

User Manual

NX Deep Search Plugin

Version 1.0.0.1

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Introduction

This document provides instructions for installing, configuring, and using the ***Nx Deep Search Plugin*** within Nx Witness VMS. It is intended to help users understand the system workflow and effectively utilize the plugin's search capabilities.

1. Feature Overview

Nx Deep Search Plugin is designed for deployments using *VIVOTEK cameras* equipped with *Video Content Analysis (VCA)*. By leveraging metadata generated by supported cameras, the plugin enables efficient searching of recorded video.

It supports object metadata - based searches for detected objects by "*Attribute search*", such as people and vehicles, within a specified time range. Users can refine results using attributes such as gender, vehicle type, and clothing color to quickly narrow down matches.

The plugin also supports scene - based searches - "*Scene Search*" for analytics events, including line crossing and intrusion, allowing users to filter results based on activity detected within defined areas.

These capabilities enable users to quickly identify relevant recordings and review video evidence directly within Nx Witness.

This version (**1.0.0.1**) delivers a complete end-to-end searchable workflow within Nx Witness. Continuous improvements will be introduced in future updates to further enhance functionality and user experience.

2. System Overview

The Nx Deep Search solution consists of three main components:

1. *Object Metadata Plugin*

Installed on the *Nx Server* side, this component forwards metadata from supported cameras.

2. *Deep Search Server*

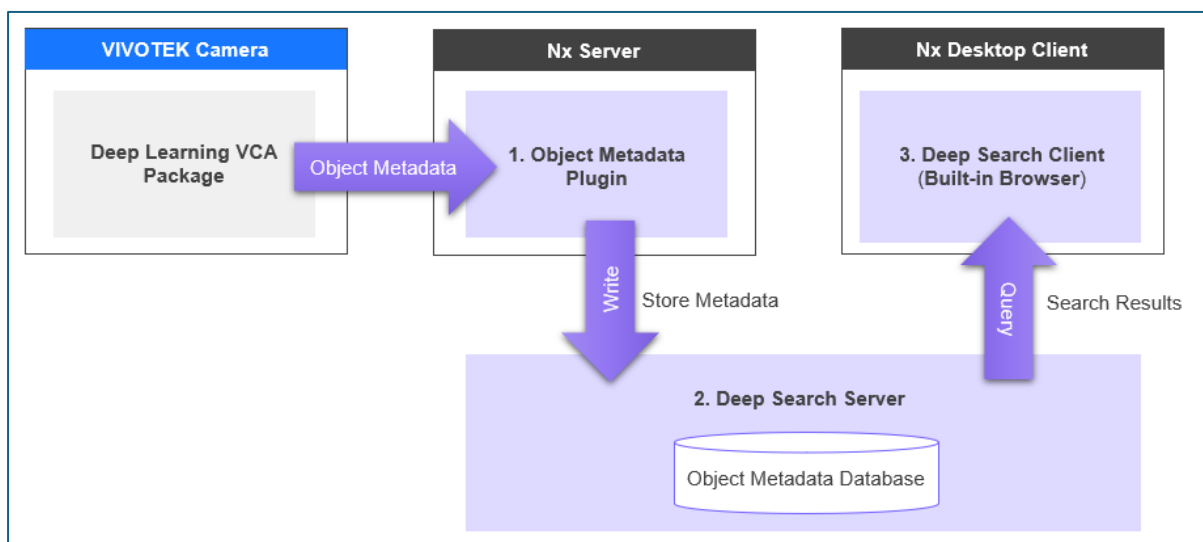
Processes, stores, and provides query services for the metadata used by Deep Search.

3. *Deep Search Client*

Provides the user interface within the *Nx Desktop Client*, including Attribute Search, Scene Search, and result viewing. In this document, this interface is referred to as the *Deep Search UI*.

These components communicate with each other to exchange metadata and search results. The system stores searchable data locally to enable efficient querying and fast result retrieval.

Figure 1. High-Level System Architecture of Nx Deep Search



3. System Requirements and Limitations

This chapter describes the validated environment, current limitations, and known issues for this release of the *Nx Deep Search Plugin*.

