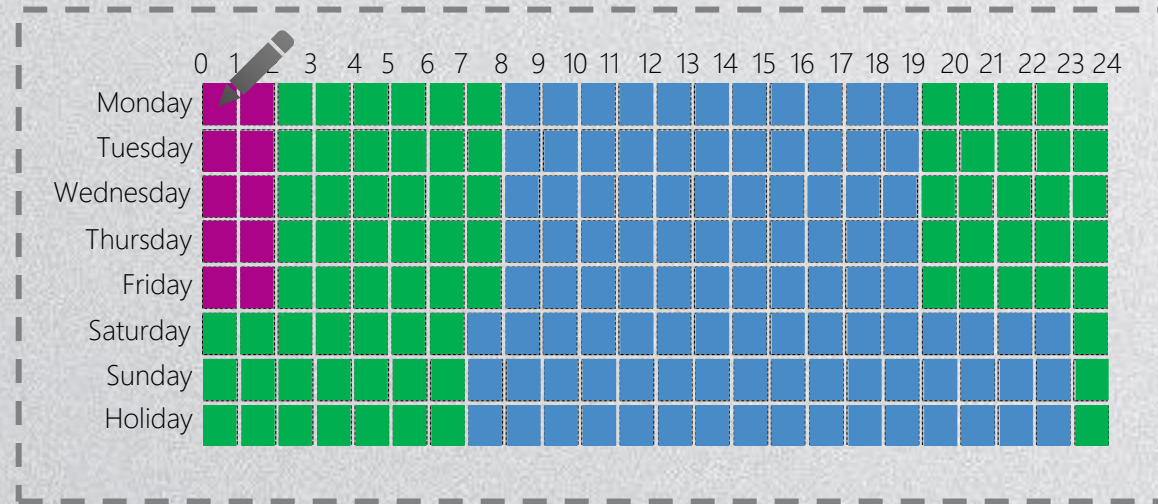


Events Playback

Easily Search event recordings including motion detection, alarms, intelligent events

Easily Make Recording Schedule

It is very easy to make recording schedule in Unicorn, you can just draw schedule by virtual pencil, and the schedule can be saved as template and easily be applied to other channels.



Time Template



Channel 02



Channel 03



Channel 04



Channel 05



Channel 06



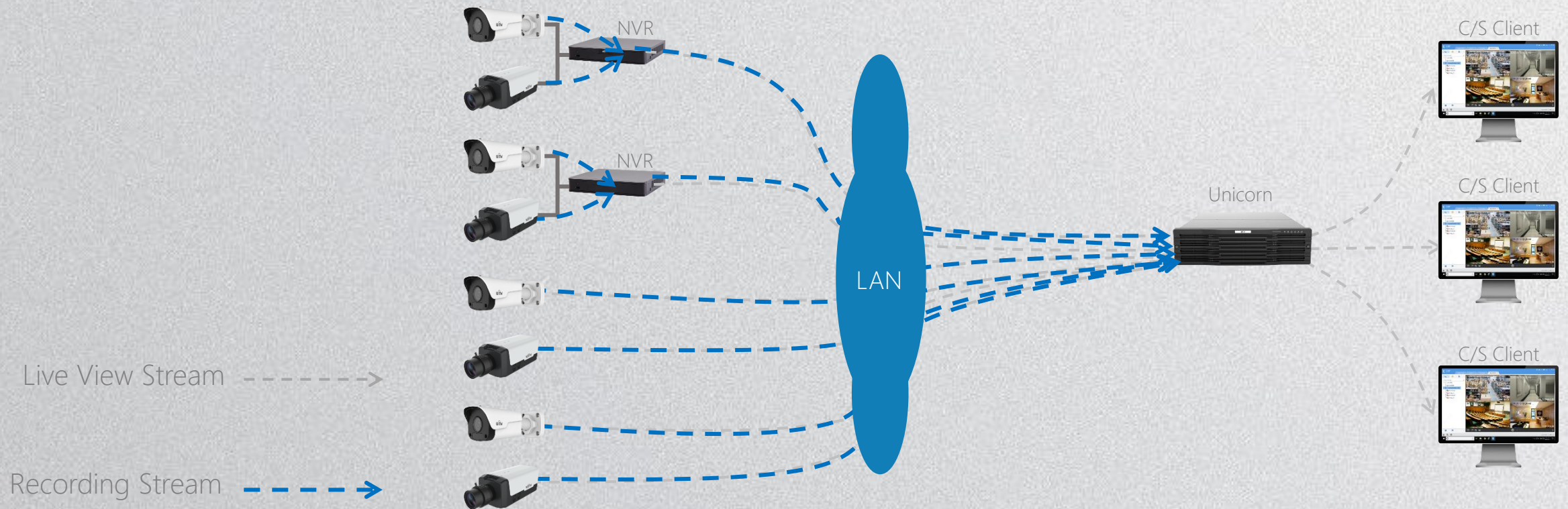
Channel 07



Central Storage

The video stream from IP cameras can be recorded in NVR locally, then the server just act as central management platform, and do video stream forwarding to C/S Clients.

When needed, the video streams can also be stored in central server, it can be from IP camera to server directly, and can be from IP camera to server via NVR.

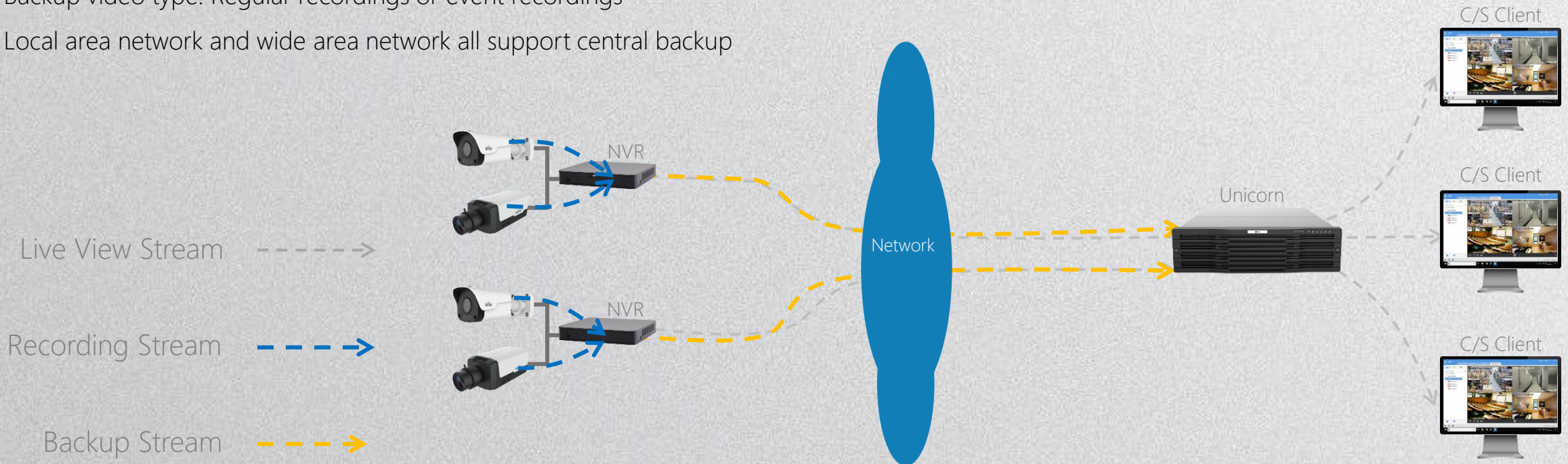


#Note: IP Camera, NVR, Unicorn should be in the same local network to do central storage

Central Backup

The video stream from IP cameras can be recorded in NVR locally, when needed, it support to save an extra copy from NVR to Unicorn as backup.

- ① Backup speed: 1x 2x 4x or 8x (depend on network bandwidth)
- ② Backup date: 1~30 days ago
- ③ Backup frame type: Full frame backup mode
- ④ Backup video type: Regular recordings or event recordings
- ⑤ Local area network and wide area network all support central backup



Direct to Video Wall

Unicorn can directly output to video wall via built-in decoder(including on board HDMI ports and decoder cards), compare with traditional VMS server, Unicorn don't need additional decoders when number of monitors is under 14 and decoding ability under limitations(refer to Key Specification part)

