
EVO

Studio Network Solutions

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1 | Introducing EVO

EVO is a shared storage workflow server for professional video and audio applications. This system provides a high-performance environment for media sharing with project and asset management among many users. EVO is built specifically for online, real-time use with apps like Adobe Premiere Pro, After Effects, DaVinci Resolve, Final Cut Pro, Avid Media Composer, Scratch, and Pro Tools.

The EVO suite — included with every new system — includes ShareBrowser, Nomad, and Slingshot. Editors around the world use these apps to power a modern, practical, on-premise and remote workflow solution. Unlimited licenses are included, so everyone on your media team can instantly work more effectively.

1.1 Physical layout

EVO has several form factors, and undergoes changes as hardware components evolve. As a result, the following photographs may not match your configuration exactly.





On the front, the 8 Bay and 16 Bay EVOs have drive bays arranged in four columns. For a 16 Bay EVO, each column will have four drives. These columns are referred to as “quads” and function as a unit in EVO. For an 8 Bay EVO, each column will have only two drives, but they are still referred to as quads in the EVO user interface. The expansion chassis looks the same from the front as the 16 Bay EVO base unit. There are four drive bays in the EVO Prodigy, which are referred to as a single quad.

The quads in the 8 Bay and 16 Bay EVOs are numbered from left to right as Quad-0 through Quad-3. If an expansion chassis is added, it houses Quad-4 through Quad-7, and this numbering scheme continues if additional chassis are added (to a 16 Bay EVO).

On the 16 Bay and 8 Bay models, Drive-0 is at the top, and Drive-1 is just below it. In a 16 Bay chassis, Drive-2 and Drive-3 are below Drive-1. Each drive has three LEDs on it. The green LED shows simply that there is a drive installed and that it is receiving power. Blue blinks to indicate the drive is seeing activity. There is also a red LED, which indicates that the controller is having a problem communicating with the drive. Not all types of disk failure will trigger this red LED, but if the LED lights up, there is some problem with that disk.

The back of your EVO will look somewhat different depending on which option cards you have ordered.



On the back of a 16 Bay EVO base unit, you will notice three hot-swappable power supplies on the left. A 16 Bay Nearline or expansion chassis will have two modules instead of three. An 8 Bay EVO may be configured with a single, non-modular power supply, or a power supply with two modules. During normal operation, all power supplies must be plugged in. If one of the modules on a redundant power supply should fail, the other module(s) will supply enough power to keep EVO operational. It is highly recommended to use an uninterruptible power supply (UPS) so that site-wide power fluctuations do not cause problems. See [APC UPS configuration](#) for more information.



The connectors on the back of your EVO may be arranged differently, but the ports should be physically and functionally the same. The USB ports may be used to connect a UPS battery backup and/or keyboard. The video output is not needed in normal operation, but may be helpful for troubleshooting or initial configuration. If present, the serial port is RS-232 using 8n1, 57600 baud, Xon/Xoff. EVO typically has two built-in Ethernet ports, numbered as shown. In addition

to normal data transfer, an Ethernet port may also be available for IPMI access. Like serial and video ports, IPMI is primarily useful for troubleshooting by SNS support or IT monitoring. A connected keyboard and display is typically sufficient if Ethernet is unavailable, in order to configure Ethernet access for administration.

If present, the square port labeled “A” (without a plug in its port) can be used to connect an expansion chassis using an SFF-8644 cable.

Note: If the EVO panel has an HDMI port, note that HDMI output may not be produced unless the display is connected before EVO is powered.

1.2 Disk controller

In the 8 Bay and 16 Bay EVO models, a RAID controller drives the internal disks in the EVO head, and a port on the back can be used to connect one or more expansion chassis.

Warning: Ensure the head unit is powered off before connecting or disconnecting an expansion chassis.

The EVO expansion chassis is built into a similar type of rackmount case as the 16 Bay EVO base unit, but without most of the ports on the back. Your first expansion chassis will connect to the EVO RAID controller using its middle (SAS Exp. In) port. Any additional expansion chassis will connect from the first expansion’s rightmost “SAS Exp. Out” port to the next chassis’ “SAS Exp. In” port, and this configuration continues as chassis are added.

