Synology®

Archive Vault Administrator's Guide

Based on Version 2.0

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Introduction

Overview

Surveillance Station Archive Vault is a solution that offers offsite archiving and longer recording file retention periods. You can set up remote archiving tasks in the Archive Vault application in Surveillance Station to automatically retrieve and archive corresponding recording files from remote servers, and centralize recording files by archiving files from small-scale source recording servers to a larger Archive Vault server to enhance file security and extend file retention.

This architecture can be used for small-scale NAS or NVR setups in different locations. To achieve easier and consistent management, you can retrieve hot data (e.g. video images recorded within 30 days) from local storages, and archive older cold data to a larger NAS or NVR server in the headquarters. Archive Vault also enhances file security. For example, you can specify the source recording server to retain recording files for 1-30 days, and the archive server to retain files for 1-365 days. If the recording files on the source recording server are unexpectedly lost or deleted, recent recording files on the archive server can still be quickly retrieved.

In addition to basic recording archiving features, Synology Archive Vault also provides the following features to enhance archiving functions and improve convenience:

- One-time and scheduled archiving tasks
- Recording-type selection
- Network bandwidth control
- Independent archive rotation mechanism
- Historical records of archiving tasks
- Convenient interface to view and download recordings

# Archive Vault System Architecture

Archive Vault is designed to provide you with the flexibility to configure one-to-one or one-to-many relationships. As its architecture is independent from that of Surveillance Station Centralized Management System (CMS), you can set up archiving tasks via an easy-to-use interface without the need to set up client-server environments.

The system architecture diagram below is an example of a one-to-many relationship between an archive server and multiple source recording servers.
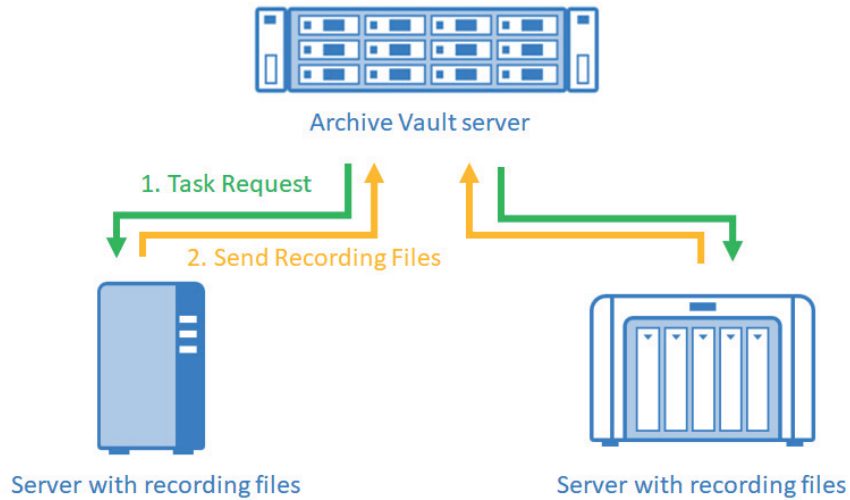
Once the archiving task is configured on the archive server, the system will start archiving based on the specified schedule and the previously configured archiving settings. The archive server will send transmission requests to source recording servers, and servers that have received the requests will then run tasks in the background and send recording files to the archive server according to the file filter and other tasks settings. In addition, you can specify bandwidth limits for different time periods to satisfy all usage scenarios, such as limiting a specific bandwidth during office hours to provide smooth internet connectivity and ensure business runs efficiently.

The concept behind Archive Vault is to provide a larger archive server to extend recording file retention and run offsite archiving tasks while distributing the risk of losing recording files. As shown in the example below, a branch store keeps recordings within 30 days and only sends motion detection events that have occurred during 00:00 AM – 7:00 AM to the headquarters on a daily basis to be archived for 365 days.
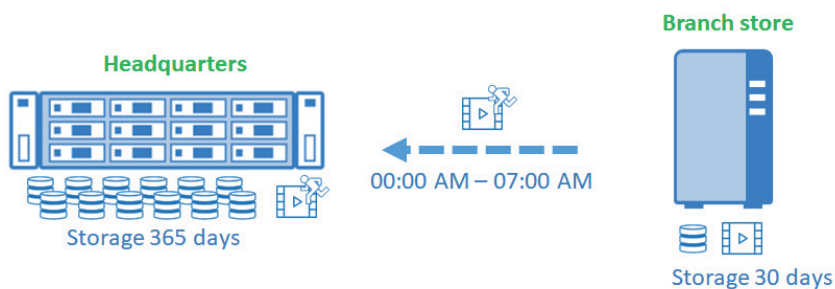
One-time and Scheduled Archiving Tasks

Synology Archive Vault provides two types of archiving tasks, one-time archiving and scheduled archiving. The following paragraphs introduce general introductions to the two types of archiving tasks. Further details will be covered in the later chapters.

