



NVR FUSION CENTER APPLICATION USER MANUAL

*Comprehensive User Guide for Device Management, Channel
Configuration, and Playback Operations*

Abstract

This document provides a complete operational guide for the NVR Fusion Center Application, a Windows-based surveillance playback system supporting multiple NVR vendors such as Bosch, Hanwha Vision, Axis Communications, Honeywell, Panasonic, CP Plus, Godrej Security Solutions, and Vintron. It covers system setup, device configuration, channel management, and playback functionalities. The guide is designed for both administrators and operators, ensuring efficient deployment and usage of the system.

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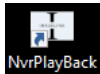
1. Introduction

The **NVR Fusion Center Application Version** is a desktop-based video surveillance management system that enables users to:

- Add and manage multiple NVR devices
- Configure camera channels
- Playback recorded video streams
- View multiple channels simultaneously

The application supports multiple vendors and provides a unified interface for surveillance playback.

Application



Icon: (Double Click the Icon to open the application)

2. System Overview

Key Features:

- Multi-vendor NVR support
- Channel-based playback
- Multi-screen layout (1x1, 4x4, 3x3, 16x16)
- SQL Server-based storage
- User-friendly UI

3. System Requirement

Software:

- Windows 10 / 11
- .NET Framework 4.8
- SQL Server Express

Hardware:

- Minimum 8GB RAM
- GPU recommended for video rendering

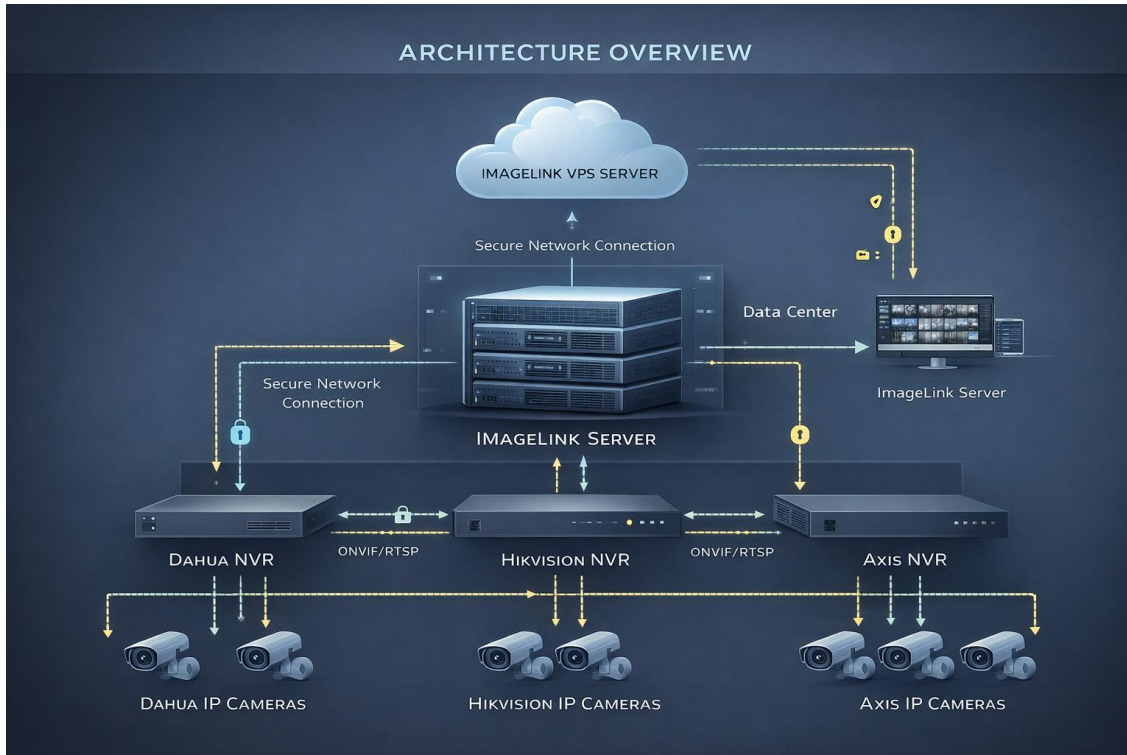
4. Installation & Setup

Steps:

1. Copy application folder
2. Configure DBString.json
3. Run database scripts:
 - database.sql
 - databaseTable.sql
4. Launch application: NvrPlayBack.exe

5. Application Architecture

The system follows a client-server architecture where video streams are aggregated and synchronized.