Note: Care must be taken that the expansion chassis SAS connector cables are inserted correctly. Each end of the SAS cable has only one correct orientation for each port. Look at each port and the corresponding cable end to confirm its alignment, and ensure the cable locks in place.

Note: EVO expansion chassis do not have a functional power switch. The chassis should always be powered if the head unit is powered.

Warning: If you ever move the EVO system, it is important that these chassis be reconnected in the same configuration.

The 8 Bay EVO can support one additional expansion chassis (24 disks total), while the 16 Bay can support four additional expansion chassis (80 disks total). Consult with SNS before expanding past two chassis to ensure hardware is considered for optimal configuration.

2 | Contacting Studio Network Solutions

Your feedback is highly valued and appreciated! Please get in touch with us to share any questions, comments, or feature requests you may have. We'd love to hear from you!

2.1 Getting Support

Please visit our [Support page](#) for technical support contacts, our online case system, and up-to-date information regarding our products.

2.2 Everything Else

Please use our [Contact page](#) for all product and pricing info, upgrades and renewals, reseller and ordering info, and all other non-support questions.

You can also follow us on [Twitter](#), subscribe to our [newsletter](#), and follow our [Blog & Other News](#) page for news and announcements.

3 | Operational environment

Temperature: 40 to 72°F (5 to 22°C)

Humidity: 20-60%

Thermal:

16 Bay EVO: ~1297 BTU/hr

16 Bay EVO Nearline: ~785 BTU/h

8 Bay: ~785 BTU/hr

4 Bay Prodigy (1U): ~512 BTU/hr

4 Bay EVO Prodigy (Desktop): ~225-300 BTU/h

3.1 Rack requirements

We recommend allowing 1RU (rack unit) above and below each EVO system (base, or base + expansion chassis). Full-depth EVO chassis should be mounted on a standard 19" rack using the provided rack rails. Rear support is required. EVO's rack rails can be adjusted from 26 to 34 inches (66 to 86 centimeters) between front and rear supports. The operating environment must provide adequate ventilation so that heat buildup will not damage components. There should be a minimum of 3 inches allowed at the rear for cable clearance.

Detailed instructions for rack mount assembly can be found at <http://studionetworksolutions.zendesk.com/hc/en-us/articles/208147173-Assembling-EVO-rack-mount-kits>.

Note: Studio Network Solutions is only able to offer security of the EVO system software, not the physical device once it has been deployed. As such, we recommend that EVO only be stored in a secure location and put into the hands of a trusted administrator. For maximum security, we also advise against leaving a keyboard or any other extraneous device plugged into the EVO system.

3.1.1 16 Bay EVO (3U), EVO Nearline (3U), 8 Bay EVO (2U)

EIA-310 rack, 4-post with front and rear rails.

Included mounting rails:

0.625" pitch, round hole (square hole compatible). Inner-rail to inner-rail depth: 25.75" to 32.25" (65.4cm–81.9cm). Rear-rail mount can be flipped to fit a minimum depth of 18.5", with 7.25" of rail overhang.

3.1.2 8 Bay Live (4U)

EIA-310 rack, 4-post with front and rear rails using included mounting rails. Available 2-post mounting using only front rails.

Included mounting rails for 4-post racks:

4RU required. 0.625" pitch, round hole (square hole compatible). Inner-rail to inner-rail depth: 21" to 27.5" (53cm – 69.85cm). Rear-rail mount can be flipped to fit a minimum depth of 13.75", with 7.25" of rail overhang.

Optional mounting for 2-post racks:

6RU required. 0.625" pitch, round hole (square hole compatible). Chassis depth 21" (18" chassis plus 3" cable clearance).

3.1.3 Prodigy (1U)

EIA-310 rack, 4-post with front and rear rails.

Included mounting rails:

0.625" pitch, round hole (square hole compatible). Inner-rail to inner-rail depth: 25.75" to 32.25" (65.4cm – 81.9cm). Rear-rail mount can be flipped to fit a minimum depth of 18.5", with 7.25" of rail overhang.

3.2 Power Requirements

If you have one or more expansion chassis, please plan accordingly.

