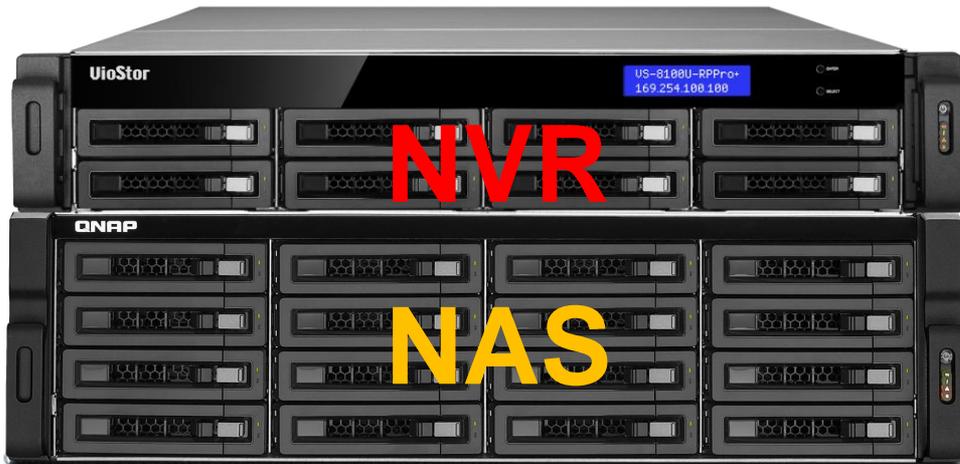




# VioStor NVR + Turbo NAS

## Surveillance Storage Expansion



# Agenda

## Introduction

Background

Challenges

## Solution

Features

Advantages

Benefits

Limitations



# Background

## IP surveillance trends

- ✓ Latest technologies, including **4K, 60/120 fps** gradually entering the market
- ✓ Higher resolution, quality, and frames per second needs higher **BIT RATES** thus much more storage is required



# Agenda

## Introduction

Background

Challenges

## Solution

Features

Advantages

Benefits

Limitations



# Challenges

An example from a bank:

- ✓ A retention period of at least 6 months is demanded by the *Financial Supervisory Commission*
- ✓ **16** TB is required for one standard Full HD IP camera
- ✓ How much storage will be necessary for a 10, 20, or even 100 similar cameras?



# Considerations

## Storage selection

- ❑ Software NVR? Windows-based RAID?
  - Unreliable and complicated.
- ❑ Pure NVR with third-party storage?
  - Compatibility. Troubleshooting. Performance.
- ❑ DAS? SAN? NAS?
  - Scalability. Expensive. Accountability.

And need a **Market Validated** storage brand?