3.1 Environment

The following environment has been validated for this release:

- *Nx Witness VMS*: 6.1.0.42176
- *Operating Systems*: Windows 10, Windows 11, and Ubuntu 24.04.3 LTS

3.2 Limitations

This release is primarily intended for *local deployment*, in which *Nx Server* and the *Deep Search Server* are installed on the same machine.

The plugin is currently designed for *single-server operation only*.

3.3 Known Issues

The following known issues apply to this release:

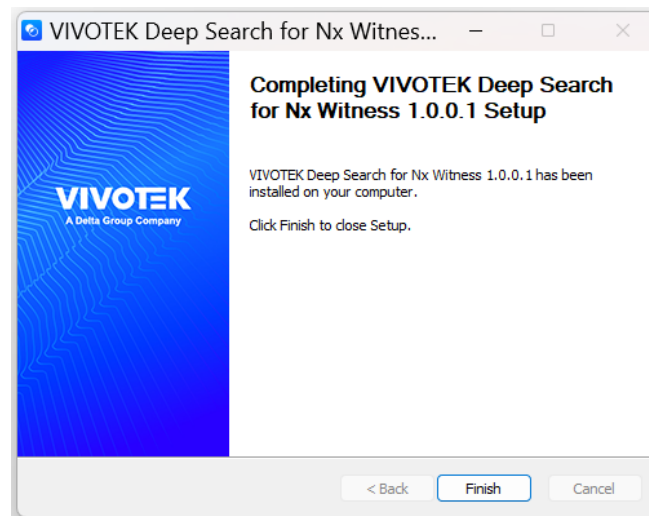
- *Qt WebEngine rendering issues* may occur on legacy GPUs.
- *Layout and tab control behavior* may be affected by the current UI state of the *Nx Desktop Client*.

4. Getting Started

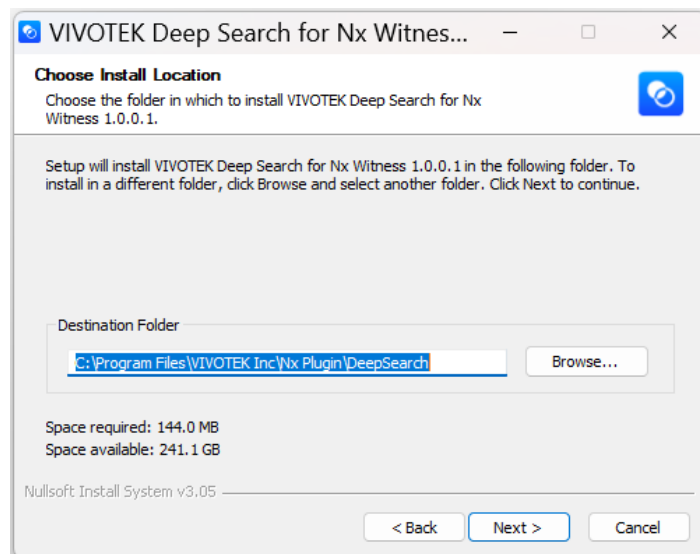
4.1 Installation on Windows

This section describes how to install the Nx Deep Search Plugin on Windows.

1. *Execute the installer file:*
VIVOTEK Deep Search for Nx Witness 1.0.0.1.exe
2. *Click Next to continue.*

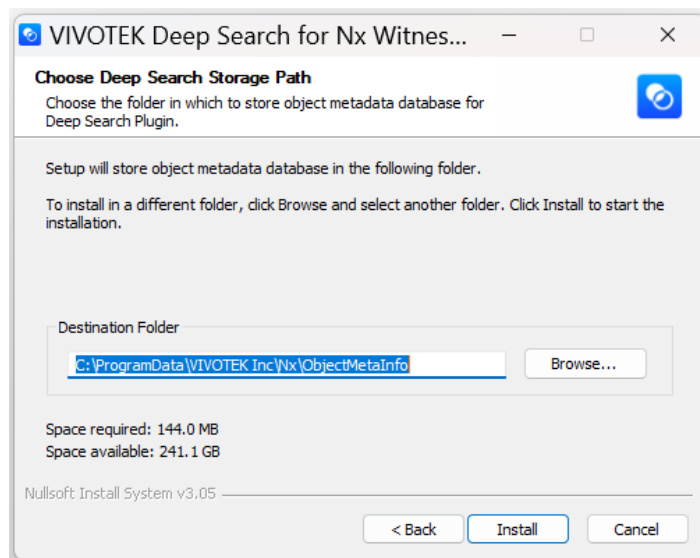


3. By default, the installer places the *Deep Search Server* and *Deep Search Client* in the following directory: C:\Program Files\VIVOTEK Inc\Nx Plugin\DeepSearch