- **One-time archiving tasks**: Specify a date range to archive recordings, and recordings that match the criteria will be archived. Once all the recordings in the time range are archived, the tasks will be fully completed. For example, you can specify to archive recordings of camera A from February 15, 2019 to February 17, 2019.

- **Scheduled archiving tasks**: Schedule continuous archiving tasks. You only need to set a start time, and the system will continue to run the tasks regularly unless you disable them. For example, you can choose to archive recordings of camera A starting from Jan 1, 2020. Starting from Jan 1, the recordings will be archived to a pre-defined destination continuously.

Basic Operations

Get Started with Archive Vault

Archive Vault is an application available in Surveillance Station 8.1 and above. You can create new archiving tasks via the Archive Vault application on the archive server to transfer recordings from the source recording server to the archive server.

In Archive Vault, you can manage all archiving tasks set up on the server, view archiving progress, or adjust archiving settings, etc. This chapter will guide you through the process of creating archiving tasks, adjusting bandwidth control settings based on individual requirements, and viewing archived files via a user-friendly interface.
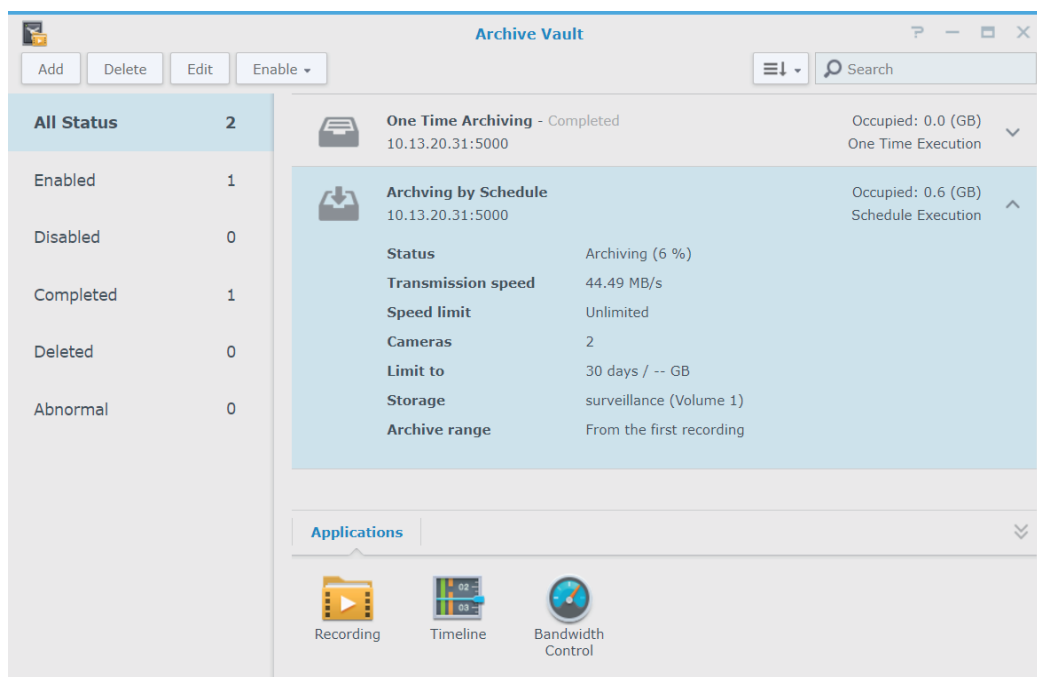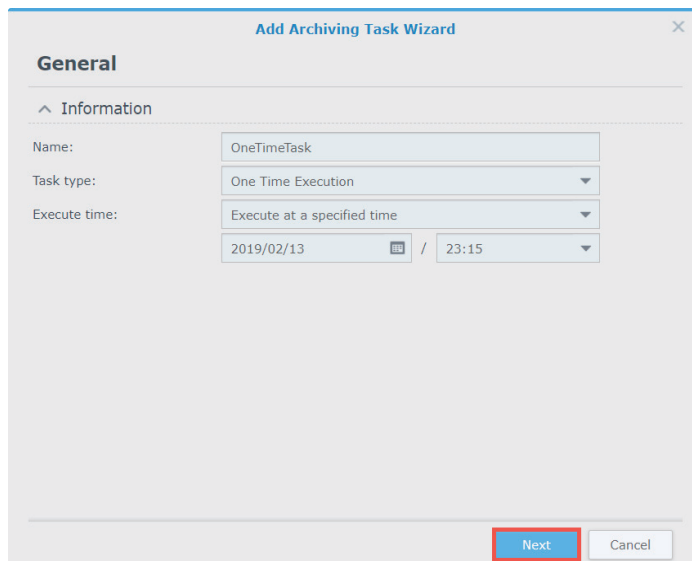
Create New Archiving Tasks