3.2.1 16 Bay EVO main chassis

Power Requirement: 100-240 VAC 50-60Hz auto switching

Power Supply: 3 x 650 watts (2+1 redundant: maximum 1300 watts at a time)

Maximum Load: 20-10A

3.2.2 16 Bay EVO expansion chassis

Power Requirement: 100-240 VAC 50-60Hz auto switching

Power Supply: 2 x 720 watts (1+1 redundant: maximum 720 watts at a time)

Maximum Load: 10-5A

3.2.3 EVO Nearline

Power Requirement: 100-240VAC 47-63Hz auto switching

Power Supply: 2 x 860 watts (1+1 redundant: maximum 860 watts at a time)

Maximum Load: 13-6.5A

3.2.4 8 Bay EVO

Power Requirement: 100-240 VAC auto switching

Power Supply: 2 x 650 watts (1+1 redundant: maximum 650 watts at a time)

Maximum Load: 9-4A

3.2.5 EVO Prodigy (1U)

Power Requirement: 100-240 VAC auto switching

Power Supply: 250 watts, non-redundant

3.2.6 EVO Prodigy (Desktop)

Power Requirements: 115-230VAC 60-50Hz auto switching

Power Supply: 300 watts, non-redundant

4 | Configuration and Setup

Many considerations go into setting up an EVO, but the most important thing is to plan your configuration. At its heart, EVO provides a highly flexible environment for sharing storage with multiple users. Take your workflow into consideration and think through the requirements that your storage system will need.

Note: Keep in mind that we offer assisted install services. [Contact us](#) at any time to arrange one of these services.

4.1 Planning the Configuration

Does your workflow require every user to have a “personal” logical disk that they use to store all of their projects? Does your workflow have users pulling files from one logical disk, working on them, and saving the output to another? Does it contain a centralized repository that everyone uses to pull source media? Do some users require higher-speed access than others? Are there different applications in use that put different demands on storage?

All of these questions should be thought through before starting the configuration of Disk Pools, Logical Disks, and the options for sharing and connecting them with other networked devices.

4.2 Disk size and type

EVO uses enterprise-class SSD or HDD drives. At the time of release, 4TB or 6TB HDDs are the most common choice, but 8TB, 10TB, and 12TB disks are also available. EVO rack-mounted systems can also use SAS disks.

Note: Disks are provided by SNS; [contact us](#) if interested in adding/upgrading storage capacity.

4.3 Disk Pool Considerations

EVO ships with and is frequently deployed with all disks comprising a single pool, which is ideal for most standard workflows. If planning an alternative deployment, it’s worth considering the following things:

Bandwidth Protection All physical disks in a drive pool are accessed when any logical disk in that pool is accessed. The bandwidth of the drives in one pool is protected from the bandwidth of drives in another. If there are different applications that may use the disks differently, or if different users may be accessing the same disks at the same time, overall performance may be gained by dividing the storage into more, smaller pools with discrete resources.

Spindle Count The overall bandwidth of a disk pool is a function of how many drives are in that pool. Configuring EVO with fewer pools, and more drives in each pool, increases the potential bandwidth for any given logical disk in

the pool. Applications with very high bandwidth requirements, such as uncompressed video, may benefit from fewer, larger pools.

Logical Disk Size No logical disk can be larger than the pool that contains it. If you need a few very large logical disks for your workflow, you will need fewer, larger pools.

Expansion Storage You may get more capability for concurrent work by adding one (or more, depending on EVO model) expansion chassis. The performance is dependent on current and future system configuration, and the kind of work you do. For example, if your performance bottleneck is not the number of disks in your current EVO, then performance will not be increased simply by adding more disks.

A typical configuration is a single pool per chassis (4-disk pool in a Prodigy, 8-disk pool in an 8 Bay, 16-disk pool in 16 Bay or Nearline, 16-disk pool in each expansion chassis).

Note: A pool may consist of up to 32 disks.

Warning: If a pool spans more than one chassis, the integrity of the pool depends on the external cable connection and the independent power supply for each unit. It's strongly recommended in this case that each chassis share a common power source to ensure all member disks are online at the same time.

4.4 Logical Disk Considerations

EVO supports different combinations of RAID levels and logical disk sizes. Your configuration may benefit from several, smaller sized logical disks or fewer, larger ones. No one method is correct for all users.

Here are things to consider when planning your logical disk configuration:

Disk Pool Placement - As described in *Disk Pool Considerations*, the placement of logical disks within a disk pool can change that logical disk's performance, its available bandwidth, and its potential size. If your needs are best met with multiple drive pools, consider which pools are the best fit for the required logical disks.