4. The *Object Metadata Plugin* is installed in the following directory: `C:\Program Files\Network Optix\Nx Witness\MediaServer\plugins\vivotek_objectmeta_plugin`
5. Select the storage path for object metadata. The default path is: `C:\ProgramData\VIVOTEK Inc\Nx\ObjectMetaInfo`

For storage capacity considerations, it is recommended to store object metadata in a separate location with sufficient disk capacity to avoid affecting server operation.



6. Click *Install* to begin installation.
7. After installation is completed successfully, the *Deep Search Backend Manager* appears in the system tray and provides basic controls for backend components, including the *Deep Search Server* and *Deep Search Client services*.



Note: Nx Server is restarted automatically during installation.

Uninstallation on Windows

- Open *Programs and Features*
- Select *VIVOTEK Deep Search for Nx Witness*
- Click *Uninstall*
- Follow the on-screen instructions

4.2 Installation on Linux

This section describes how to install the *Nx Deep Search Plugin* on Linux.

1. Run the following command to install the package:

```
sudo apt install ./vivotek-deepsearch-  
nx_1.0.0.1_amd64.deb
```

2. By default, the installer places the *Deep Search Server* and *Deep Search Client* components in the following directory:

```
/opt/vivotek/nx/DeepSearch
```

3. The Object Metadata Plugin is installed in the following directory:

```
/opt/networkoptix/mediaserver/bin/plugins/vivotek  
_objectmeta_plugin
```

4. During installation, you will be prompted to enter a custom storage path for object metadata:

Enter custom database path (or press Enter to use default):

```
=====  
Default database path: /var/lib/vivotek/nx/ObjectMetaInfo  
Enter custom database path (or press Enter to use default):
```

The default path is:

```
/var/lib/vivotek/nx/ObjectMetaInfo
```

For storage capacity considerations, it is recommended to store object metadata in a separate location with sufficient disk capacity to avoid affecting server operation.

1. After installation is completed successfully, the *Deep Search Backend Manager* appears in the system tray and provides basic controls for backend components, including the *Deep Search Server* and *Deep Search Client* services.

Note: *Nx Server* is restarted automatically during installation.

Uninstallation on Linux

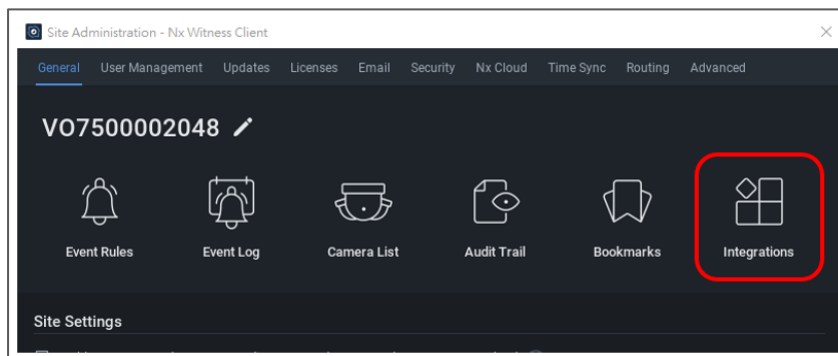
- Run the following command to uninstall the package:
 - `sudo apt purge vivotek-deepsearch-nx`