You can create one-time or scheduled archiving tasks. The following sections provide instructions on how to create archiving tasks on **Add Archiving Task Wizard** for different archiving task types.
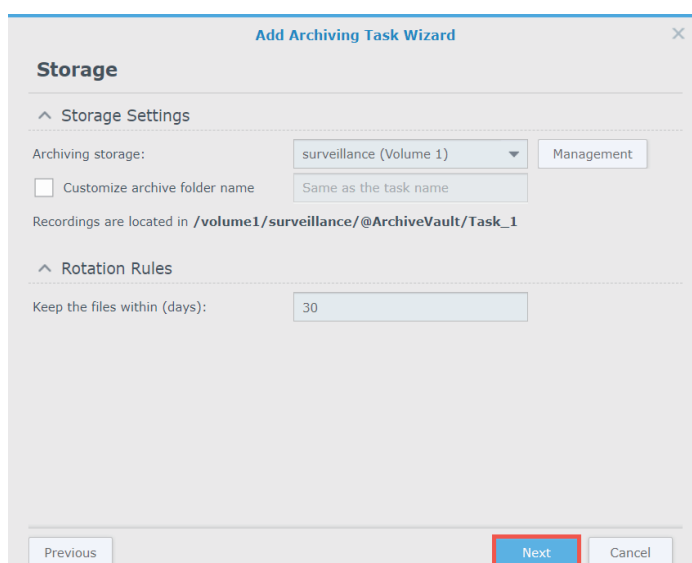
One-time archiving tasks

1 Launch **Archive Vault**, and click **Add**.

2 In the **General** page, specify a **Name** for the task, select **One Time Execution** from the **Task type** drop-down menu, then select **Execute immediately** or **Execute at a specified time** from the **Execute time** drop-down menu. When selecting **Execute at a specified time**, you will be required to select a specific date and time to run the archiving task for recordings.

3 Click **Next** to continue.

4 In the **Storage** page, choose where to store archived files and modify rotation rules. You can specify a volume to archive files and customize archive folder names under the **Storage Settings** section. The **Management** button launches the **Recording** application, and takes you to the **Storage** tab to manage storage volumes. Under the **Rotation Rules** section, you can specify the number of days to retain recordings.

5 Click **Next** to continue.

6 In the **Source** page, specify the source recording server from the **Archiving source** drop-down menu. If **Remote Server** is selected, please enter the IP address and port, or click on the **magnifying glass** icon to search for servers under the same LAN, then enter the username and password.

7 After testing the connection, click **Next** to continue.

8 In the **Cameras** page, you can view detailed information of all cameras set up on the source recording server. Tick the checkboxes next to the cameras to select the source cameras, and click **Next** to continue.

9 In the **Recording** page, select a start time and an end time to archive recordings, then specify the detailed recording time using the schedule table. In the example below, recordings from February 1, 2019 to February 28, 2019, Monday to Friday from 8:00 AM to 8:00 PM will be archived.

10 Click **Next** to continue.

11 In the **Advanced** page, determine whether to archive all recordings or only those of specific recording modes from the **Recording Mode** drop-down menu. Only the recording files under the selected recording modes will be archived. If **Event Summary** is **Enabled**, recordings will be scaled down and only clips that contain detected events will be archived.

12 Click **Finish** to complete settings for the one-time archiving task.

Note: For more information on defining the recording time and recording type, please refer to the **Select Recordings to Archive** section below.

Scheduled archiving tasks

1 Launch **Archive Vault**, and click **Add**.

2 In the **General** page, specify a **Name** for the task, select **Schedule Execution** from the **Task type** drop-down menu, then select a time frame using the grid below to archive and transmit recording files based on a schedule. In the example below, the archiving task will be performed from 9:00 PM to 07:00 AM on a daily basis.

3 In the **Storage** page, choose where to store archived files and modify rotation rules. You can specify a volume to archive files and customize archive folder names under the **Storage Settings** section. The **Management** button launches the **Recording** application, and takes you to the **Storage** tab to manage storage volumes. Under the **Rotation Rules** section, you can specify the number of days to retain recordings. If the storage space and retention period has been reached, you can choose to remove old archives or stop archiving.

4 Click **Next** to continue.

5 In the **Source** page, specify the source recording server from the **Archiving source** drop-down menu. If **Remote Server** is selected, please enter the IP address and port, or click on the **magnifying glass** icon to search for servers under the same LAN, then enter the username and password.

6 After testing the connection, click **Next** to continue.

7 In the **Cameras** page, you can view detailed information of all cameras set up on the source recording server. Tick the checkboxes next to the cameras to select the source cameras, and click **Next** to continue.