6. Application Overview

Description: The main interface consists of:

Top Panel:

Layout and Layout
Controls
User Control

Left Panel:

Device & Channel Tree
PAN Controls

Center Panel:

Playback Grid

Bottom Panel:

Playback Controls
Export



Main Playback Screen

7. User Roles

7.1 Administrator

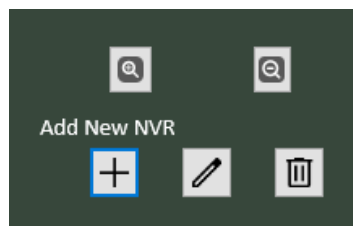
- Add/Edit/Delete NVR devices
- Configure channels
- Manage database

7.2 Operator

- View devices
- Playback video
- Select layouts

8. Device (NVR) Management

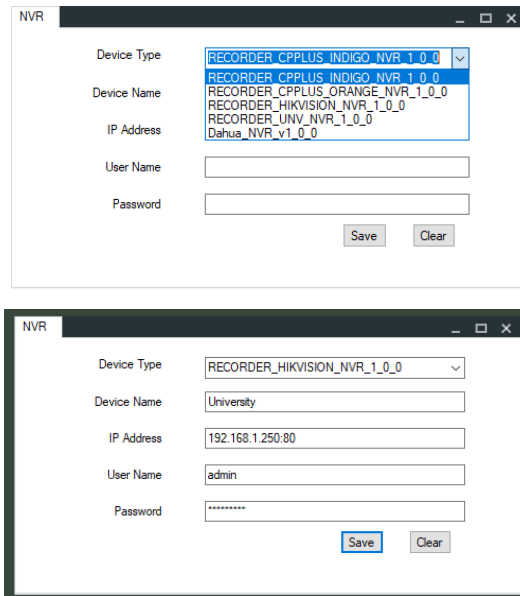
8.1 Add New NVR



Add NVR Button (Highlight + icon)

Steps:

1. Click **"+" (Add New NVR)**
2. Fill details:
 - o Device Type
 - o Device Name
 - o IP Address
 - o Username
 - o Password
3. Click **Save**



The top screenshot shows the 'NVR' configuration window with the 'Device Type' dropdown menu open, displaying a list of device types including 'RECORDER_CPPLUS_INDIGO_NVR_1_0_0', 'RECORDER_CPPLUS_ORANGE_NVR_1_0_0', 'RECORDER_HIKVISION_NVR_1_0_0', 'RECORDER_UNIV_NVR_1_0_0', and 'Dahua_NVR_v1_0_0'. The bottom screenshot shows the same window with the following fields filled: Device Type is 'RECORDER_HIKVISION_NVR_1_0_0', Device Name is 'University', IP Address is '192.168.1.250:80', User Name is 'admin', and Password is masked with asterisks. The 'Save' button is highlighted in blue.

NVR Form Filled with Data (Annotate fields)

Expected Output:

- Success message displayed
- Device appears in tree



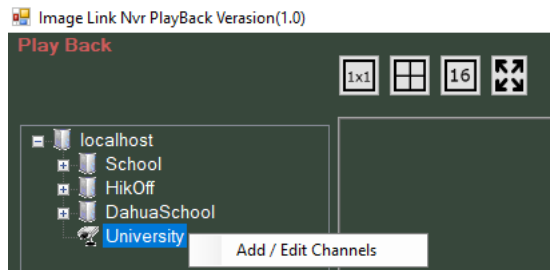
Success Message

8.2 Supported Device Types

- Bosch
- Hanwha Vision
- Axis Communications
- Honeywell
- Panasonic
- CP Plus
- Godrej Security Solutions
- Vintron

9. Channel Management

9.1 Add/Edit Channels



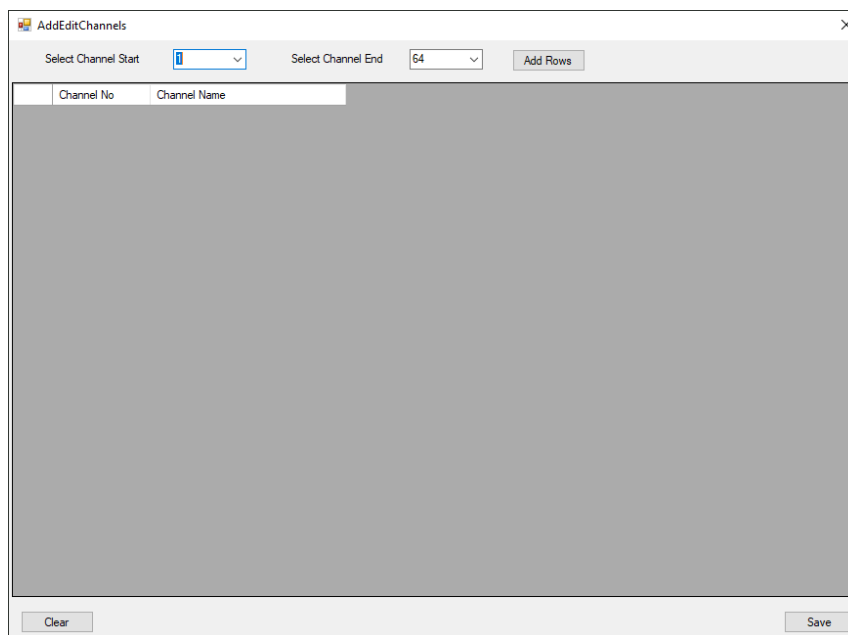
Channel Management Window

Steps:

1. Right-click device
2. Select **Add/Edit Channels**
3. Select:
 - o Channel Start
 - o Channel End
4. Click **Add Rows**
5. Enter channel names
6. Click **Save**