4.3 Verifying Plugin Installation and Enablement

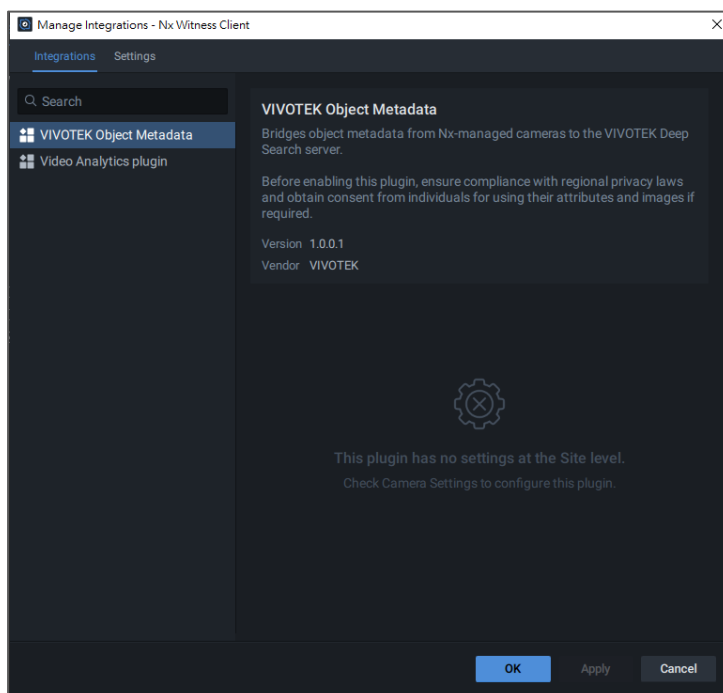
After installation, verify that the plugin is installed and enabled correctly in *Nx Witness Desktop Client*.

Verify Plugin Installation

1. Open *Nx Witness Desktop Client*.
2. Go to *Site Administration* → *Integrations*.

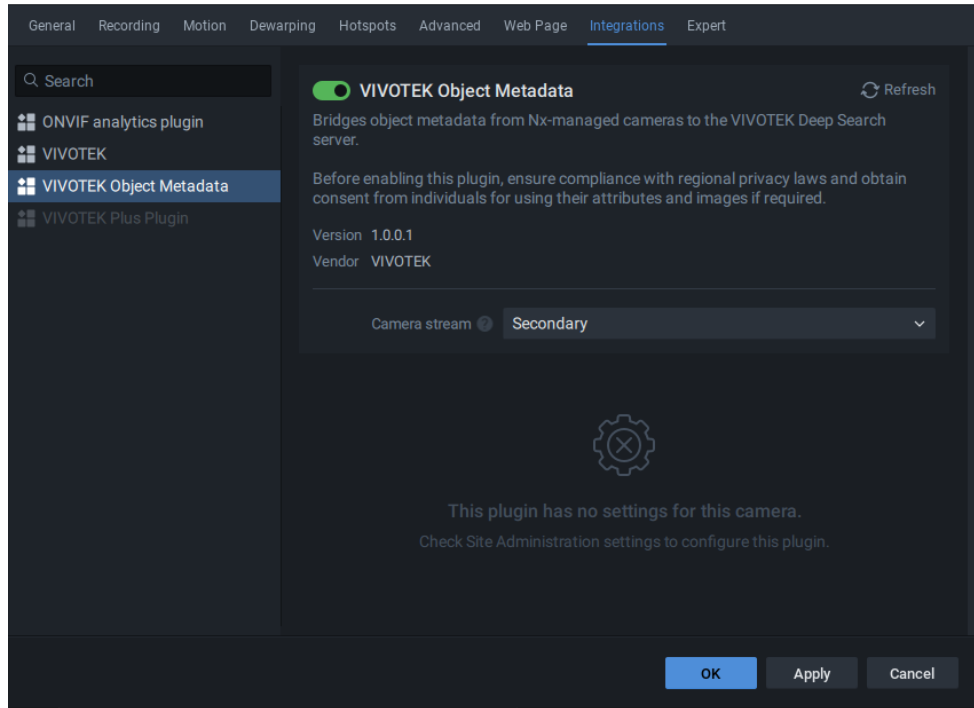


3. Confirm that *VIVOTEK Object Metadata* is listed.



Enable the Plugin for a Camera

1. *Select the target camera.*
2. *Open Camera Settings → Integrations.*
3. *Find VIVOTEK Object Metadata.*
4. *Enable the plugin.*