RAID levels - EVO supports logical disks that use a virtualized form of RAID aggregation and protection. The system is tuned for performance at any RAID level, so preconceptions about performance differences between different RAID types may not apply to EVO RAID logical disks.

Note: The main trade-off with the available RAID levels is the balance between data protection and usable space. RAID protection should never be considered as an alternative to a backup plan. A RAID may protect data against one or more disk drive failures but not other situations, such as a user's accidental deletion of important files.

RAID 5 - This is the default RAID level for 8 Bay EVO and EVO Prodigy. Data is written across all disks in the pool, including enough redundancy to withstand the loss of one physical disk. If a physical disk fails, the array operates in a degraded mode until it's been replaced and parity is restored.

The space required for the parity data equals the capacity of one physical disk. An 8 bay with a single RAID 5 logical disk affords the usable capacity of seven physical disks.

RAID 6 - This is the default RAID expectation for 16 Bay (and larger) systems. Twice the parity is distributed across all disks in the pool, similar to RAID 5. The benefit of this extra parity information is that any two disks in a pool can fail while still allowing access to the logical disk(s). The extra parity calculation adds writes compared to RAID 5, while reads are unaffected or improved according to the number of disks available. A RAID 6 deployment using a single pool also allows for a single namespace for all its available content.

The space required for the parity data equals the capacity of two physical disks. A 16-disk RAID 6 affords the usable capacity of 14 disks.

Warning: Although EVO provides many features for reliability and redundancy, including RAID, it is imperative that you maintain frequent backups of all your critical data on at least one separate device. The redundancy built into any one system is insufficient to prevent against all potential disasters. A comprehensive backup/restore plan, well-followed procedures, and secondary backups preserved in an offsite location, are all critical to business continuity for any company with important data assets!

4.5 Logical Disk Size

EVO logical disks must be at least one gigabyte, and may be as big as your drive pool. Consider your workflow and the overall amount of usable space in your drive pool(s) when choosing logical disk size. A workflow that requires each user to have their own space to read from and write to may benefit from more, smaller logical disks. Large shared logical disks can be a better fit for a workflow where multiple users are working with the same source content.

4.6 How Many Bytes in a Gigabyte?

There is some disagreement in the industry over the exact definition of words like terabyte, gigabyte, megabyte, and kilobyte. This confusion stems from the early computer industry. The use of binary in computer systems leads to a preference for numbers that are powers of two. Two to the tenth power is 1024.

Humans think in base-ten, so the prefix kilo- (meaning thousand) was adopted to refer to this value, since it was considered close enough to one thousand.

As capacities increased, the difference has compounded. Using powers of two, one gigabyte is 1073741824 bytes. In an effort to resolve the disparity, the IEC created terms like kibibyte, mebibyte, gibibyte and tebibyte, where the second part of the prefix name is replaced by “bi” to signify that they are binary prefixes rather than decimal (base-10) prefixes.

Disk drive manufacturers use metric prefixes for marketing purposes (a 1 “terabyte” drive need only contain 1000000000000 bytes instead of 1099511627776, a 10% difference).

As a result of this, a “1TB” drive actually contains 931.32 Gigabytes as reported by most operating systems.

Note: EVO uses binary reporting for accuracy, so slightly differing disk statistics may be expected when comparing server and workstation volume capacity reports.

4.7 Connectivity Considerations

EVO supports copper and optical Ethernet, and larger chassis can accommodate many client connections without the need for a physical switch. When a switch is available, interfaces can also be aggregated so the switch can efficiently manage traffic distribution between clients.

If greater-than-1GbE connections are used, overall throughput may be increased by using jumbo frames. A greater MTU (maximum transmission unit) value provides efficiency for transmission of larger (e.g. video) files, since fewer, larger frames are transmitted.

As workstations generally do, EVO's network adapters default to the standard frame size (1500 MTU) and if changed to jumbo (9000 MTU), then *all ports in the connection path must match* (EVO, switch, workstation). Any port can use standard frame sizes, while jumbo frames are out of spec for GbE.