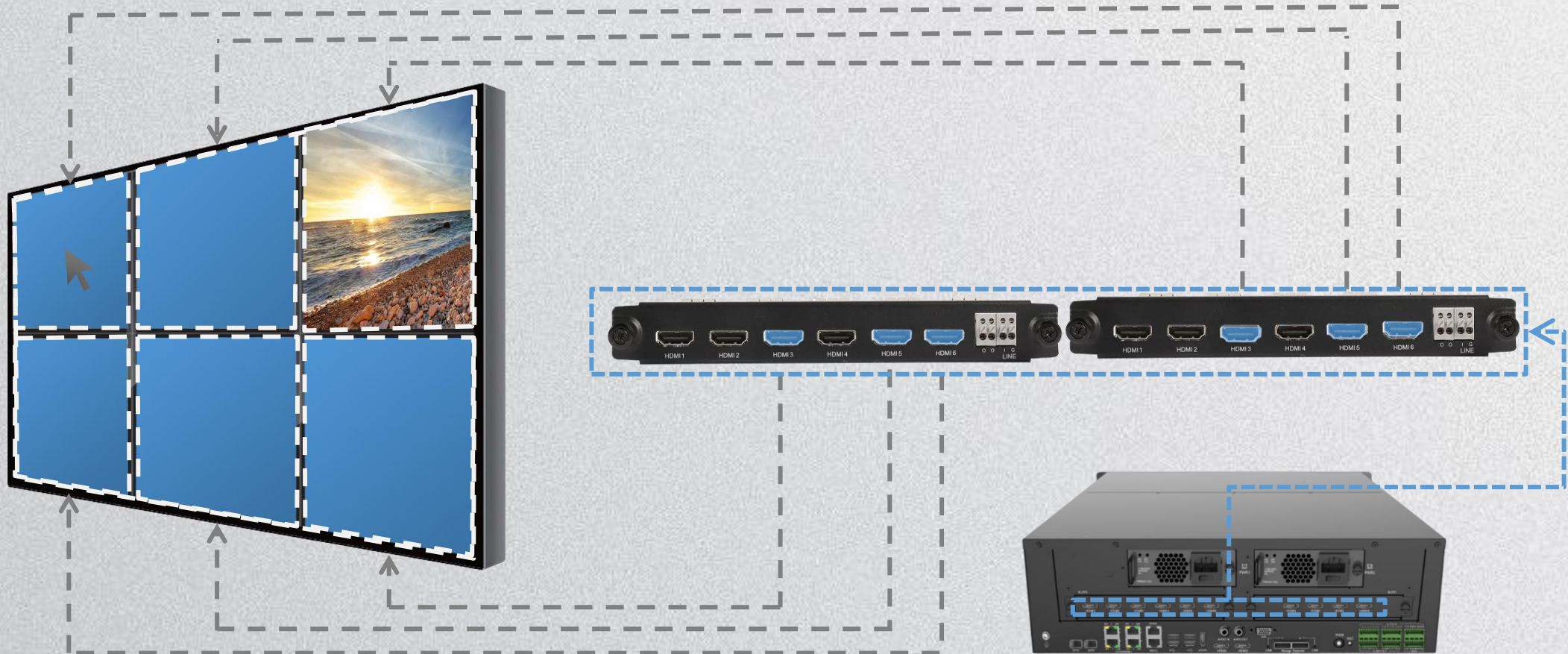


Direct to Video Wall

Multi-screen Stitching by Decoder Card

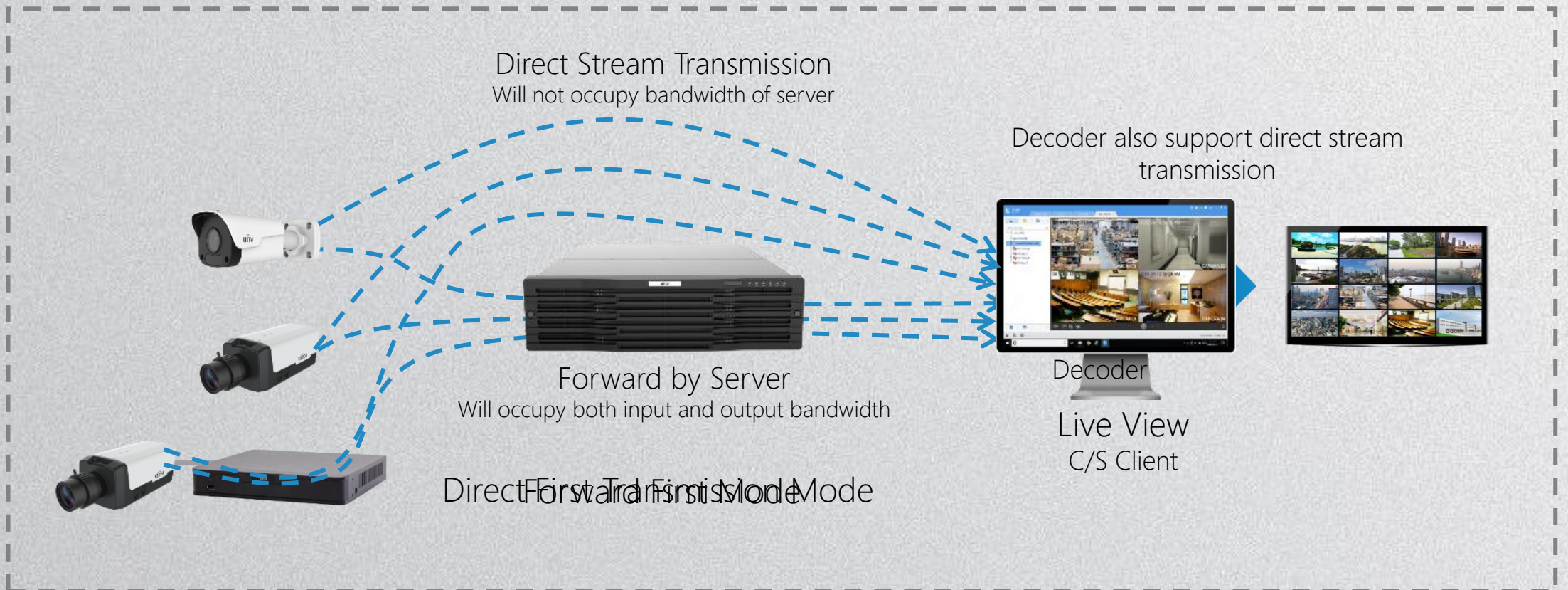
Built-in decoder card support multi-screen stitching, the screens here mentioned can be from different decoder card, just make sure screens are in a same rectangle.

Stitch



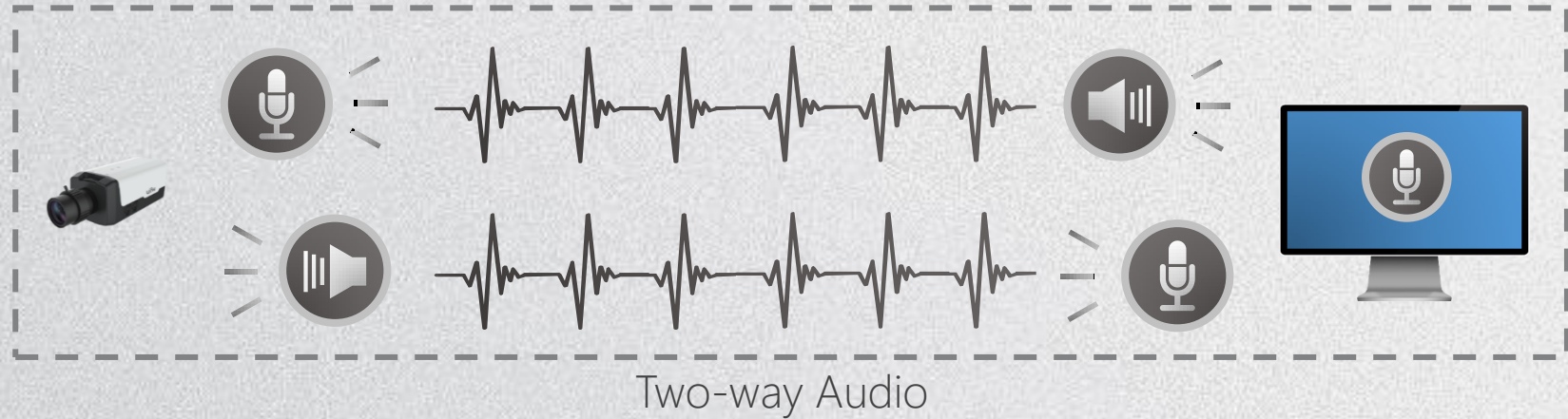
Direct Stream Transmission

To reduce the bandwidth pressure of server, for live view in local network, if IP cameras are directly connected to server, and IP cameras are in the same network with C/S Client, C/S Client can enable "Direct First Transmission Mode", so the video stream don't need to be forwarded by server, it can be directly transmitted from IP camera to Client.



Two-way Audio & Voice Broadcast

Clients can do two-way audio talk with IP camera and NVR, there can be up to one channel to do two-way talk at the same time.



C/S clients can do voice broadcast to up to 128 audio channels including IP camera and NVR.



#IP camera or NVR mentioned here should support audio in and out, and should be connected with audio devices first.

E-Map

C/S Client Support E-Map, which make video surveillance more intuitive and more convenient.

- ① Support jpg, png and bmp format image as map file
- ② Support hot-zone (the next layer maps) on map and switch between map easily
- ③ Add camera icon on map and do Preview and Playback on E-map directly
- ④ Show alarm notifications and play voice alerts on map directly
- ⑤ Support 7 layer of maps



People Counting

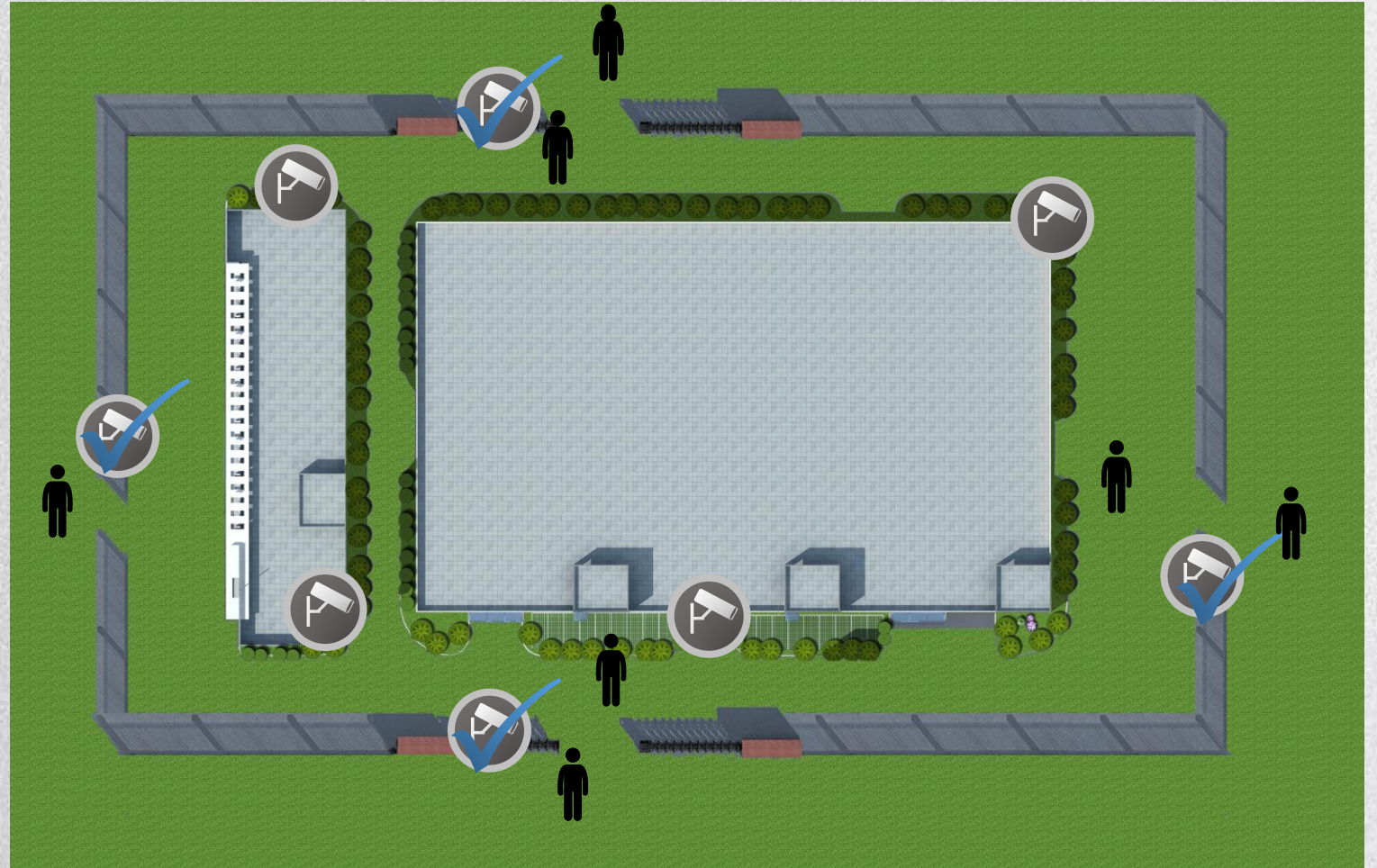
C/S Client can select multiple people counting cameras as one people counting system.

2~~4~~3

Remaining People

Enter 7~~4~~5

Leave 4~~4~~2



Display Counting the People Exporting as line format sheet

Alarm Linkage

Various alarm sources can be linked to various actions.



Alarm Subscription

Alarm notifications could be many and bothersome when in large scale channels.

Unicorn support alarm subscription, which could customize specific alarm sources of interests to specific users.