8 In the **Recording** page, select a start time and end time to archive recordings, then specify the detailed recording time using the schedule table. Only the recordings that have occurred during the assigned time range will be archived to the archive server.[1] In the example below, recordings from February 1, 2019 to February 20, 2019, Monday to Friday from 8:00 AM to 10:00 PM will be archived.

9 In the **Advanced** page, determine whether to archive all recordings or only those of specific recording modes from the **Recording Mode** drop-down menu. Only the recording files under the selected recording modes will be archived. If **Event Summary** is **Enabled**, recordings will be scaled down and only clips that contain detected events will be archived[1]. Tick **Archive range does not overlap with the source server checkbox** if you wish to archive recordings that are about to be rotated from the source server[2].

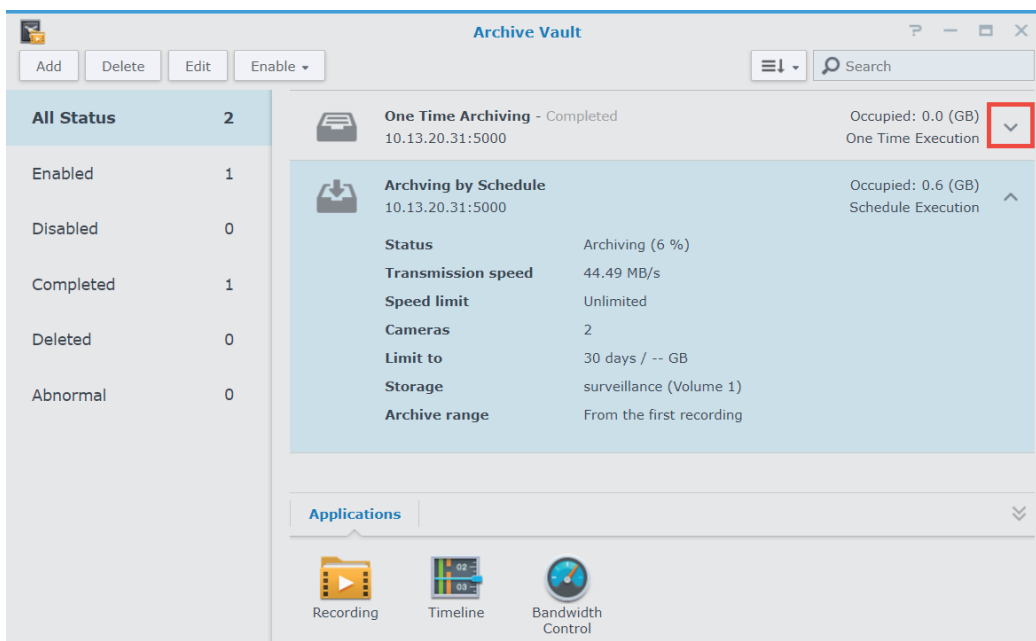**10** Click **Finish** to complete settings for the scheduled archiving task.

> *Note:*
>
> 1. For more information on defining the recording time and recording type, please refer to the **Select Recordings to Archive** section below.
>
> 2. For more information on specifying the archive range, please refer to the **Archive Range does not overlap with the Source Server** section below.

Monitor Task Statuses

After creating the archiving task on the setup wizard, archiving tasks will be performed based on the configured settings. The following paragraphs describe the archiving rules of the two types of tasks:

- **One time archiving tasks**: As a one-time archiving task is created, a task request will be sent to a remote server. Upon receiving task requests, remote servers will filter and truncate current recording files according to the archiving rules and settings, and recordings that match the criteria will be transmitted to the archive server.

- **Scheduled archiving tasks**: As a scheduled archiving task is created, archiving task requests will be regularly sent to the remote server in order to ensure the most up-to-date recordings are archived. The initial process of executing scheduled archiving tasks will be the same as that of one-time archiving tasks. When transmission is complete, the status of the task will be displayed as Up to date, archiving requests will be sent to the source recording server every 30 minutes, and will continue to perform archiving tasks when new recordings match the archiving criteria.

In the Archive Vault application, you can click the expand icon to the right of each archiving task to view detailed information (e.g. archiving status and transmission speed):

The images below are examples of archiving tasks completed and in progress.