While jumbo frames are often beneficial for greater-than-1GbE connections in a local environment, they should not be used for a gateway (internet) connection. Since all ports in the connection path would need to support jumbo frames, higher MTU should never be set for a port accessed by a remote user over the internet (VPN).

Gigabit Ethernet (GbE) - Most client workstations will likely offer one or more built in 1 Gbps Ethernet ports, which is sufficient for many workflows. In other environments, clients often connect their workstations directly via 10GbE or higher, while a GbE connection is reserved for LAN use, network time synchronization, email notifications, and so on.

10 gigabit Ethernet (10GbE) - A 10 Gbps Ethernet connection can be used to connect workstations directly, or in conjunction with the proper Ethernet switch to offer connectivity to multiple clients, or as an aggregate connection for multiple clients. This may be copper or optical Ethernet.

25/50 gigabit Ethernet (25GbE, 50GbE) - These adapters are optical-only, use specific cables/transceivers, and may require additional switch configuration.

Warning: Whether frames are set to standard or jumbo is not as important as ensuring the frame size is supported by sender, receiver, and *every device* between the two. This is an especially important consideration for remote connections.

4.8 Future Growth

EVO is designed to be modular in order to fit any situation, but your requirements may change over time. Perhaps some more editors have joined your team, or perhaps you land a big project that will require more storage than your EVO currently has. As long as your EVO has more available PCIe slots, you can add another Ethernet card to add more client ports.

Similarly, as long as your EVO has empty drive bays, you can purchase an additional quad of disks to add to the system. If your 8 Bay or 16 Bay EVO has used all of its internal drive bays, it is possible to add one or more expansion chassis that will each provide 16 more drive bays.

It is also possible to expand the size of existing logical disks by adding one or more disks to an existing pool. This type of in-place grow operation has caveats to consider (the RAID level is unchanged, for example), so consult with your reseller and/or SNS to ensure understanding of the implications for future storage expansion in your case.

EVO is a flexible and powerful system, and there is no single configuration that is right for all EVO users. Studio Network Solutions Product Specialists and our informed resellers are available to help with any and all planning. After careful consideration, you should have a plan for the following items:

- Disk Pools - How many pools, and number of physical disks in each pool
- Logical Disk(s) - How many, the size of each, the RAID level of each, and which disk pool(s) will be used
- Connectivity - Which users will connect via Ethernet? Will multiple zones or VLANs be used to manage network bandwidth?

Now that you have a plan, let's proceed with the actual configuration tasks.

5 | EVO Administration

EVO offers an elegant, intuitive web-based interface for configuration, monitoring, and more. Once you have installed EVO into its physical location and made the necessary connections, use a web browser to begin familiarizing yourself with EVO's Administrative interface.

5.1 Console

EVO is primarily managed via a web-based interface, and also presents a console menu that may be helpful for initial configuration or if the web interface is otherwise inaccessible.

```
EVO: Administrative console
=====
[ 0] Login
[ 1] Configure the network interfaces
[ 2] Reset admin credentials
[ 3] System Reboot
[ 4] System Shutdown
[ 5] Restart SSH
[ 6] Restore backup
[ 7] Start iptraf-ng utility
[ 8] Reset firewall rules
[ 9] Disable UI port restriction (currently disabled)
[10] Revoke all long-lived tokens
=====
Select one of the items above:
```

Once fully booted, a menu will be presented, from which it's possible to confirm/adjust the network interface settings. EVO has default IP addresses assigned, so a display should not normally be required.

Use the arrow keys to navigate and enter key to select. Enter the number to make a selection:

[0] **Login** - Reserved for tech access

[1] **Configure the network interfaces** - View/modify the network interfaces

[2] **Reset admin credentials** - Returns *web administration login* to default ("admin", "adminpw111")

- [3] **System Reboot** - Initiates graceful EVO shutdown/restart
- [4] **System Shutdown** - Initiates graceful EVO shutdown
- [5] **Restart SSH** - Reserved for SNS access
- [6] **Restore backup** - View/restore from available EVO configuration backups as described in [Recover configuration](#)
- [7] **Start iptraf-ng utility** - Start the iptraf-ng IP Network Statistics Utility
- [8] **Reset firewall rules** - Remove all rules defined in the [Firewall](#) section
- [9] **Disable UI port restriction** - Remove the [Restrict EVO UI access](#) rule assigning administrative access to a specific Ethernet port
- [10] **Revoke all long-lived tokens** - Removes authentication tokens used for federated EVO configurations
- [11] **Reorder network interfaces** - Allows for adjustment of Ethernet port enumeration

Note: If configuring a port as DHCP server, the address range is specified by entering the starting IP address and ending IP address, separated by a comma.

