QSAN Official Document

Frigate Setup Guide

Application Note

July 2026

ANNOUNCEMENT

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TABLE OF CONTENTS

Announcement i
Notices iv
Preface v
Technical Support v
Information, Tip, and Caution v
1. Introduction to Frigate 1
1.1. Frigate for AI NVR 1
2. Configuration Settings 2
2.1. Environment and Topology 2
2.2. Initial Setup Steps 3
2.3. Deployment Steps 3
3. Conclusion 5
4. Appendix 6
4.1. Apply To 6

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FIGURES

Figure 1-1 Frigate for AI NVR 1
Figure 2-1 Demonstration Topology 3

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PREFACE

Technical Support

Do you have any questions or need help trouble-shooting a problem? Please contact QSAN Support, we will reply to you as soon as possible.

- Via the Web: https://www.qsan.com/technical_support
- Via Telephone: +886-2-77206355
- (Service hours: 09:30 - 18:00, Monday - Friday, UTC+8)
- Via Skype Chat, Skype ID: qsan.support
- (Service hours: 09:30 - 02:00, Monday - Friday, UTC+8, Summer time: 09:30 - 01:00)
- Via Email: support@qsan.com

Information, Tip, and Caution

This document uses the following symbols to draw attention to important safety and operational information.



INFORMATION

INFORMATION provides useful knowledge, definition, or terminology for reference.



TIP

TIP provides helpful suggestions for performing tasks more effectively.

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CAUTION

CAUTION indicates that failure to take a specified action could result in damage to the system.

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1. INTRODUCTION TO FRIGATE

Frigate is an open-source, AI-powered video surveillance application designed for real-time object detection and event-based video recording. By leveraging modern containerized architectures, Frigate enables scalable deployment of intelligent surveillance services across edge and enterprise environments.

1.1. Frigate for AI NVR

Frigate provides a comprehensive AI surveillance framework that supports camera stream ingestion, real-time AI inference, event indexing, and secure playback through a web-based interface. It is commonly used in environments such as smart campuses, factories, retail spaces, and edge surveillance deployments.



Figure 1-1 Frigate for AI NVR

In surveillance systems where continuous recording and availability are critical, traditional single-node deployments introduce risks of service interruption and data loss. This application note demonstrates how Frigate can be deployed on the **QSAN KSM platform** using a **high-availability master–worker architecture**, ensuring uninterrupted recording and centralized service management.

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2. CONFIGURATION SETTINGS

This chapter describes the environment configuration and topology used to deploy the Frigate AI surveillance microservice on the QSAN KSM platform. The configuration focuses on providing a stable execution environment, reliable network connectivity, and high-availability storage for continuous video recording.

The following sections outline the demonstration environment and logical topology used in this application note.

2.1. Environment and Topology

Demonstration Environment

- Master Node
  - Model: KS2204-8C
    CPU: 8 cores
    Memory: 16 GB
- Worker Node
  - Model: KS1205-4A x 2 (1 x primary write node / 1 x failover node)
    CPU: 4 cores
    Memory: 8 GB

Demonstration Topology

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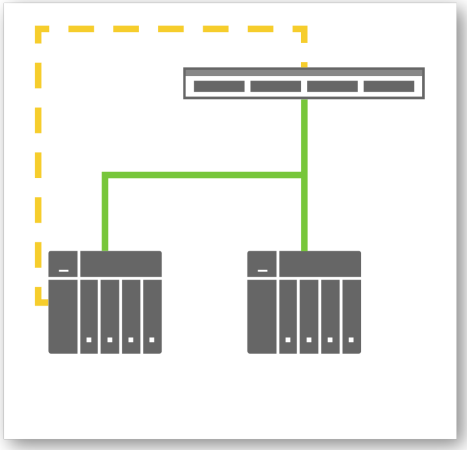


Figure 2-1 Demonstration Topology

2.2. Initial Setup Steps

In this use case scenario, we will explore a simple procedure to perform a backup using Atempo Miria for archive and store the backup data on an unified storage solution. This configuration ensures the security and accessibility of critical data, providing a reliable solution for data protection and disaster recovery needs.

1. Create storage pools on both Worker Node A and Worker Node B for surveillance recordings.
2. Create dedicated storage spaces for Frigate recordings on each worker node.
3. Verify that both storage spaces are accessible and have sufficient capacity for continuous video recording.
4. On the KSM platform, assign Worker Node A as the primary recording storage path and Worker Node B as the secondary (failover) recording storage path for the Frigate service.

2.3. Deployment Steps

Step 1. Pull Frigate Container Image

1. Log in to the KSM management interface.
2. Navigate to the container image management section.

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3. Pull the official frigate/frigate image from Docker Hub.

Ensure that the image is successfully downloaded and available for service creation.

Step 2. Create Frigate Microservice

1. Create a new microservice on the **Master node** using the KSM interface.
2. Select the Frigate container image.
3. Allocate system resources (CPU and memory) according to platform requirements.
4. Configure required service parameters and environment variables as needed.

After creation, verify that the Frigate service status is running normally.

Step 3. Assign Storage Targets

1. Assign the primary recording storage path to **Worker Node A**.
2. Assign the secondary recording storage path to **Worker Node B**.
3. Confirm that the Frigate service can write recording data to the primary storage target.

This configuration enables high-availability recording by allowing manual failover to the secondary storage node when required.

Step 4. Configure Network Access

1. Assign TCP ports for internal communication between the Frigate service and storage nodes.
2. Enable HTTPS access for the Frigate Web UI.
3. Verify external connectivity by accessing the Frigate Web interface through a web browser.

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3. CONCLUSION

By deploying Frigate on the QSAN KSM platform with a 1 + 2 master–worker architecture, organizations can implement a resilient and scalable AI surveillance solution with high-availability recording.

This deployment model simplifies service management, minimizes downtime risk, and ensures continuous video recording, making it suitable for enterprise, smart city, and edge surveillance environments.

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4. APPENDIX

4.1. Apply To

- KSM firmware 1.0.0 and later

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