Bandwidth Control Settings

Archive Vault allows for bandwidth control for archiving tasks that minimizes bandwidth consumption and ensures smooth network performance. To apply the feature, Go to **Archive Vault**, select a desired task, and click **Bandwidth Control** under **Applications** on the bottom of the page.
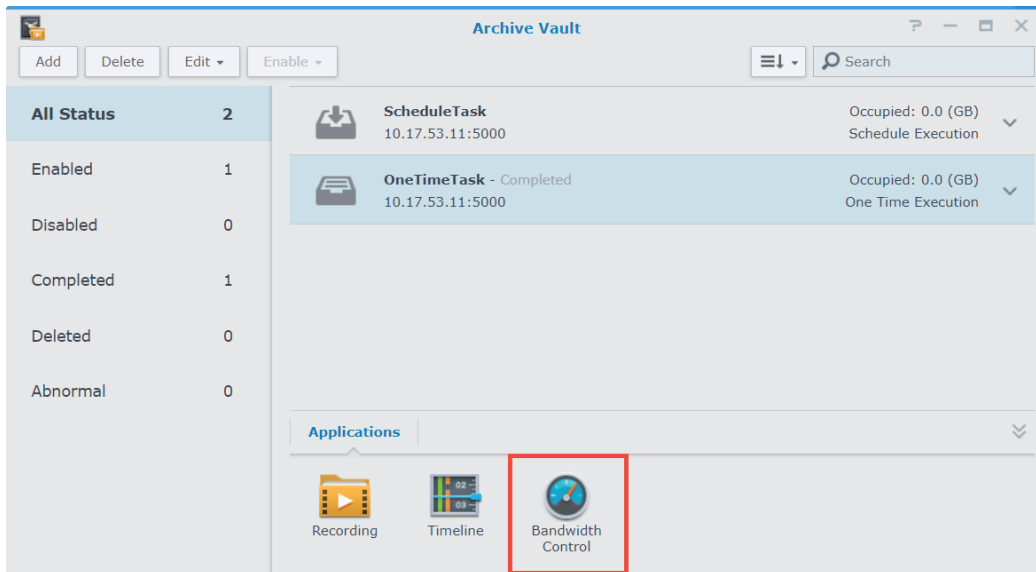

In **Bandwidth Control**, specify the speed limit for specific time periods using the time grid. Time periods marked in blue means there are no speed limits on tasks performed during the time. You can specify **Speed limit 1** and **Speed limit 2** according to individual requirements. The time periods applied with these speed limits will be marked in green and orange respectively.

In the example below, the maximum speed is 1000 KB/s for tasks performed from 7:00 AM to 7:00 PM, and 2000 KB/s for tasks performed from 7:00 PM to 7:00 AM. There are no speed limits on the tasks performed during Saturdays and Sundays.
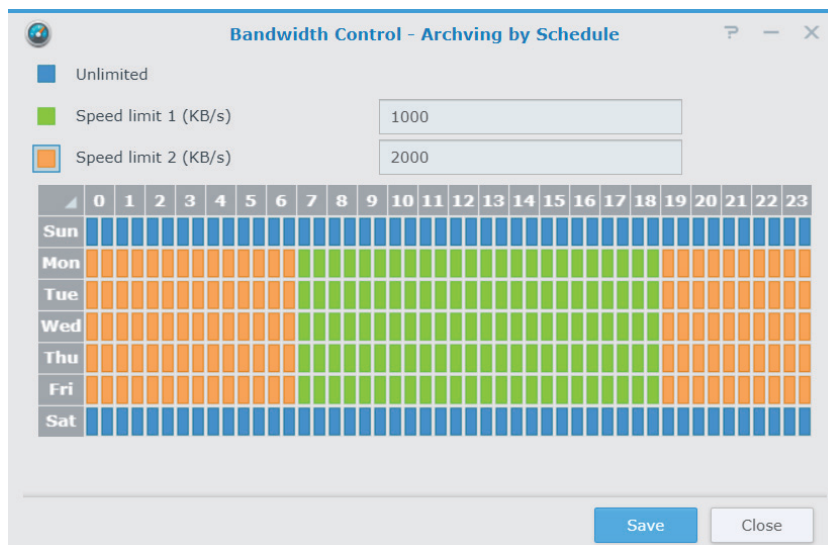
View Archived Recordings