5.2 IPMI

Most EVO systems also provide an IPMI network interface, accessible at **10.10.10.88**. Depending on form factor, the login credentials are user **admin**, and password **admin** or **adminpw111**. With a keyboard and display connected, the IPMI settings can be confirmed or adjusted by entering the motherboard configuration menu at startup.

5.3 Connecting to the Administrative Interface

Default IP address - The default IP address for EVO port eth0 is **192.168.1.25** with a subnet mask of **255.255.255.0**. Before attaching any EVO system to an existing network, make sure that this address is not already in use and that the subnet information is compatible with the rest of the network. If network configuration changes need to be made to the EVO system, they can be made at the [Network](#) page using a computer that is only connected to EVO and not to the existing local area network, or with a USB-connected keyboard and VGA/DisplayPort/HDMI display. The remaining documentation will assume that you will access the web-based interface using a computer that is directly attached to the primary Ethernet port on the EVO system.

Connecting to the primary Ethernet Interface - For the initial setup and configuration, connect a computer running a supported browser to the “eth0” or “eth1” interface on EVO. This computer will be referred to as the “Admin Workstation”.

EVO’s eth0 port uses a default address of 192.168.1.25.

EVO’s eth1 port uses a default role of DHCP Client, so it can be connected to a network to automatically receive an IP address.

Note: If a DHCP address is not automatically received, disconnecting and reconnecting the Ethernet cable will initiate a new DHCP request.

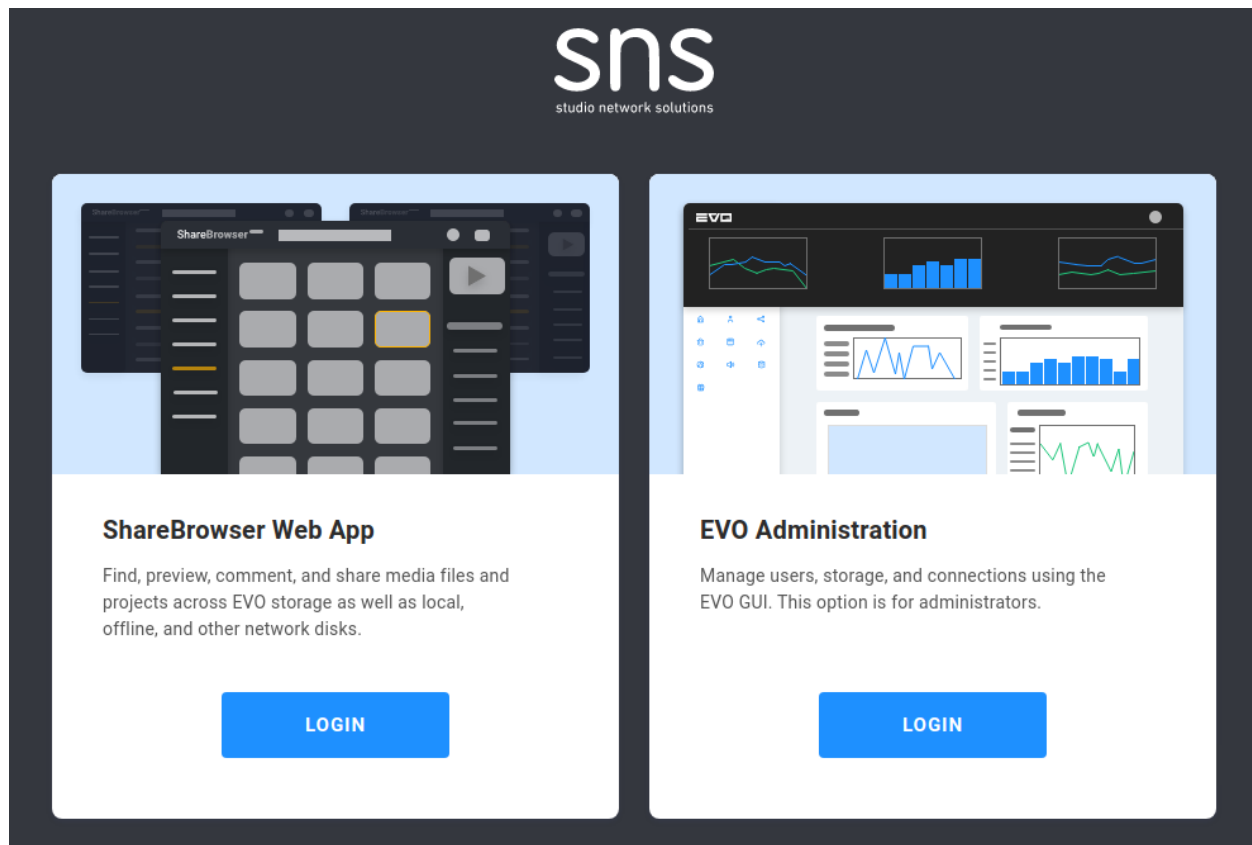
If connecting to eth0, set the IP address of the Admin Workstation to a matching subnet (example: 192.168.1.42) and the subnet mask to 255.255.255.0 (other Admin Workstation settings such as Router, Default Gateway, or DNS Server are unnecessary).