Jerry



Polo



Chris



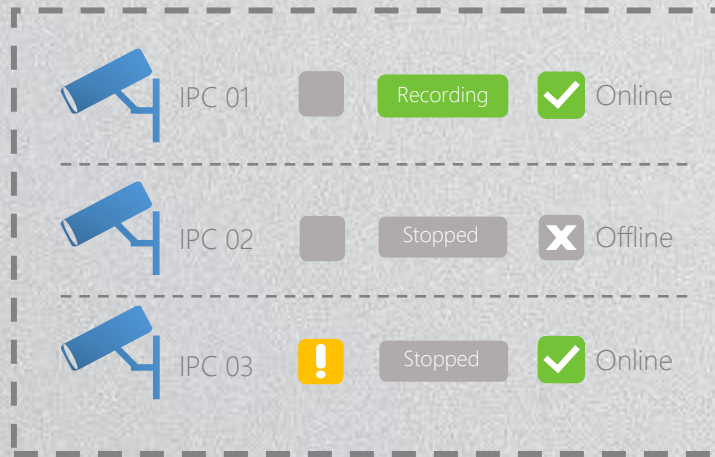
Bruno



Subscription



Detailed Statistics



Device Status

Easily check status of devices and channels



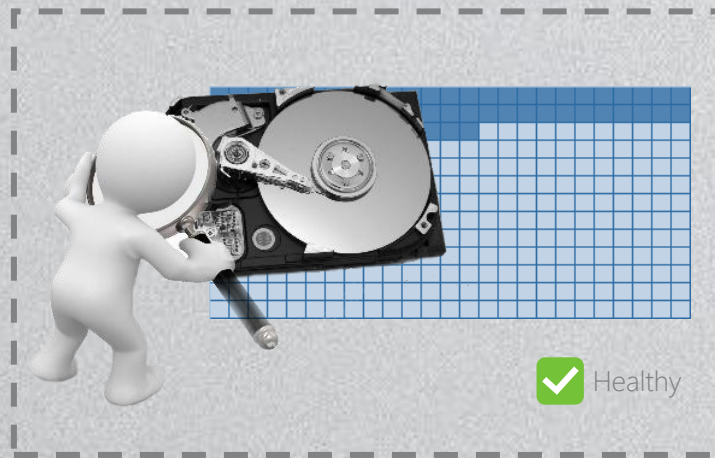
Server Status

Show IP address, serial number and status of master server and slave server



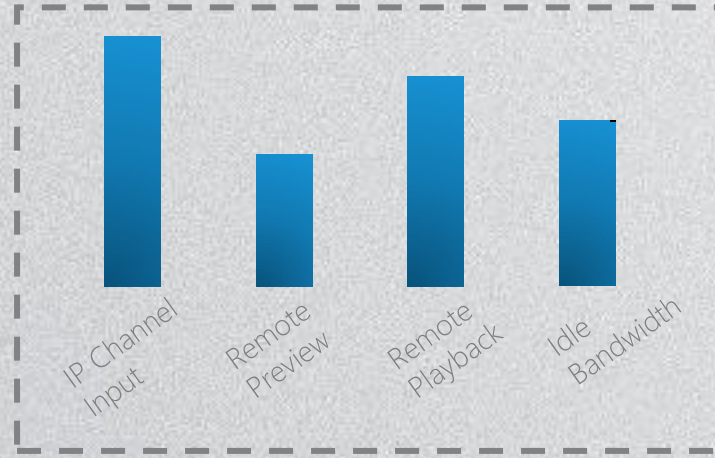
User Status

Show username, IP address, login time and online status



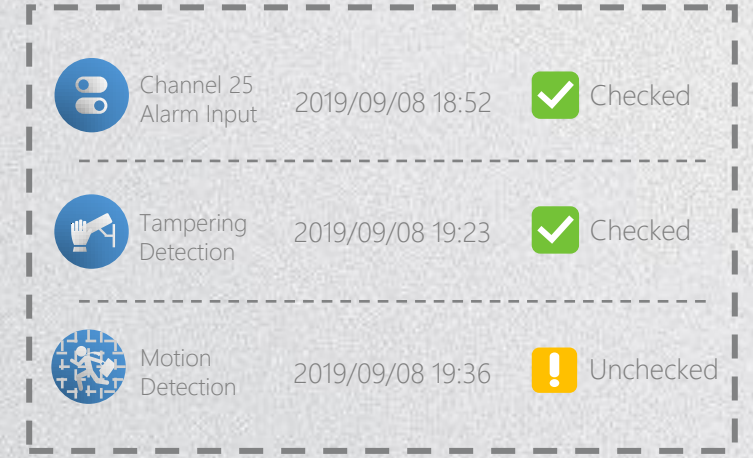
Hard Disk Status

Always monitoring hard disks for failures



Bandwidth Usage Status

Directly show bandwidth usage status



Alarm Logs

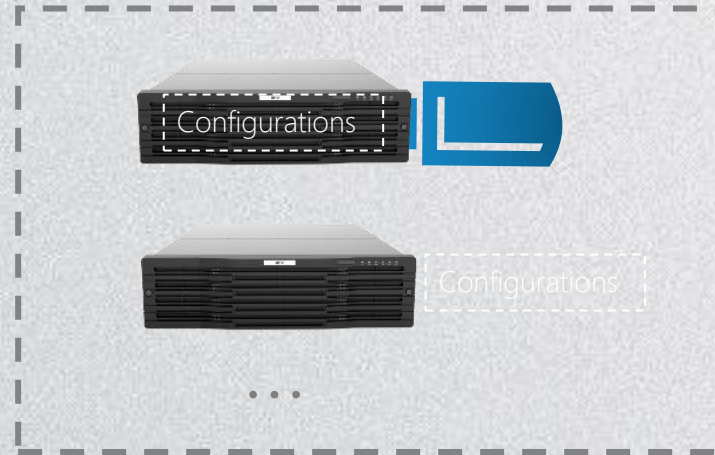
Easy to check and export all alarm logs

Easy Maintenance



Easily Collect Information

One-click to collect maintenance information



Configurations Copy

Quickly export and import configurations



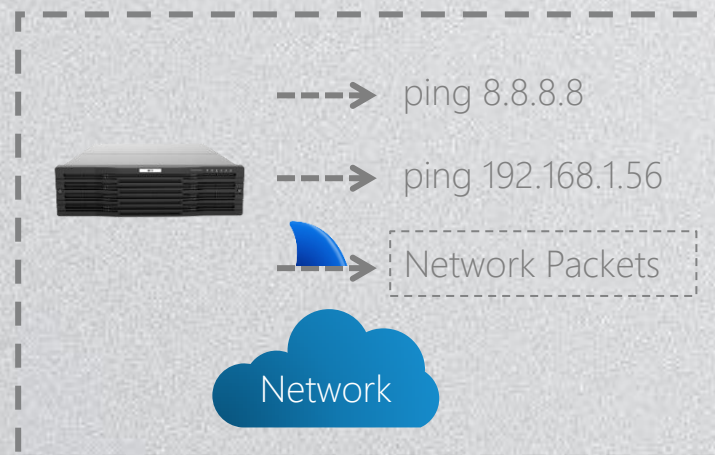
Removable Front Panel

Easily remove the front panel to install or replace hard disks



Easily Plug-in Mounting

Directly pull out and plug in to replace hard disk, power supply and decoder card