Archived recording files can be played after the archiving tasks start and files are archived. To view archived recording, go to **Archive Vault**, select a desired task, and click **Recording** or **Timeline** under **Applications**.
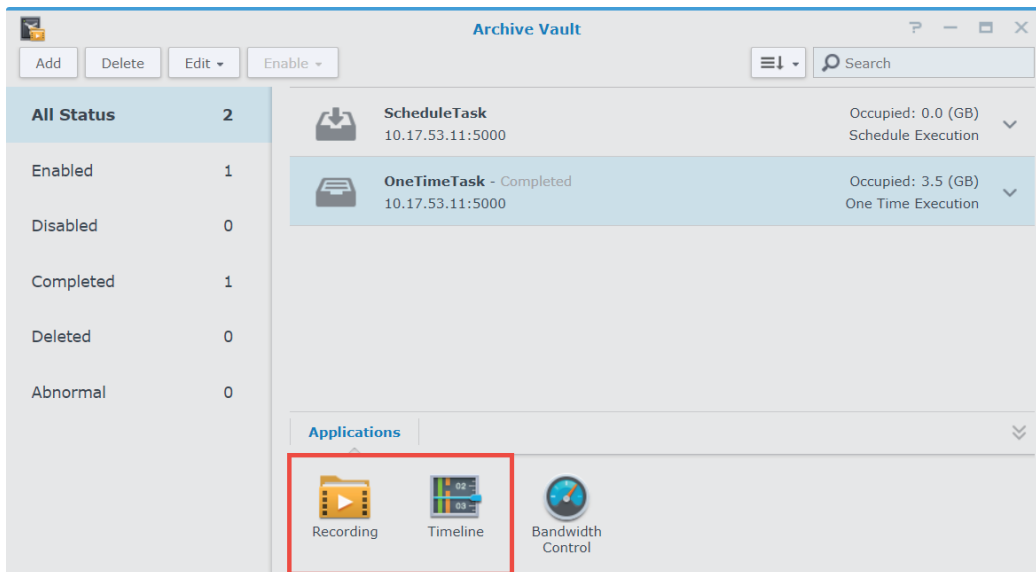
Click the **Recording** application to open up a list of recording files. You can click **Play** or click on the thumbnail to launch **Recording Player** and play back the recording file.
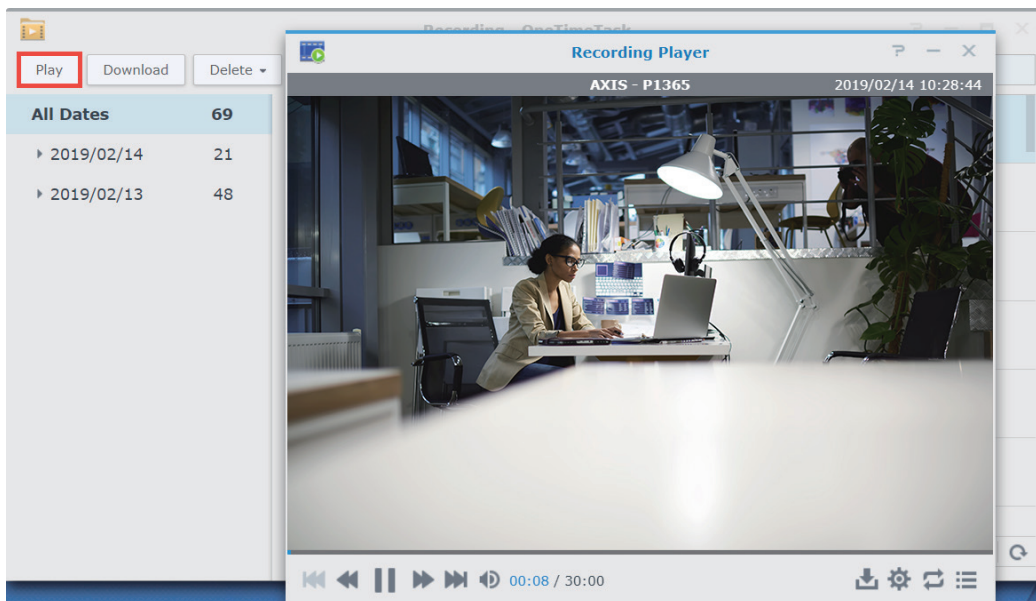
Click the **Timeline** application to play back multiple recordings according to a specific date and time.
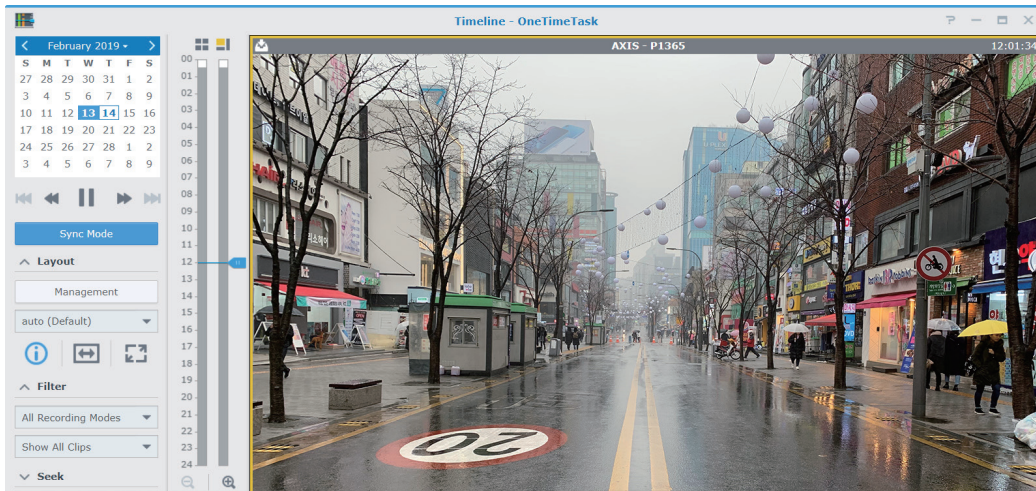
Operation Details

How to Choose a Suitable NAS Server

Choosing a suitable Archive Vault server to run archiving tasks depends on the scale of the tasks. You will need to take into consideration the bandwidth required to archive recordings on a daily basis, thereby choosing a server with the bandwidth capacity to handle traffic loads. For example, RS2416+ is equipped with 1-Gigabit LAN ports, while RS1817xs+ comes with dual 10GBase-T ports. You can also set up link aggregation to increase throughput.