If connecting to eth1, check the console output from EVO menu item 1 “Configure the network interfaces”, or check the DHCP server (generally the router) to find the address assigned to EVO, and then navigate to it from a workstation on your LAN.

Connecting to the web-based Interface

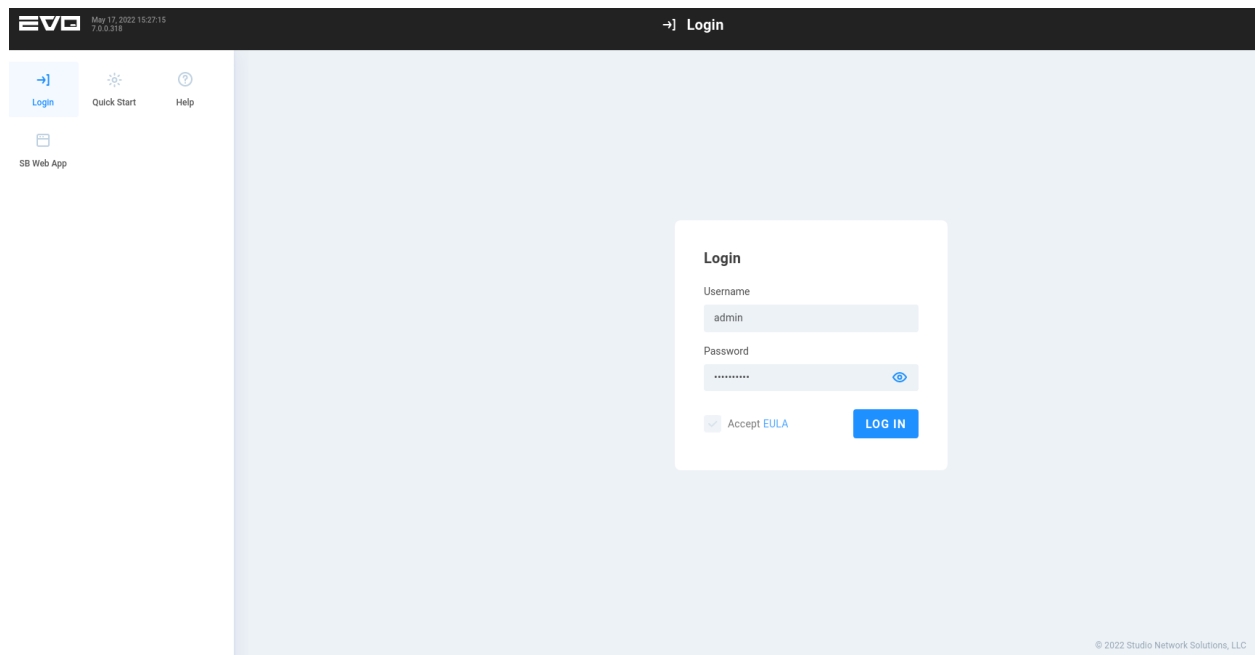
To connect to EVO’s web-based interface, navigate to <http://192.168.1.25> (or the DHCP-assigned address for eth1) with your web browser.