Network Sniffer

Built-in Network Sniffer to capture packets for analysis



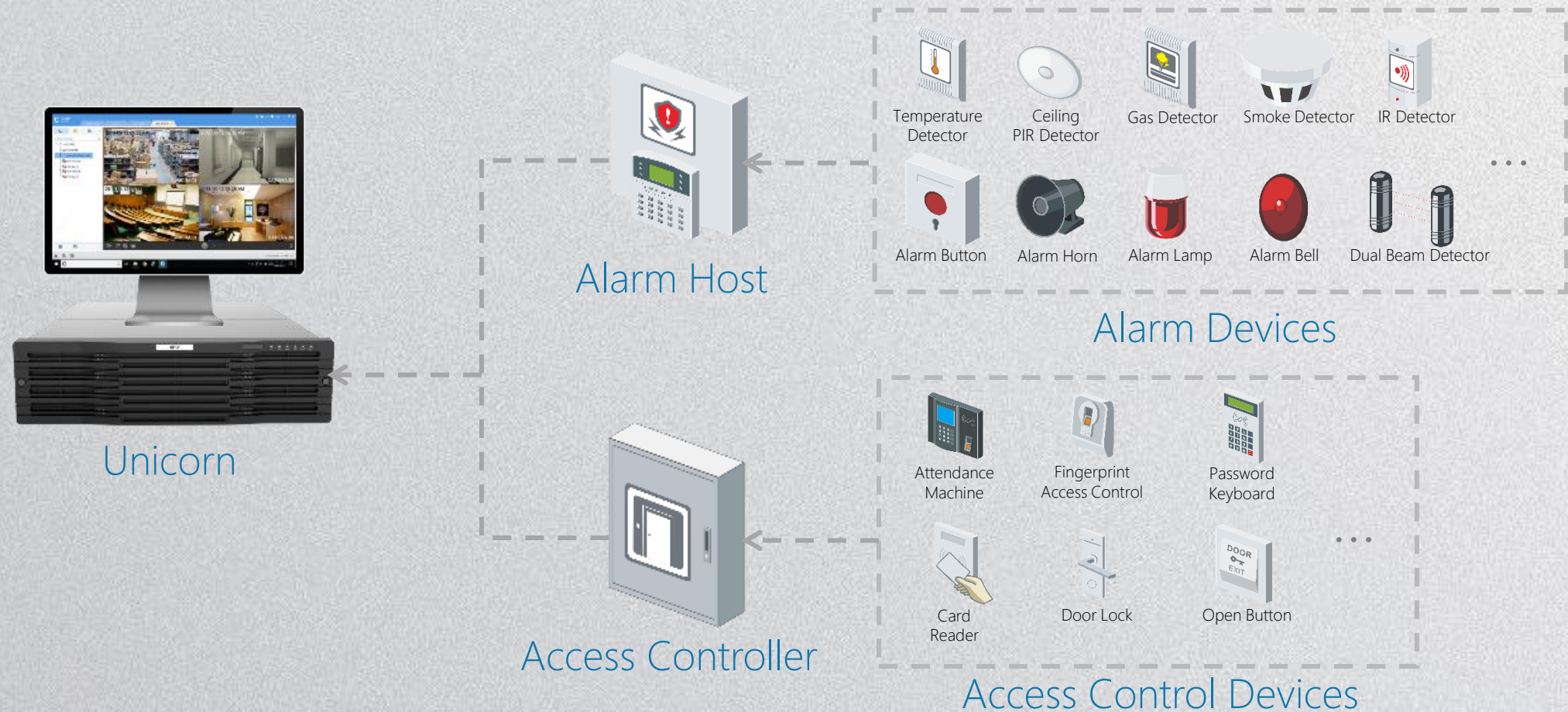
Strong Support Team

Response time for technical support is conducted quickly and efficiently

Integration of Alarm Host and Access Controller

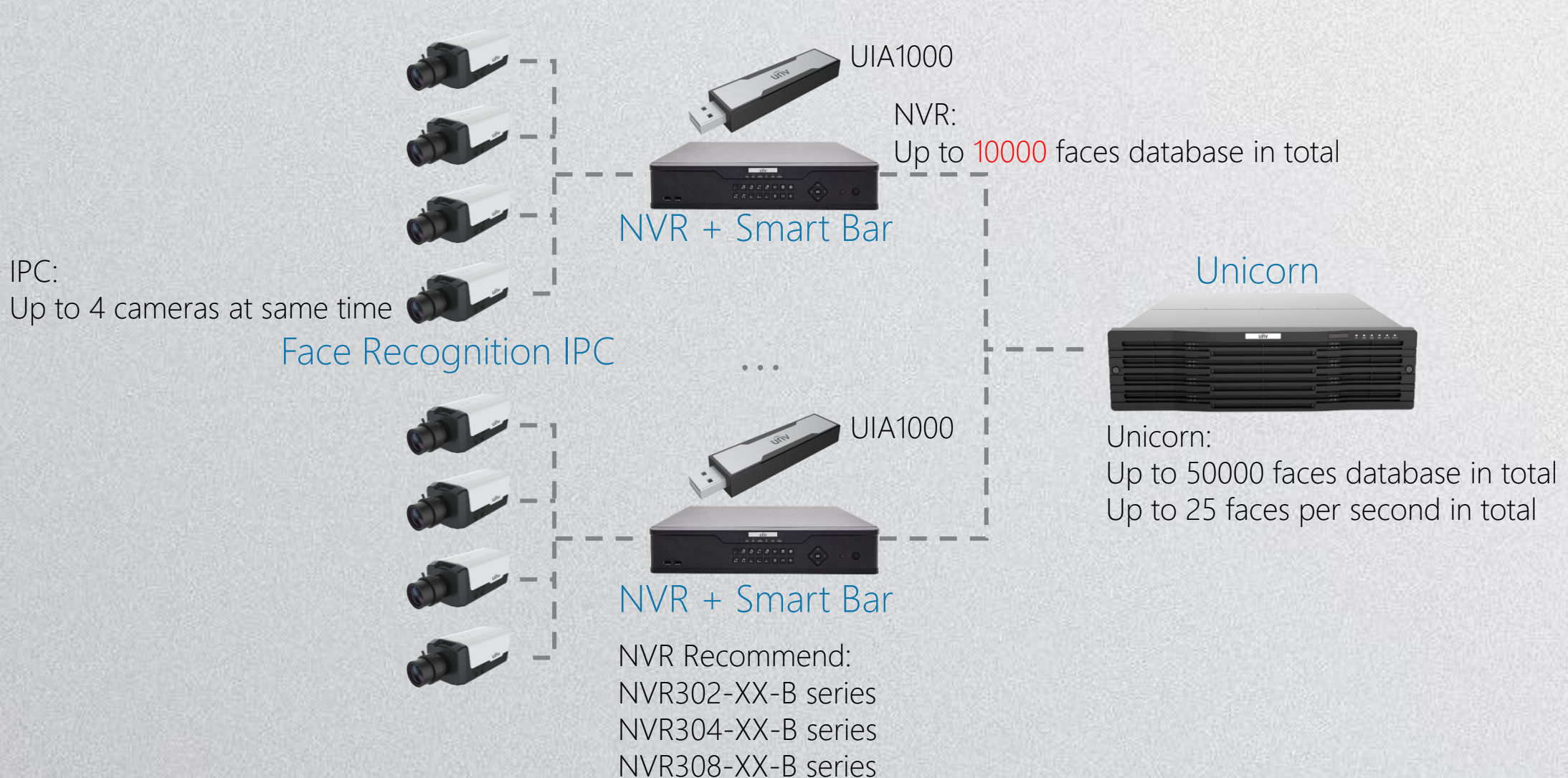
Unicorn support integration of Alarm Host and Access Controller.

In C/S Client, it can receive all the alarm notifications via alarm host. And via Access Controller, It can query people passing information, do card management, open and close doors.



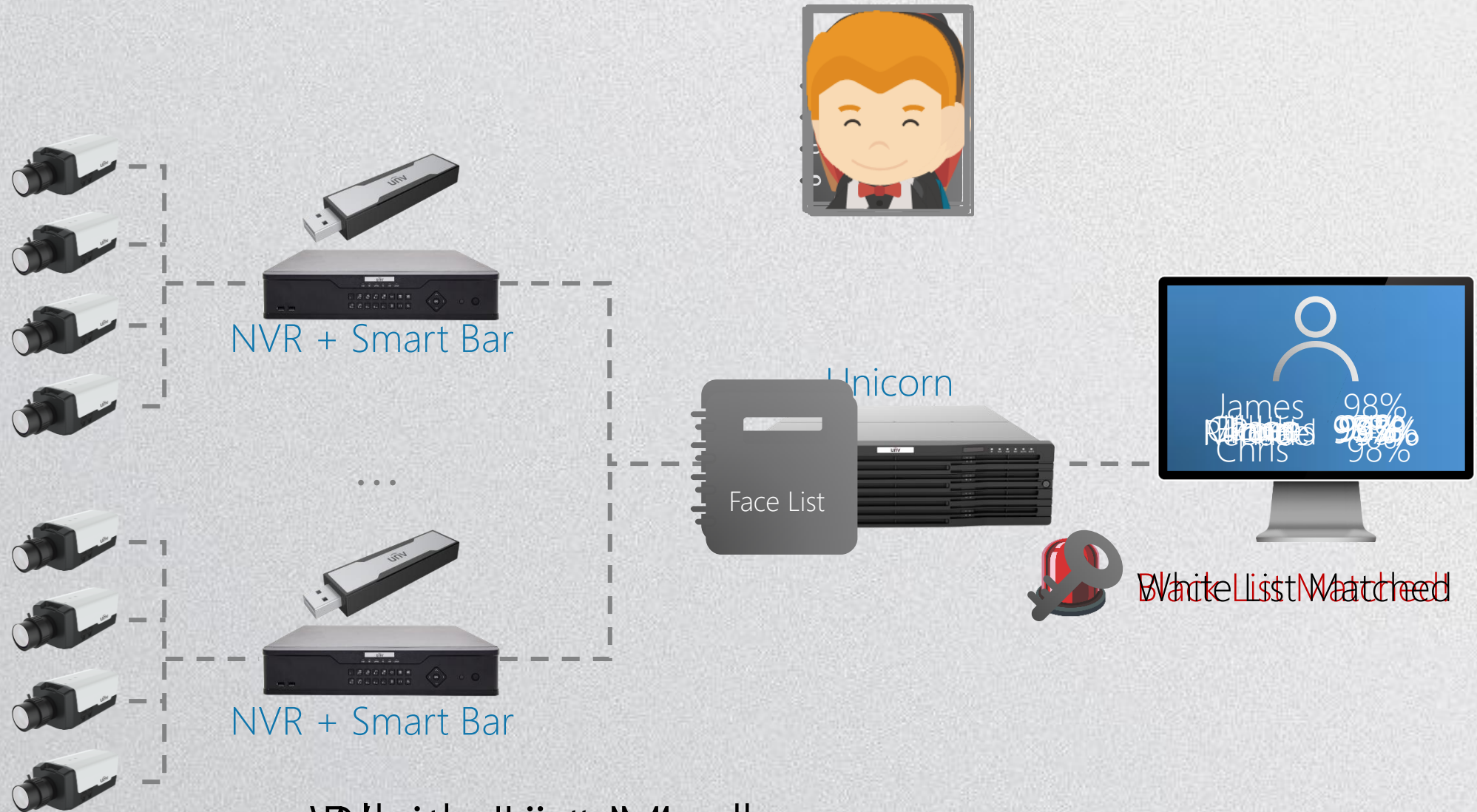
Face Recognition Network Structure

Unicorn can select multiple face recognition channels as one face recognition system.



Face recognition

Black List and White List



White List Mode

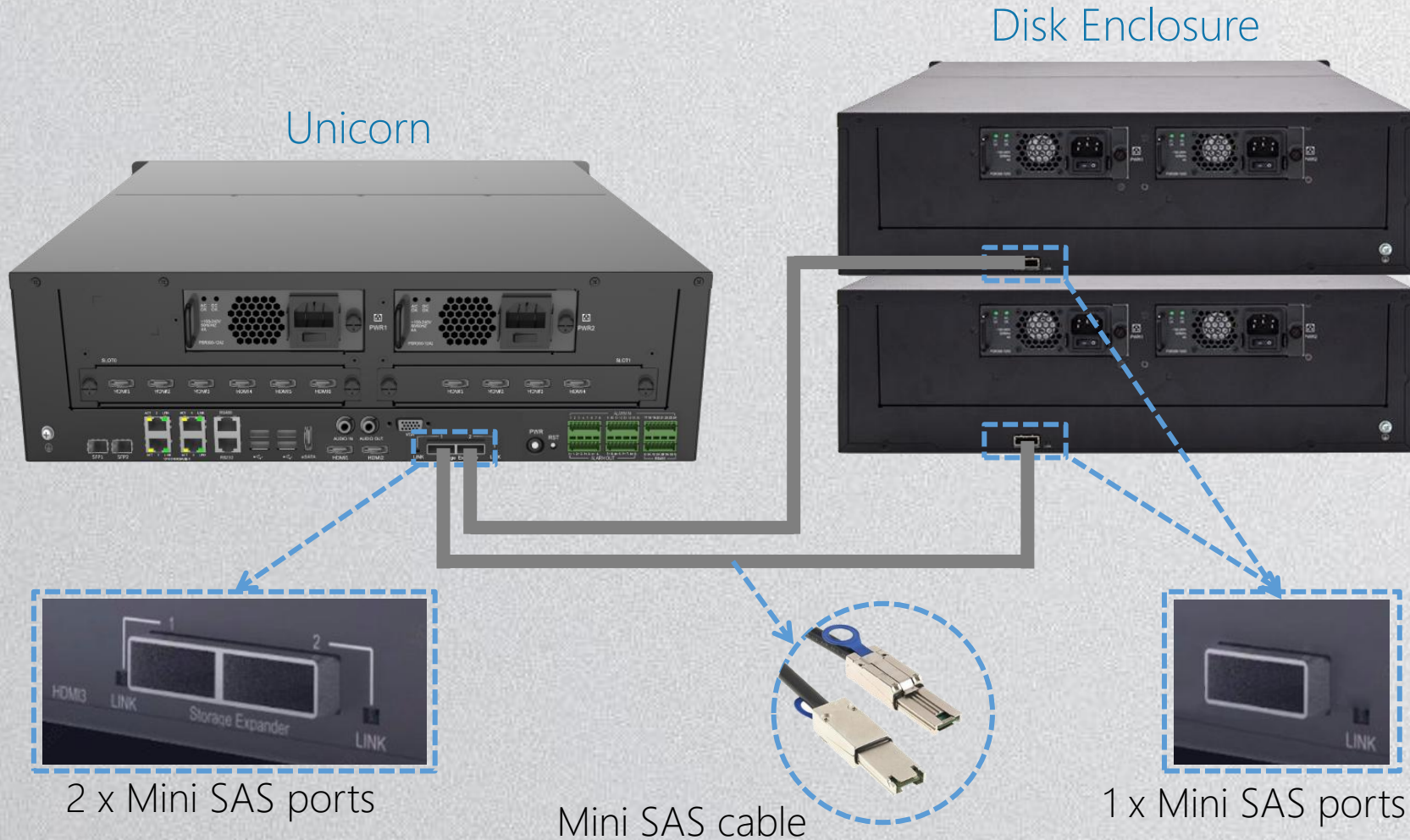
Key Features

Scalability

Flexible expansion according to project size

Expand Storage through Disk Enclosure

Unicorn support expanding storage through Disk Enclosure. Unicorn transmit data to Disk Enclosure via Mini SAS ports, whose speed can be up to 6Gbps.