Check if the Archive Vault server meets storage requirements by calculating your storage needs for archiving recordings based on settings such as the retention period and size limit for archive folders, and then make sure to choose an Archive Vault server that supports the right amount of hard drives. The number of hard drives is a factor related to the I/O speed, and may affect transfer performance.

Select Recordings to Archive

You can select recordings to archive based on time and recording type.

- **Select based on recording time**: You can archive recordings based on the archive range and the time of the recordings. When defining the archive range for one-time archiving tasks, you can specify the recording start and end time and use this as the criteria to archive recordings.

  For scheduled archiving tasks, you can specify the recording start time, and recordings after the specified start time will be regularly archived. To specify the recording time, select time units in increments of 30 minutes for seven days of the week in the time grid. Recordings will be archived based on the specified recording time.

- **Select based on recording type**: You can archive recordings based on the recording type, and choose whether to enable **Event Summary**. Only recordings under the selected recording modes will be archived. Recording modes include **Continuous Recording**, **Advanced Continuous**, **Motion Detection**, **Manual**, **Edge Storage**, **Action Rule**, **Customize 1**, and **Customize 2**.
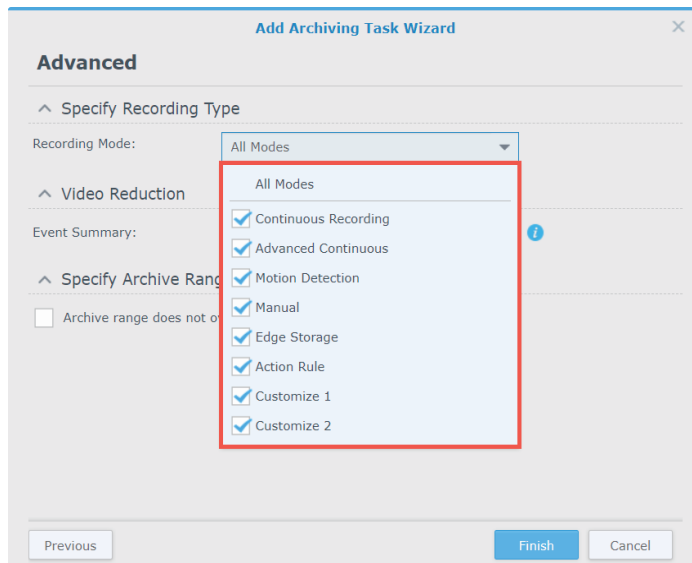
Archive Range does not overlap with the Source Server

Archive range does not overlap with the source server is an option designed particularly for scheduled archiving tasks. When ticking this option, recordings that are about to be rotated on the source server will be archived to the Archive Vault server to prevent storing overlapping recordings between the source sever and the archive server.

The archiving process will start one day prior to rotation to avoid network bandwidth problems, and to ensure there are no overlaps between the two servers. For example, if the start date and time of the oldest recording file on the source server is December 1, 3:00 PM, then the archive range for the overlapping day will be from Dec 1, 3:00 PM to Dec 2, 3:00 PM. If the start date and time of the oldest recording file changes over time to Dec 1, 4:00 PM, then the next archive range will extend to Dec 2, 4:00 PM.

Locked recordings on source servers are not affected by rotation and will also be archived if occurred within the time range.
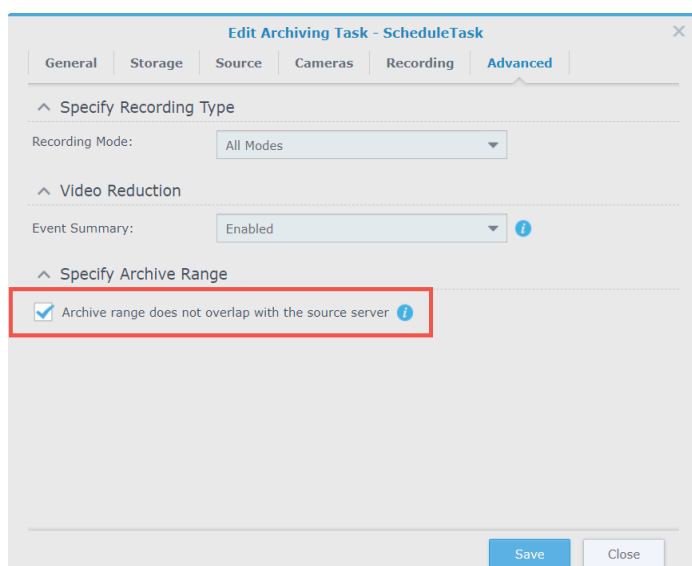
Resume Archiving Tasks

Archive Vault tracks the progress of archiving tasks. In the case of unexpected situations (e.g. network disconnection) that may cause archiving tasks to stop, tasks will be resumed from the point of interruption the next time the task is run, instead of starting over from the beginning. Archive Vault minimizes network bandwidth usage while allowing efficient resource utilization.