9.2 Channel Structure

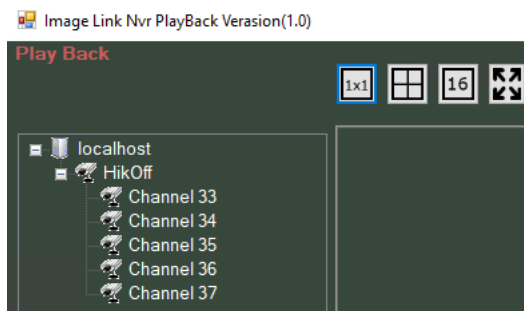
- Channels are mapped to devices via database
- Each channel has:
 - o Channel Number
 - o Name



Note: For DVR the channel number starts from 1 to 32 for NVR channel starts from 33to 64

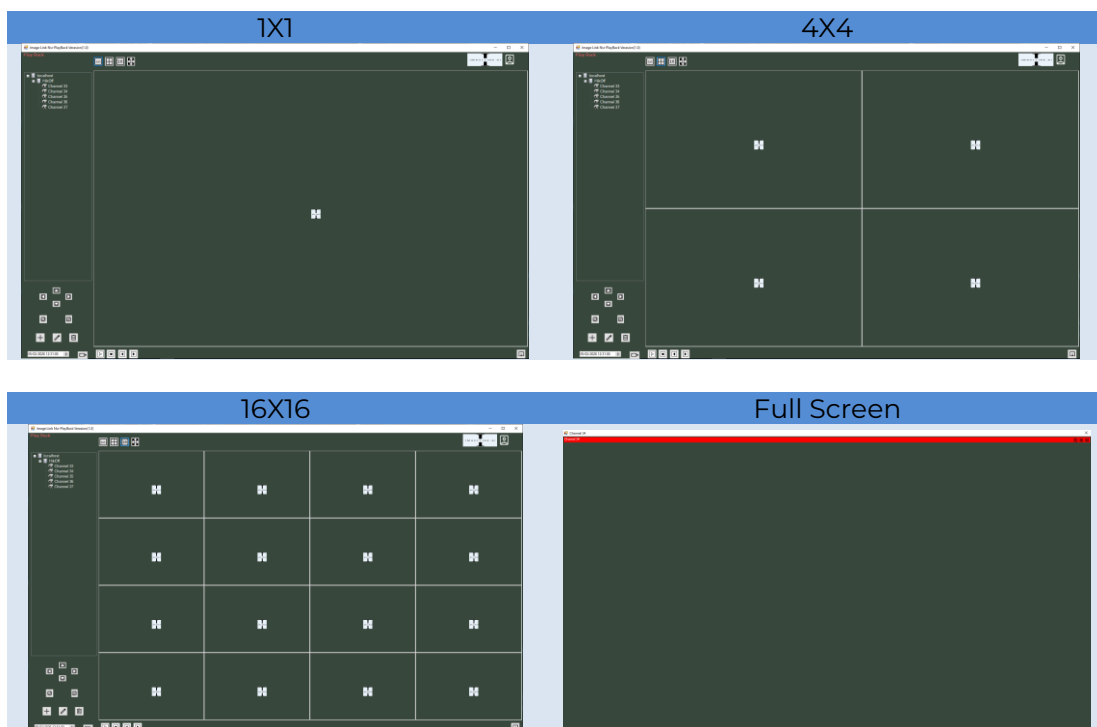
10. Layout & Playback Operations

10.1 Select Layout



Layout Controls

Options: 1x1 | 4x4 | 16x16 | Full Screen



10.2 Playback Video

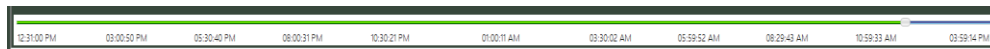
Steps:

1. Expand device tree
2. Select channel
3. Choose date/time
4. Playback starts

10.3 Timeline Control



Live Playback



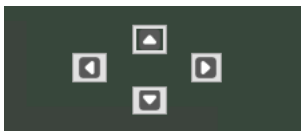
Timeline Control

- Select playback time
- Navigate recordings

11. Camera Control & Zoom

11.1 PTZ Camera Control

Using the following **Left-Right-Top-Bottom** buttons to move PTZ Camera



11.2 Digital and Motorized Zoom

Digital Zoom: Zoom-In/Out in NVR is achieved through “+/-” button digital zoom enlarges pixels in live/playback view

Motorized Zoom: lens is adjusted by using “+/-” button zoom used for PTZ Control. Most motorized zoom cameras will automatically refocus after zooming.



12. Workflow Diagram

12.1 Device Addition Workflow

User → Open App → Click Add NVR → Enter Details → Save → DB Insert → UI Update

12.2 Channel Configuration Workflow

Select Device → Open Channel Editor → Define Range → Save → DB Update

12.3 Playback Workflow

Select Channel → Choose Layout → Load Stream → Render Video

13. Best Practices

- Use static IP for NVRs
- Avoid storing plain passwords (future improvement)
- Regular DB backups
- Limit channels per view for performance