Each server support up to 2 Disk Enclosures

8 SATA (DEU1008)
16 SATA (DEU1016)
optional

Expand up to

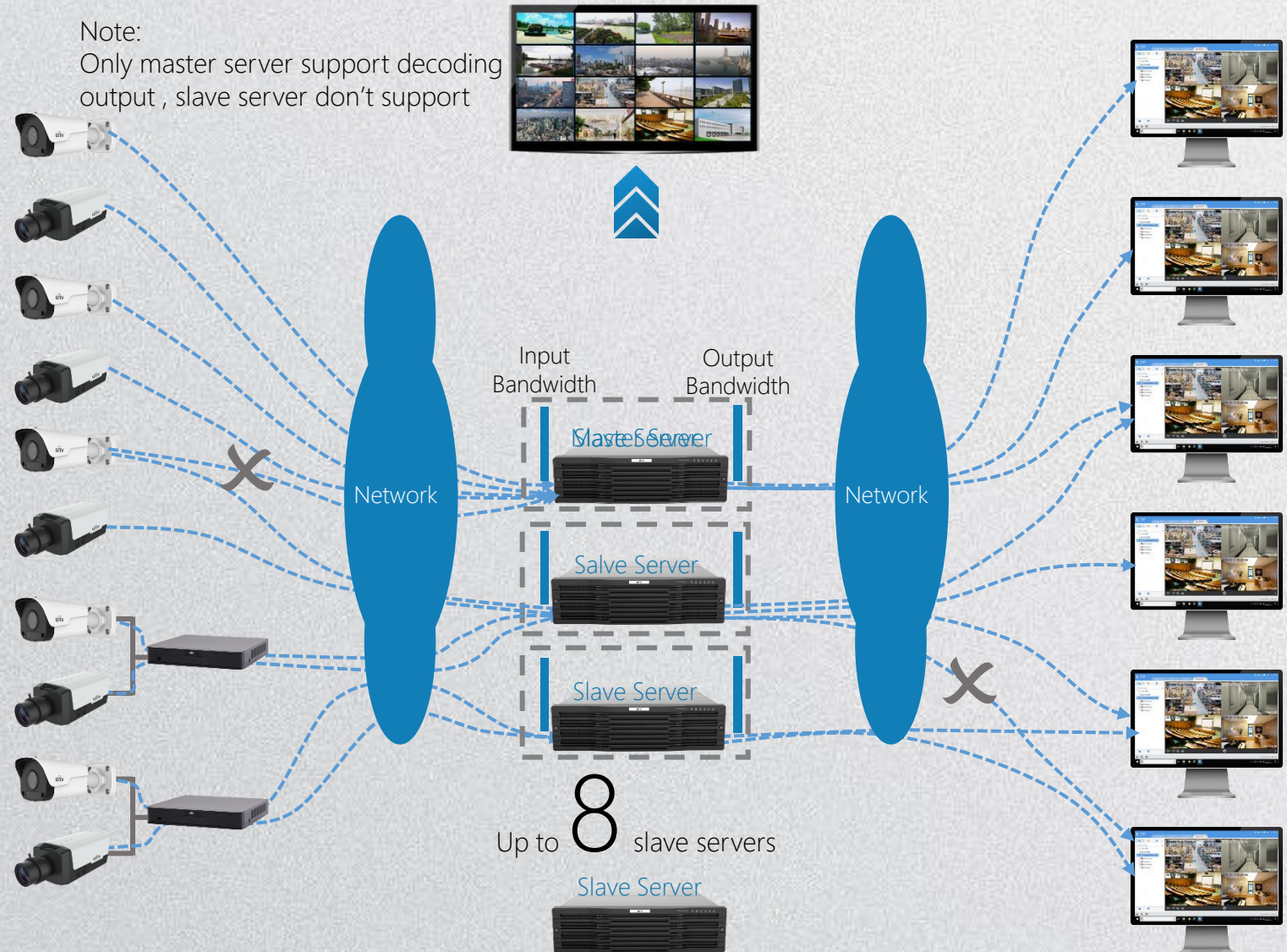
48 HDD

by disk enclosure

Expanding through Slave Server

Unicorn support Master/Slave structure, if single server was not capable, the master server can add slave server to expand storage and bandwidth capacity.

- ① Each slave server provides an extra 512Mbps input bandwidth, 384Mbps output bandwidth.
- ② Each slave server provides extra 256 Cloud devices.
- ③ Each slave server support 2 disk enclosure too.
- ④ Each master server support 8 slave servers.
- ⑤ Master server and slave server can switch between each other, but there can be only one master server.
- ⑥ Slave server don't support decoding output.



IPSAN Based Slave Server

Uniview IPSAN can also act as slave server, which can not only do video recording, but also do device management and bandwidth forwarding as normal slave server.

① VX1824 , VX1848 and VX3000-E series IPSAN based slave server :

Input Bandwidth: 1024Mbps

Input Recording Channel: 512 Channels

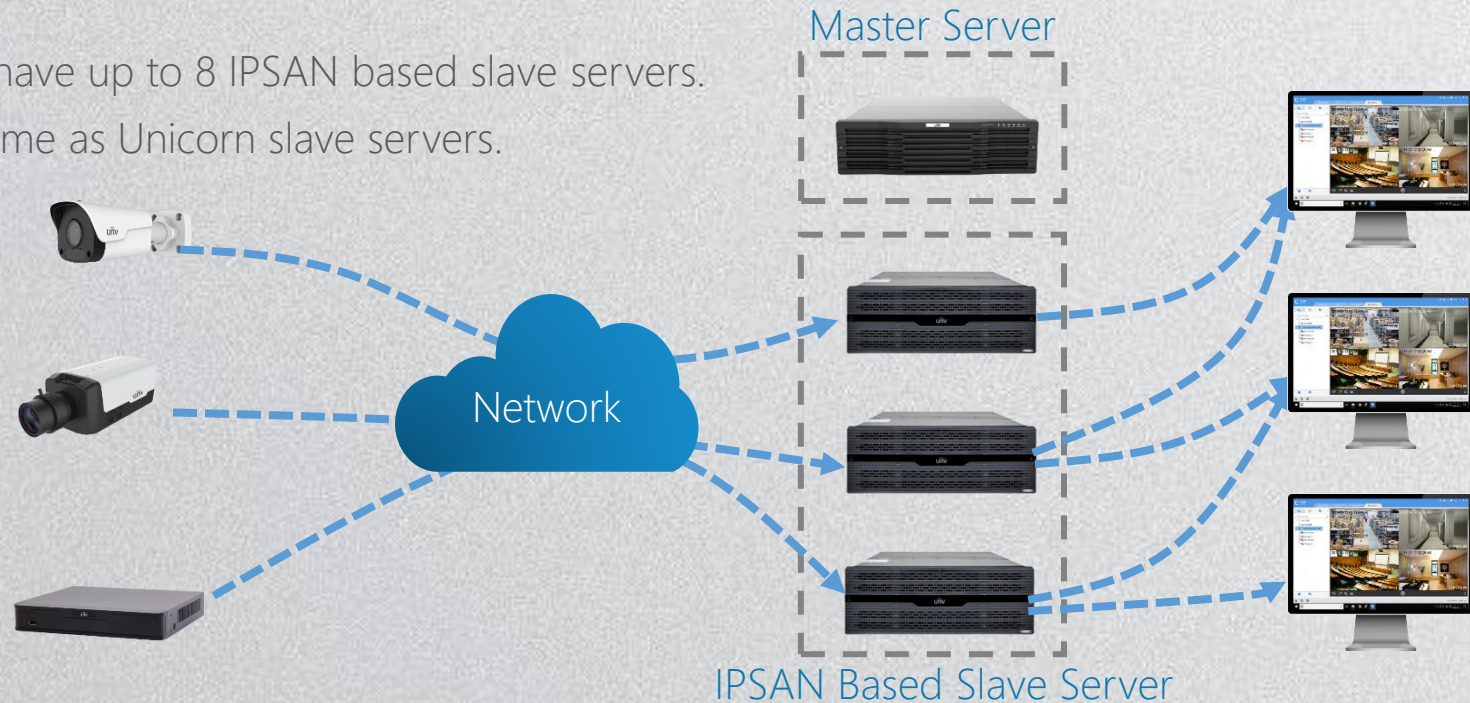
Output Bandwidth: 1024 Mbps

Playback Channels at the same time: 48 Channels



③ Each Unicorn master server can have up to 8 IPSAN based slave servers.

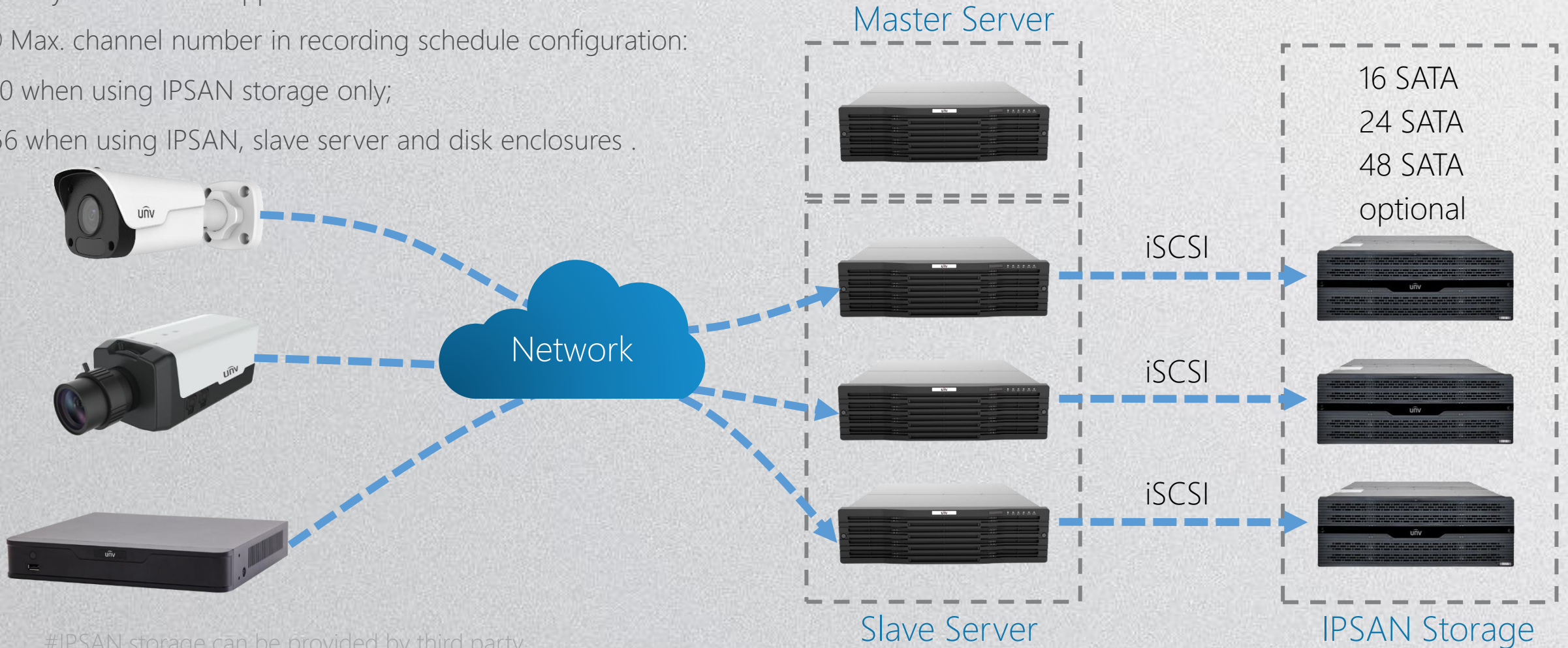
④ Other software features are as same as Unicorn slave servers.



Expand Storage through Normal IPSAN

Unicorn support expanding storage through normal IPSAN, to do recording and backup. IPSAN can be connected to slave server, video streams were transmitted via iSCSI protocol.