# Agenda

## Introduction

Background

Challenges

## Solutions

Features

Advantages

Benefits

Limitations



# So how about QNAP VioStor NVR + Turbo NAS?



# QNAP Turbo NAS

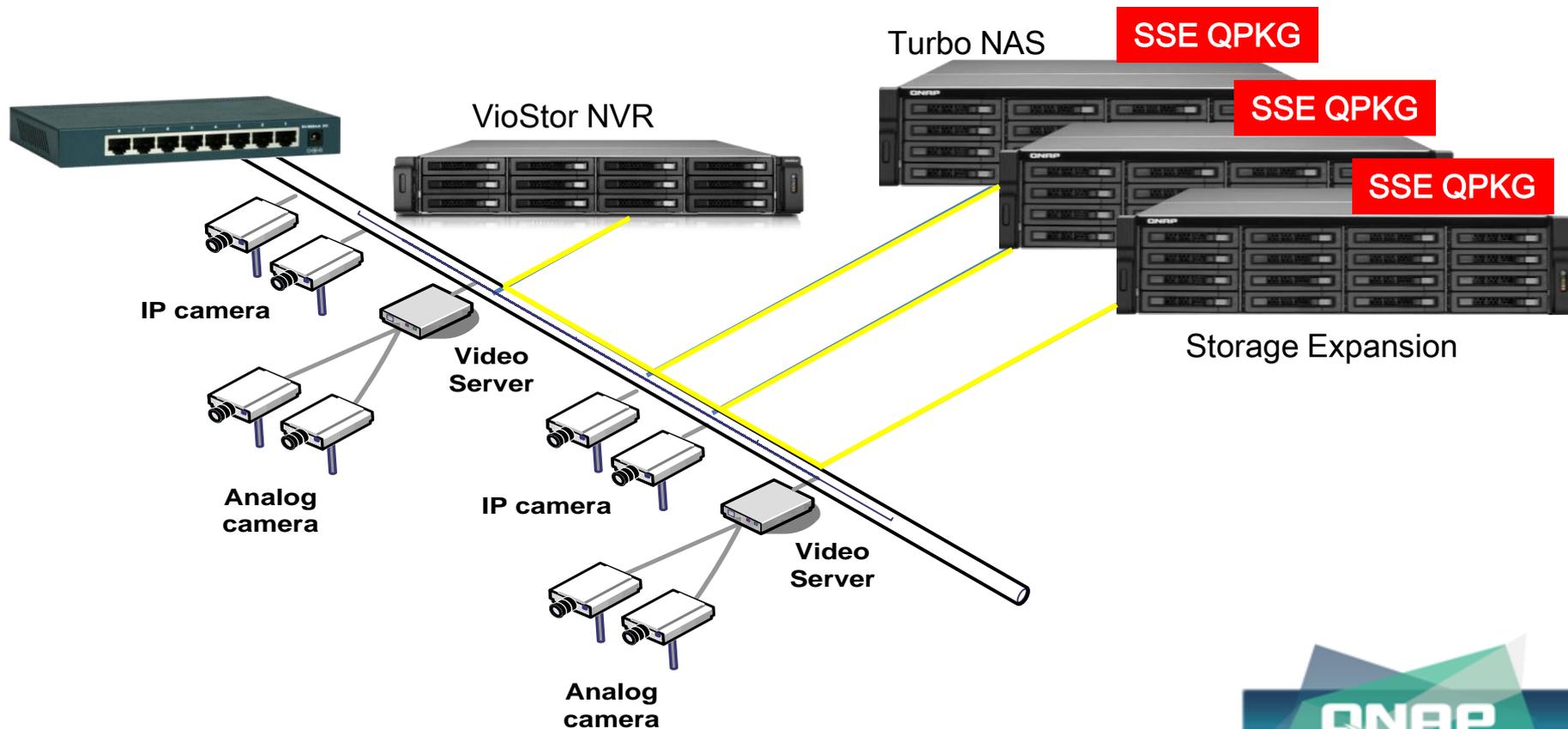
## World-class Storage:

- ✓ Top 8 storage brand\*
- ✓ Top 3 SMB NAS brand (below MSRP \$24,999)\*
- ✓ Linux-embedded NAS with multiple RAID support
- ✓ Global support infrastructure and free software updates
- ✓ Countless awards for performance and reliability
- ✓ **3 million** worldwide sales