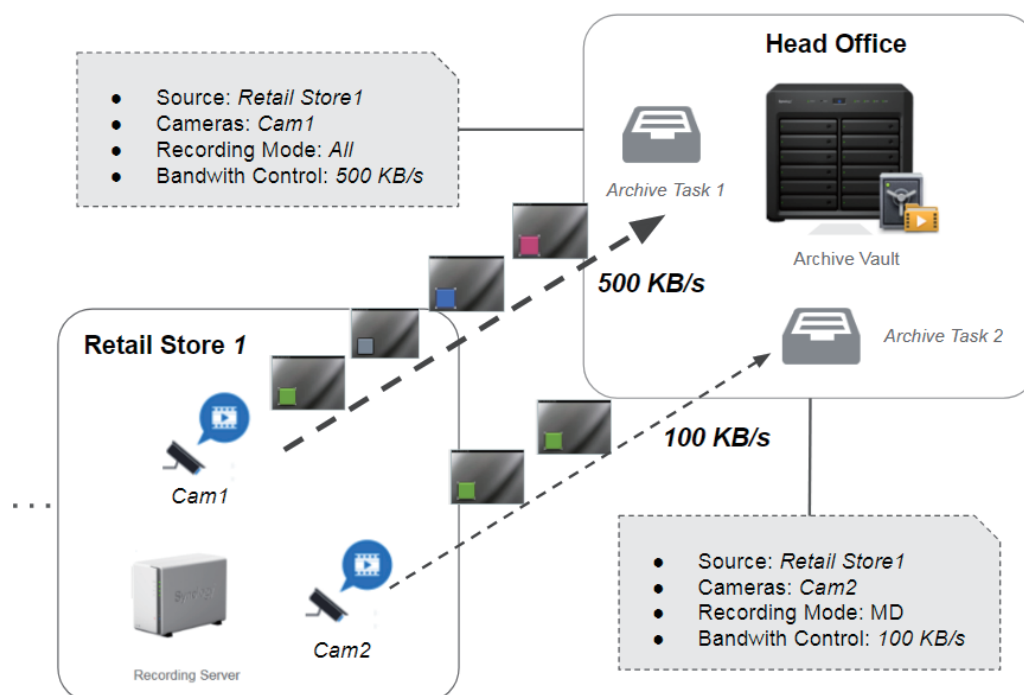# Archive Vault Setup Example

Archive Vault Setup Example

This example covers the basic setup and usage of Archive Vault, utilizing different archiving settings to perform archiving tasks under the condition that video streams from different cameras are of different importance.

In the usage scenario illustrated in the diagram above, a company's headquarters needs to archive recordings from its retail stores. A source recording server is installed in each store location, and deployed with 2 cameras (referred to here as Cam 1 and Cam 2). Cameras in each store location are of different importance (Cam 1 is of higher importance than Cam 2). The Archive Vault server is installed in the headquarters, and serves as a centralized storage server that stores recordings from each retail store. The following solution is based on the assumptions mentioned above.

In this example, Cam 1 captures and records activities of higher security sensitivity, therefore "Archive Task 1" is set up to archive all types of recordings from Cam 1 to the Archive Vault server. Cam 2 records activities of lower security sensitivity, therefore "Archive Task 2" is set up to archive only motion detection events from Cam 2 to the Archive Vault server.[1]

You can limit the bandwidth for different archiving tasks. In the diagram above, since Archive Task 1 archives recordings from a camera of higher importance, more recordings will be archived, thereby the bandwidth limit is set as 500 KB/s. Archive Task 2 archives recordings from a camera of lower importance, thereby the bandwidth limit is set as 100 KB/s. To handle heavier network bandwidth demand during store operating hours, you can set bandwidth limits according to a schedule. For example, restrict bandwidth speed from Monday to Friday, and set unlimited bandwidth on Saturdays and Sundays.[2]

Based on the importance of the recordings, it is expected that the right archiving settings will be applied to archive recordings from all cameras while avoiding excessive network bandwidth usage. You can create different archiving tasks for the same source recording server according to individual requirements by choosing to archive different recording modes and specify different bandwidth limits.

> **Note:**
> 1. For more details on archiving settings, please refer to the previous chapters.
> 2. For more information on bandwidth settings, please refer to the **Bandwidth Control Settings** section above.