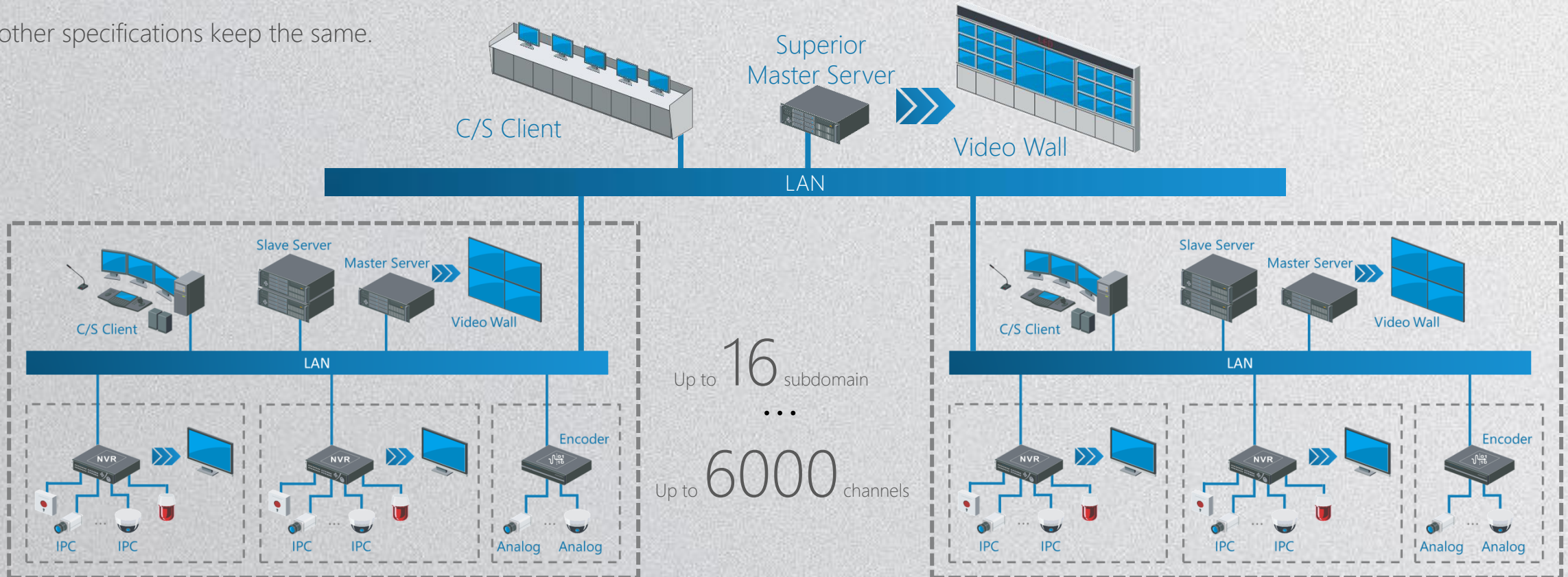
- ① Only slave server support IPSAN connection.
- ② Max. channel number in recording schedule configuration:
150 when using IPSAN storage only;
256 when using IPSAN, slave server and disk enclosures .



Hierarchical Network Structure

Unicorn support hierarchical network structure, which means it can support 2-level networking for master servers.

- ① Support 2-level hierarchical network structure, up to 16 subdomain master servers.
- ② Superior master server support management of 6000 channels from lower level domain.
- ③ Superior master server don't support slave server, subdomain master server support up to 8 slave servers.
- ④ All other specifications keep the same.



Key Features

High Reliability

Reliability is the foundation of the entire system

Anti-Hacker

Linux



Based on embedded Linux

Linux OS Based

Less of vulnerability and much safer



802.1x

HTTPS

ARP

Various Authentication Methods

Authentications to ensure network security



```
telnet 192.168.1.13 .....
access denied!
access denied!
access denied!
```

Telnet Disabled in Default

To avoid attacked by Telnet



192.168.1.11
192.168.1.12
192.168.1.13

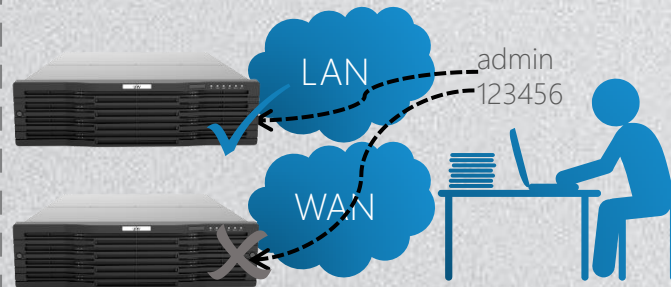


192.168.1.14
192.168.1.15
192.168.1.16



Whitelists and Blacklists

Only the clients in the Whitelists have the rights to access the server



LAN : Weak password allowed

WAN : Strong password Only

Strong Password Policy

Default weak password is not allowed to access the server from the internet



```
02:23:57 09/13/2018 XXXXXX
03:51:18 09/15/2018 XXXXXX
15:14:36 09/27/2018 XXXXXX
.....
```

Detailed Operation Log

All the illegal operations will be recorded in the log, and can be traced easily

Intelligent Fan

Unicorn support Intelligent Fan which can automatically adjust Fan speed according to temperature inside the case. It can not only reduce the noise made by Fan in most cases, but also can save the cost on Electricity.

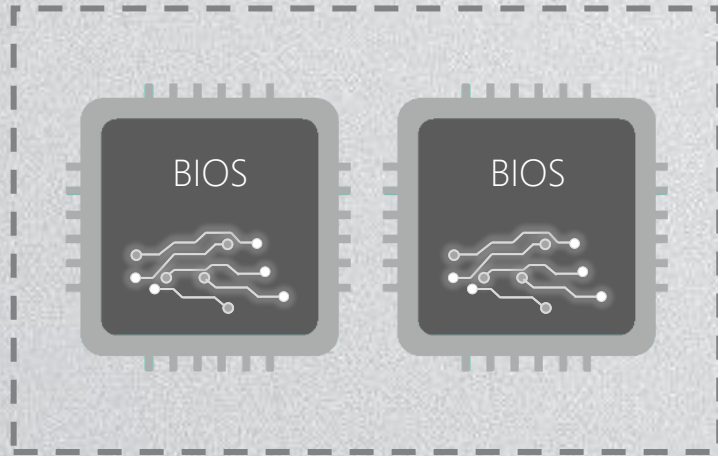


Temperature $\leq 60^{\circ}\text{C}$



RPM 3000

Redundant Design



Dual BIOS

Ensure high reliability of system running



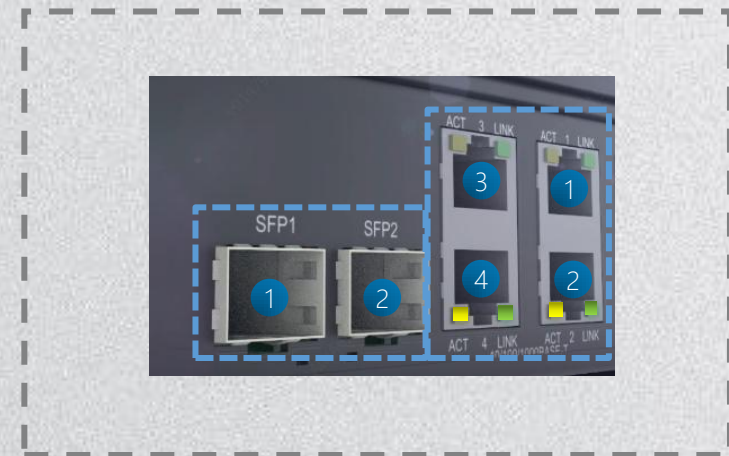
Redundant Power Supply

In case of power failure, could still keep working



Redundant Fan

To ensure the effect of heat dissipation



Redundant Network Ports

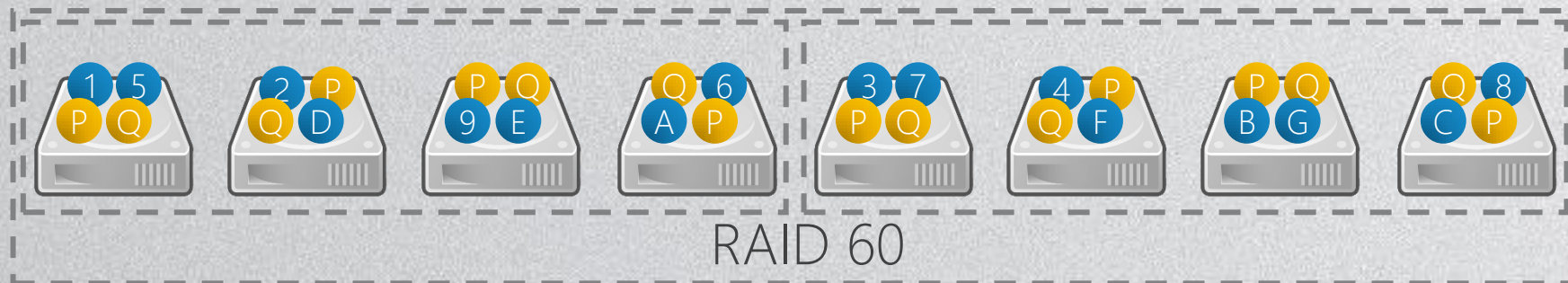
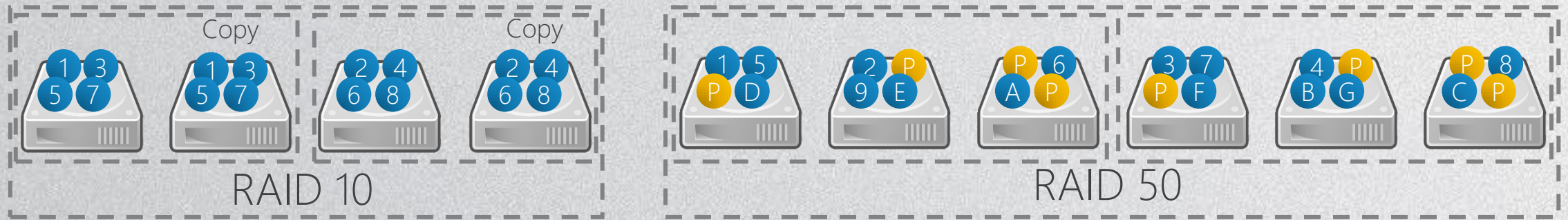
Redundant design for both Ethernet and Optical ports

RAID

Supported RAID & Hot-spare disk

Unicorn Support RAID 0, 1, 5, 6, 10, 50, 60

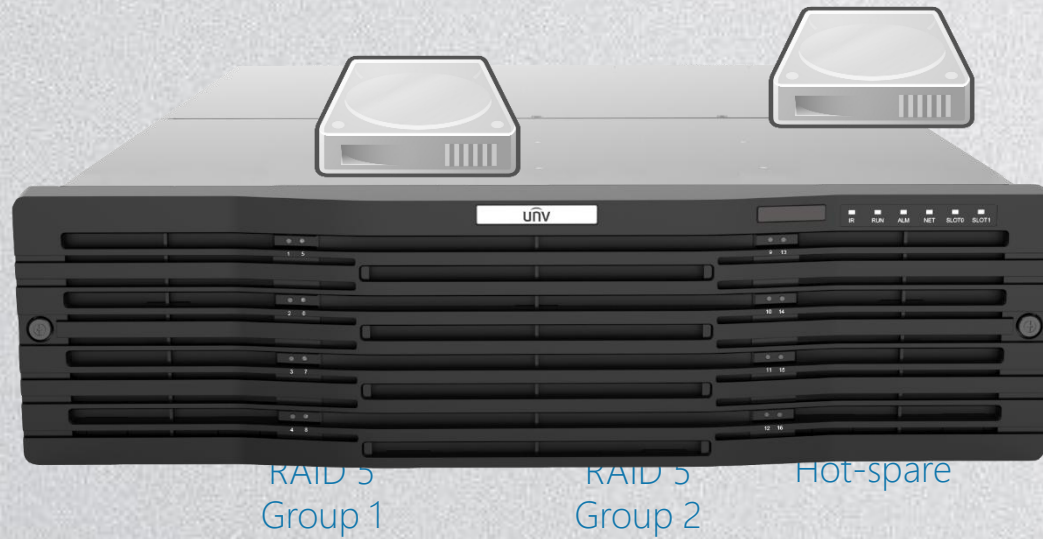
Besides RAID, Unicorn can set hard disk as hot-spare disk to enhance reliability