Note: Ranked by Gartner report 2012

# How Surveillance Storage Expansion (SSE) Works?

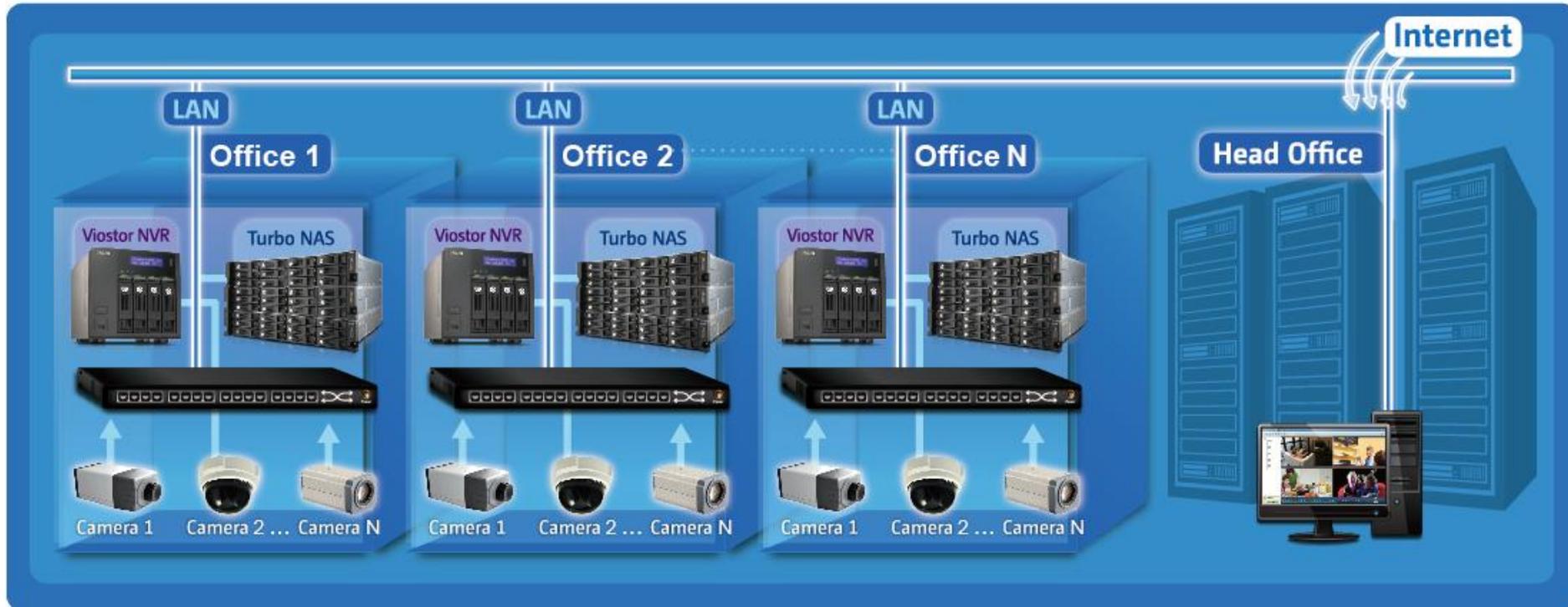


# Case Study: Banking



- ✓ **Location:** Leading Georgian commercial bank
- ✓ **Solution:** 4-bay tower NVR (VS-4116 Pro+) & 6-bay tower NAS (TS-669 Pro)
- ✓ **Quantity:** 37 branches
- ✓ **Feature:**
  1. Full-HD video recording
  2. Flexibly enlarged storage
  3. 180-day video retention

# Architecture



# Agenda

## Introduction

Background

Challenges

## Solutions

Features

Advantages

Benefits

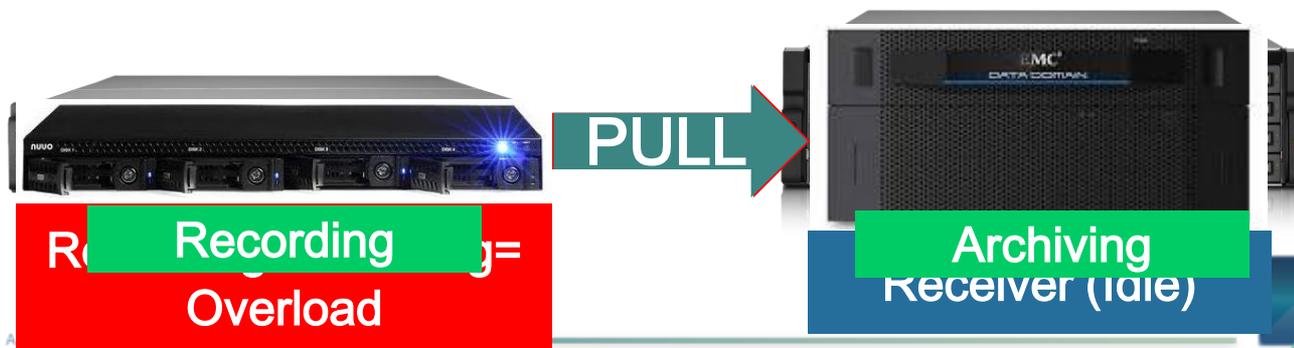
Limitations



# Advantages

## Balanced Workload: Reduce NVR CPU load

- ✓ Typical problem: Integrating third-party storage often overloads the NVR as it both records and “pushes” files to storage
- ✓ QNAP does it smarter, the Turbo NAS “pulls” files from the NVR (with the SSE app on the Turbo NAS)