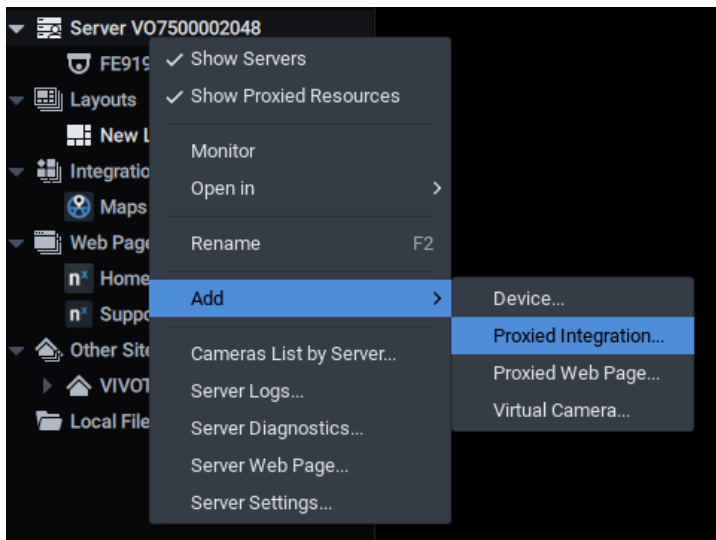


Once the plugin is enabled, the *Object Metadata Plugin* begins retrieving object metadata from the camera and forwarding it to the *Deep Search Server* for storage and indexing.

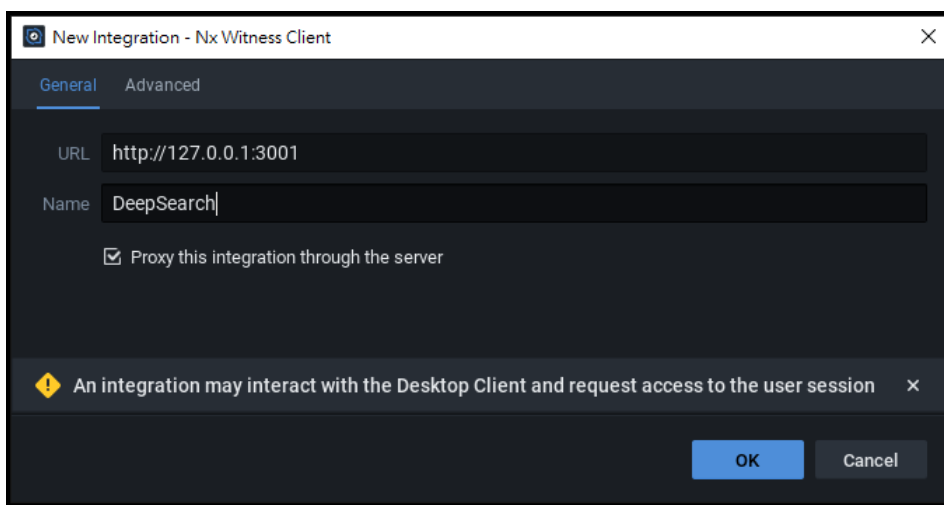
4.4 Open Deep Search UI

In *Nx Witness Desktop Client*, add the *Deep Search UI* as a proxied integration.