RAID Hot-swap

Unicorn support hot-swap to quickly rebuild RAID groups

When the hard disk of RAID group get failover, just remove the front panel and replace the new disk, and rebuild all data without any loss

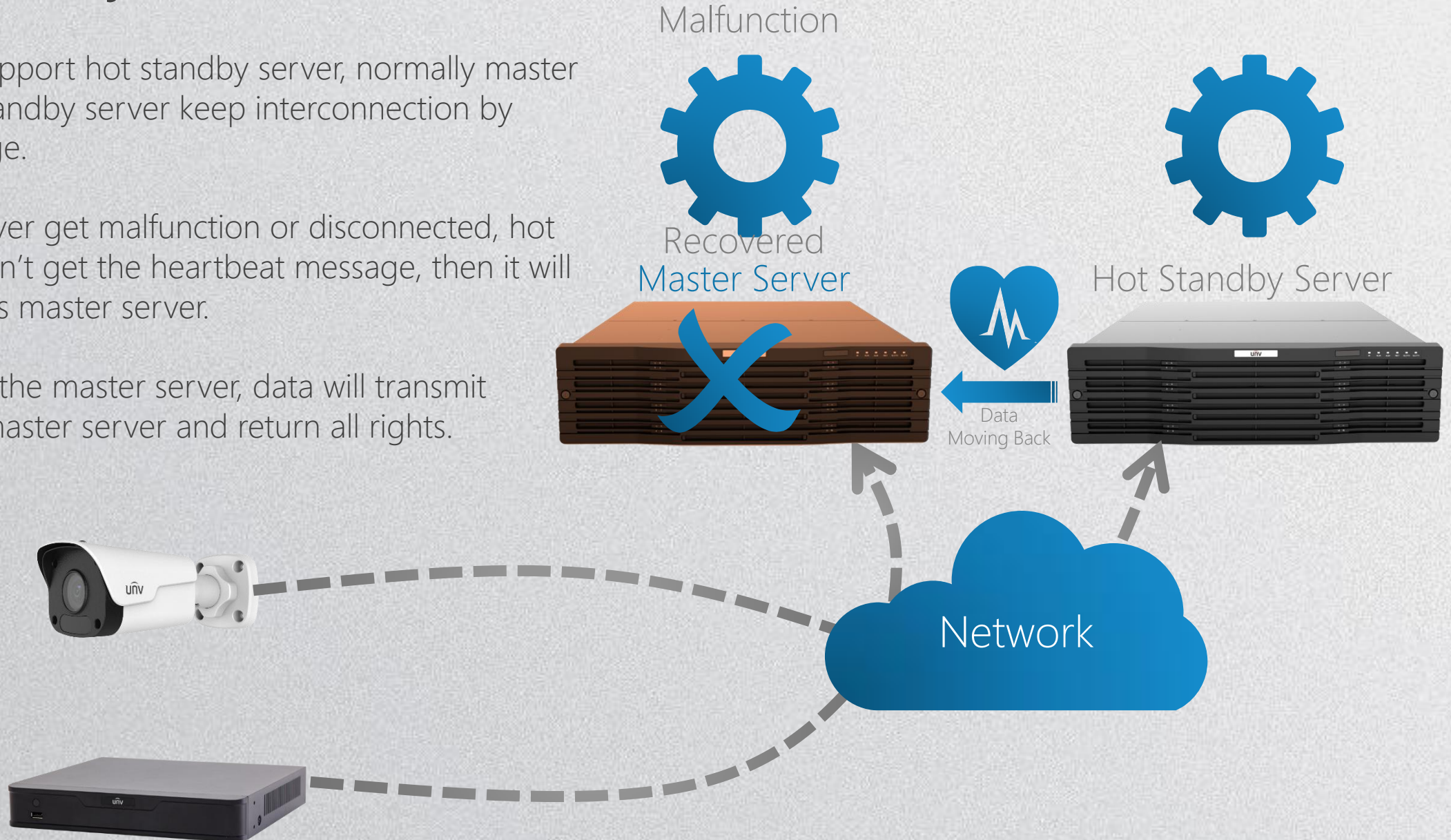


Hot Standby

Unicorn server support hot standby server, normally master server and hot standby server keep interconnection by heartbeat message.

When master server get malfunction or disconnected, hot standby server can't get the heartbeat message, then it will take over to act as master server.

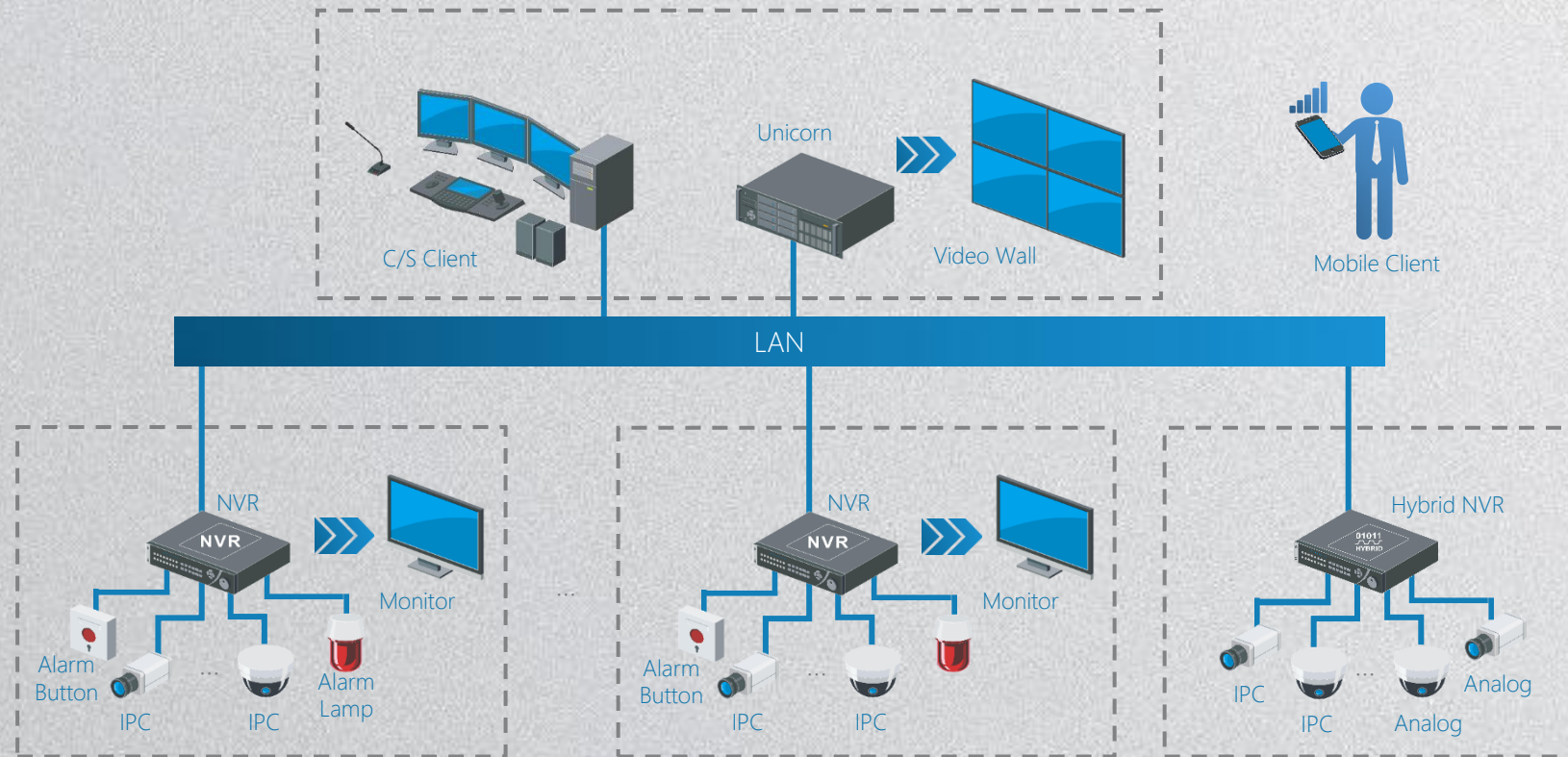
After recovery of the master server, data will transmit back to original master server and return all rights.



Typical Networking

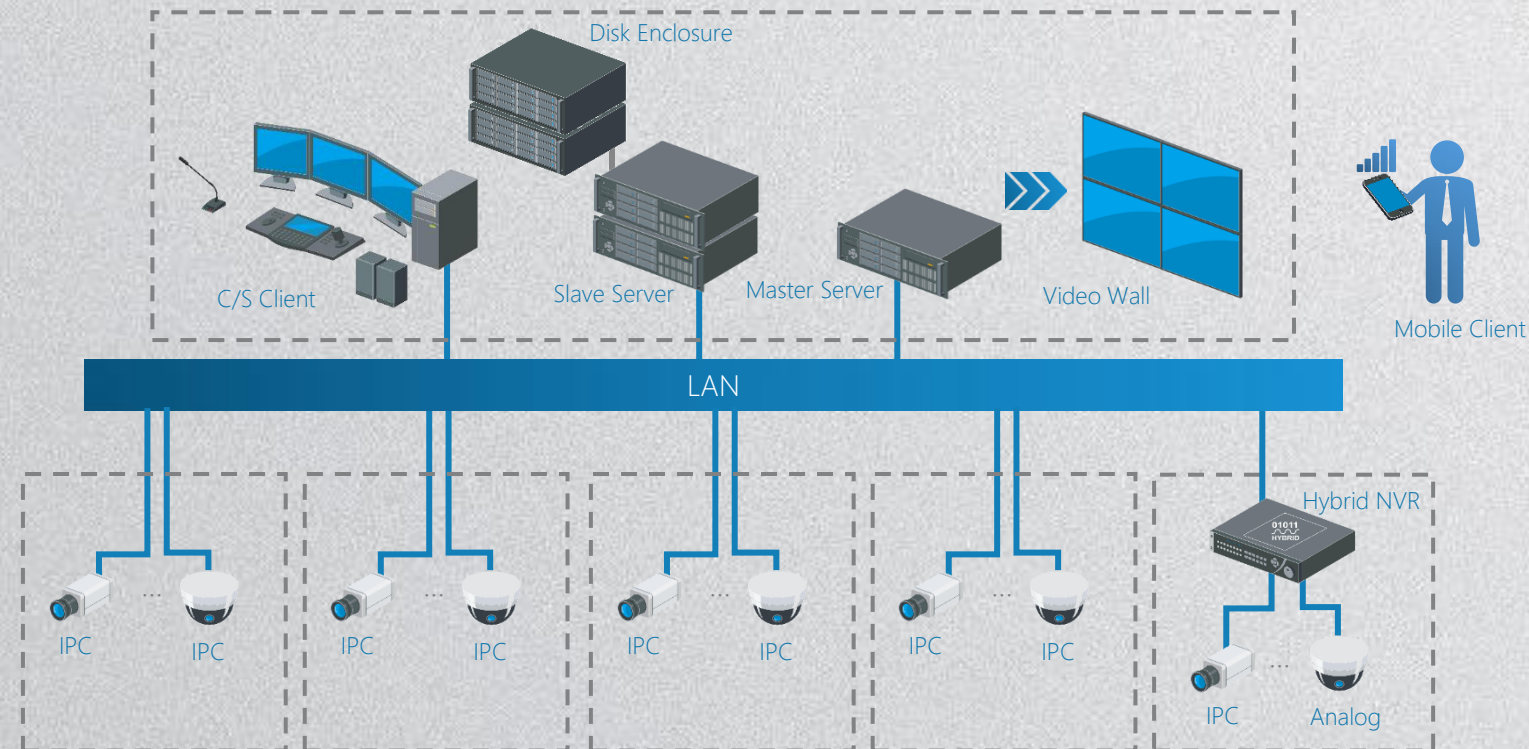
Typical Networking LAN – Distributed Storage & Central Backup

- ① IP cameras be connected to NVR, Analog cameras be connected to Hybrid NVR.
- ② With several cameras and NVR in each location, there are many locations and are in the same network with control center.
- ③ NVR directly output to monitor to do local preview.
- ④ Unicorn directly output to video wall to do preview in control center.
- ⑤ Video stream directly be recorded to NVR locally, and make backup plan to backup event recordings to Unicorn.
- ⑥ C/S Client directly can do preview and playback when needed, mobile client do remote preview and playback.