# Advantages

## Cost-effective

- ✓ Surveillance Storage Expansion is your best choice and solution if you think...
  - iSCSI SAN is too expensive and unnecessary
  - You don't want some lousy storage solution to ruin your business
  - But you still need a well-known storage vendor providing reliable storage, powerful backup, and trusty service



HP StorageWorks  
MSA2324i iSCSI SAN 24 x  
900GB 10K SAS / 3 Year  
Warranty

*Buy It Now* \$20,799.00 20d 13h 57m  
Free shipping



# Agenda

## Introduction

Background

Challenges

## Solutions

Features

Advantages

Benefits

Limitations



# Benefits

## Customize storage

- ✓ Grow capacity to meet the need for higher resolution (bit rate) videos or longer retention periods
- ✓ Flexible system structure
- ✓ Leverage QNAP storage power
  - Product (wide range NAS/JBOD solution)
  - Latest technology (10GbE, SAS 6G..etc)
  - Performance benchmarking & testing
  - RAID fundamentals and innovative storage applications (SSD Cache, hot spare drive, etc...)



# Benefits

## Reducing Investment

- ✓ Buy only to meet your current needs and expand the system later to meet future requirements
- ✓ Free software updates & performance enhancements
- ✓ Less maintenance costs and rich support resources
- ✓ QNAP holds all accountable for backend storage (NAS + NVR)

**QNAP**®



# Benefits

## Highly Scalable

- ✓ Scalable design supports more than **912 TB** raw capacity for one NVR
- ✓ Not only scalable capacity, but scalable design and architecture (e.g. online RAID migration/expansion)



SATA Storage



# Agenda

## Introduction

Background

Challenges

## Solutions

Features

Advantages

Benefits

Limitations



# How to Connect



VioStor NVR  
(Max. 64ch)



Turbo NAS  
(Max. 144TB)



REXP  
(Max. 768TB)

Expanded to 912TB

*Notes: Design and specifications are subject to change without notice*

# Reserve Throughput

- To ensure the NVR CPU works well with the recording and storage expansion, we strongly suggest **reserving** the recording network throughput.



VS-2000/4000/6000  
Pro series

- Suggested recording network throughput limit: 90 Mbps



VS-2100/4100/6100  
Pro+ series

- Suggested recording network throughput limit: 160 Mbps



VS-8100U/12100U-  
RP Pro(+) series

- Suggested recording network throughput limit: 360 Mbps

# Maximum Connected NAS

- To ensure the NVR CPU works well with the recording and storage expansion, please follow the suggested limit of connected NAS.



VS-2000/ 4000/ 6000/  
4000U-RP Pro series

- Only 1 NAS is recommended for storage expansion.



VS-2100/ 4100/ 6100/  
4100U-RP Pro+ series

- Up to 2 NAS is recommended for storage expansion.



VS-8100U/ 12100U-RP  
Pro(+) series

- Up to 3 NAS is recommended for storage expansion.

# Important Reminders

- Applicable Models:
  - ✓ VioStor NVR Pro(+) series: Firmware v5.0.3 or above
  - ✓ QNAP NAS TVS-x63, x71 series and TS-x51, x53, x69, x79, x70, x80 series: Firmware v4.1.2
- NAS must be solely used for surveillance storage expansion.
- All NVR and NAS must adopt static IP address.
- A Gigabit switch is required for this application.



# QNAP Security

## Maximize your system scalability

[www.qnapsecurity.com](http://www.qnapsecurity.com)