1. Go to *Add* → *Proxied Integration*.



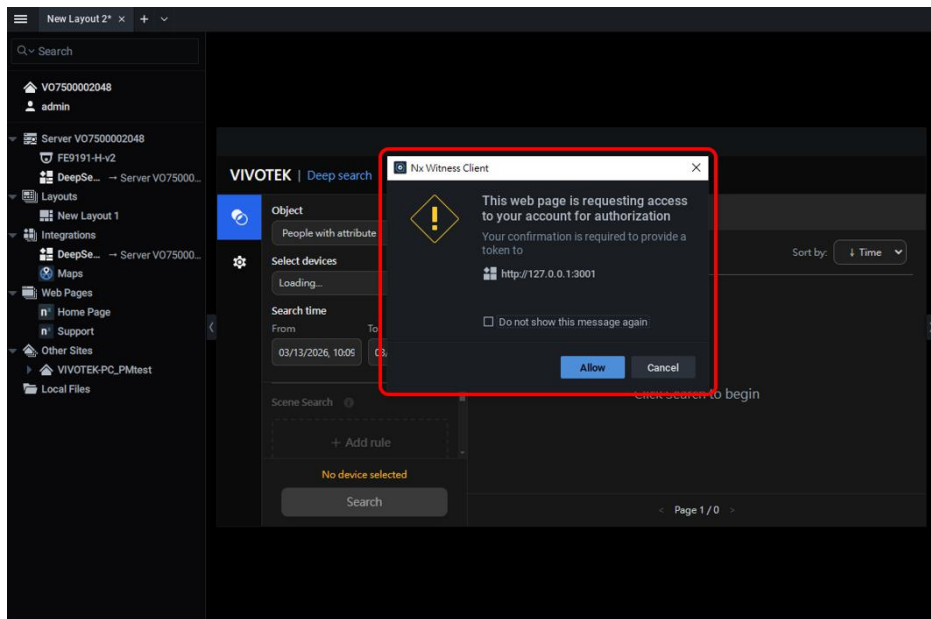
2. Enter the following URL:
<http://127.0.0.1:3001>
3. Enter the integration name:
DeepSearch
4. Complete the setup.



After the integration is added successfully, the *Deep Search UI* page becomes available inside *Nx Witness Desktop Client*.

Note: When the *Deep Search UI* is opened for the first time in the built-in browser integration, an authorization dialog normally appears. Users must select **Allow** to grant the required permission.

This authorization is required for the *Deep Search UI* to function properly and access necessary system information.



4.5 Deep Search UI Overview

The *Deep Search UI* includes the following main panels:

Search Panel

The *Search Panel* is used to define search criteria and review search results.

- **Left pane:** Search Filters
- **Right pane:** Search Results

Settings Panel

The *Settings Panel* provides system and integration status information, including:

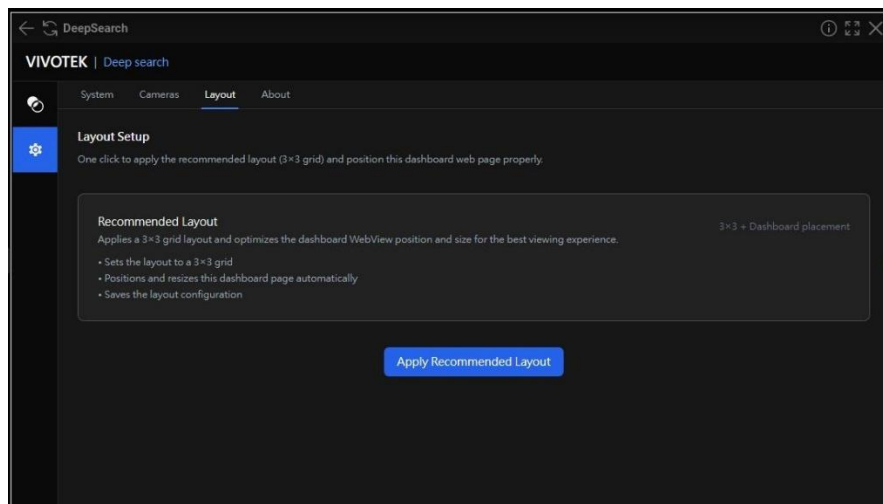
- **System:** Connectivity status of the [Deep Search Server](#)
- **Nx Plugin:** Installation status of the [Nx Server](#) plugin
- **Camera Plugin Status:** Per-camera status of object metadata recording (*Enabled / Disabled*)
- **Layout:** One-click action to apply the recommended layout
- **About:** Version information

5. Search Workflow

This section describes the basic workflow for performing a search using [Deep Search](#).

1. Apply Recommended Layout first.

This helps provide a smoother experience when opening playback from search results.



1. Configure the search filters in the *left panel*, such as:

- *Object type*
 - *Devices (cameras)*
 - *Time range*
 - *Attributes*
 - *Scene search conditions*
2. Click *Search* to start the search.
 3. The search results are displayed in the *right panel*.
 4. Hover over the result thumbnail and click *Play*.
 5. *Nx Witness Desktop Client* opens the corresponding camera tab and starts playback at the event timestamp (typically about 5 seconds earlier).