Typical Networking LAN – Central Storage

- ① IP cameras directly be connected to Unicorn, Analog cameras be connected to Hybrid NVR.
- ② With several cameras in each location, there are many locations and are in the same network with control center.
- ③ Unicorn directly output to video wall to do preview in control center.
- ④ Video stream directly be recorded to Unicorn, some can also recorded to SD Card locally, and backup to Unicorn automatically.
- ⑤ Can add slave server to expand bandwidth capacity and recording space, can add Disk Enclosure to expand storage.
- ⑥ C/S Client directly can do preview and playback when needed, mobile client do remote preview and playback.

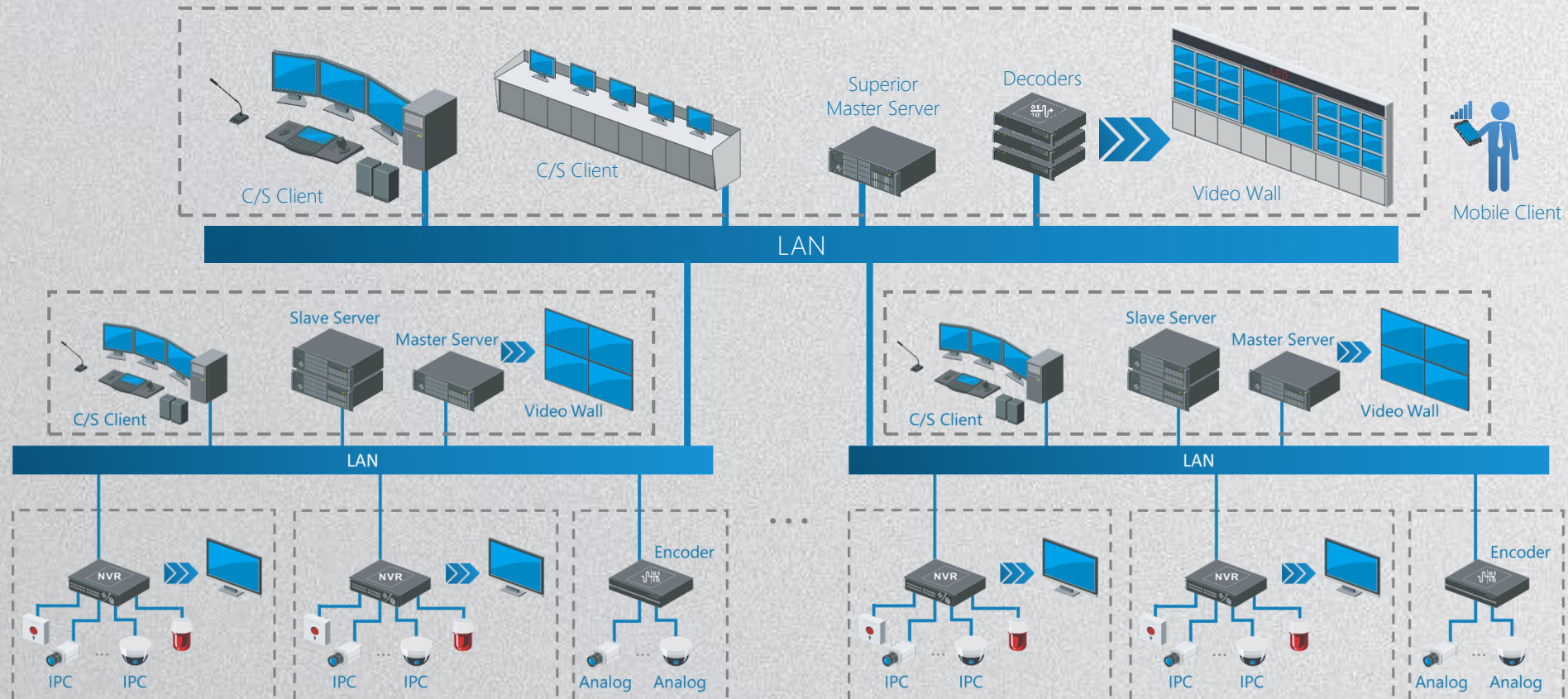


#Slave server can be Unicorn or IPSAN based server

Typical Networking

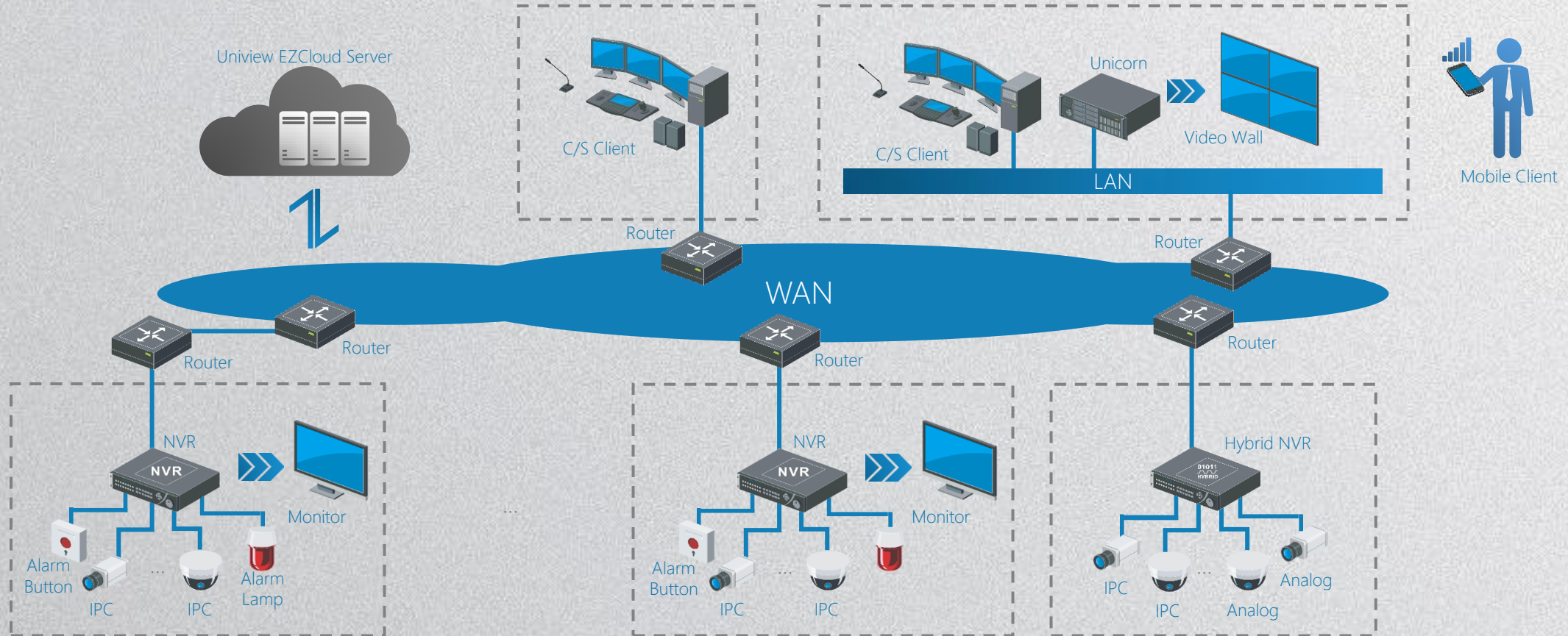
LAN – Hierarchical Network Structure

- ① Build 2-level hierarchical network structure, one superior master server to manage all subdomain channels (up to 6000 channels).
- ② In subdomain, as same as applications mentioned previously. In superior control center, do central management.
- ③ In control center, can be output directly from master server, and can be output from decoder to video wall as suggested.
- ④ C/S Client in superior control center can directly can do preview and playback when needed, mobile client do remote preview and playback.



Typical Networking WAN

- ① Devices(IPC,NVR) and Unicorn should be able to connect internet so can reach Uniview EZCloud server.
- ② Unicorn add devices(IPC,NVR) through Uniview EZCloud.
- ③ C/S Client can be in same LAN with Unicorn, or through WAN to Unicorn.



Successful Cases

J&T Express, Vietnam



Solution Highlights:

- Uniview delivered the complete video surveillance solution for J&T Express Vietnam, with almost 3500 channels
- More than a dozen units of Unicorn are applied as the central management server, to provide most professional and cost effective solution

Background:

J&T Express is an express delivery company that applies technology development as the basic system. Extensive network that owned by J&T Express facilitates express services for customers

Hilton Hotels and Resorts, UAE



Solution Highlights:

- All-weather adopted video surveillance: corridor mode, WDR, anti-corrosion
- All-in-one VMS server to provide 90 days 7/24 uninterrupted storage and over 500 cameras management and display

Background:

Hilton Hotel and Spa Resort RAK, Hilton Al Hamra Beach & Golf Resort, Hilton Residence and Village

► Dubai Carrefour Hypermarket, UAE



Solution Highlights:

- Complete solution: Over 200 UNV IPC, UNV all-in-one VMS server for management and storage, 6 decoders and 1 keyboard
- High level data safety: redundant design and anti-hacker technologies

Background:

Founded in France, Carrefour is one of the largest hypermarket chains in the world. In 1995, Carrefour opened its first hypermarket in City Centre Deira UAE

Factory Bekament, Serbia



Solution Highlights:

- Uniview provided video surveillance solution including 150 cameras and VMS Server, monitoring perimeter, warehouses and production process
- Plenty of channels and mass capacity storage; high level data safety, redundant power, RAID and hot standby server, up to 112-ch 1080P decoding ability

Background:

Factory Bekament, located in Arandjelovac, Serbia, is a factory producing the materials for finishing works in construction industry

Solar Power Station, Belarus



Solution Highlights:

- CE certified and tested through ESD (Electronic Static Discharge). All of UNV cameras are able to bear 4KV contact discharge and 8KV air discharge
- All-in-one VMS server with strong decoding ability and redundant design and RAID for the highest level data safety

Background:

Solar Power Station at Bragin was built in August 2016 and is currently the biggest solar power facility in Belarus. Its power capacity amounts to 18.48 MW with an area equals to 60 football fields

ECUATRAN S.A., Ecuador



Solution Highlights:

- 4K fisheye: 360° wide angle surveillance
- Cost effective: All-in-one VMS server to provide management, media stream forwarding, storage and decoding together

Background:

Ecuatran S.A A leading company in Ecuador with presence in the Andean Region, which manufactures and markets transformers and solutions for electrical distribution, serving its customers by adding value, quality and technology

▶ Armaguard Cash Clearing Center, Zambia

Solution Highlights:

- High density mass capacity storage: 7/24, 90 days uninterrupted storing
- High level data safety: redundant design, RAID, anti-hacker technologies

Background:

Largest cash clearing center in Zambia





Better Security , Better World