Note: If you’ve just powered up EVO, you may have to wait several minutes for the system to initialize before you can log in. Upon login, you may see EVO’s current status in its boot sequence being displayed.

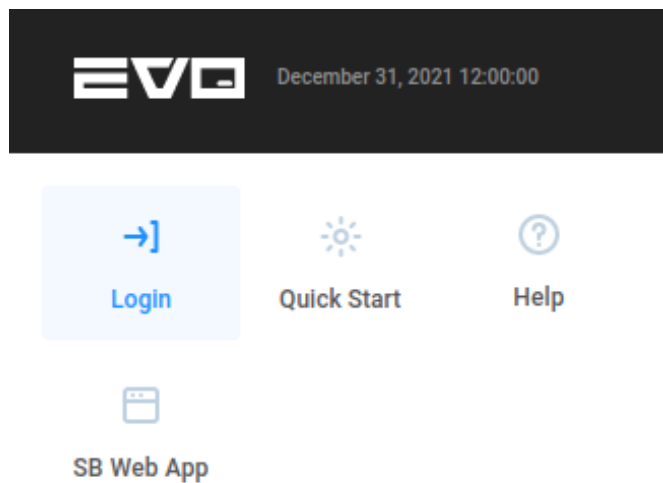


The landing page allows for ShareBrowser Web App or EVO Administration login. See the ShareBrowser guide for more information about ShareBrowser Web App: <https://studio-network-solutions-sharebrowser-docs.readthedocs-hosted.com/en/latest/>

Click **LOG IN** on the EVO Administration panel to access EVO’s administrative interface.



You will be greeted with EVO's Login Page. In the top left corner, you can see the current EVO version and the EVO system time, and some helpful links are available in the menu prior to logging in.

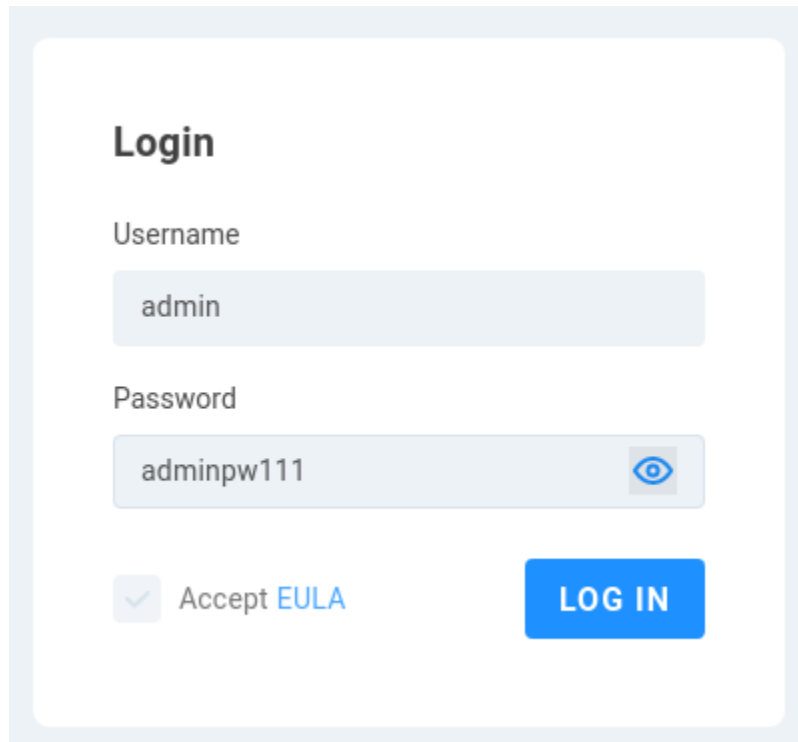


To log in to EVO, use the following default credentials:

Default User Name: **admin**

Default Password: **adminpw111**

Check the box to confirm EULA acceptance (after clicking and reviewing it), and then click **LOG IN**.



The screenshot shows a web interface for logging into the EVO system. It features a light blue header with the word "Login" in bold. Below the header, there are two input fields: "Username" with the text "admin" and "Password" with the text "adminpw111". To the right of the password field is a small icon of an eye. Below the password field, there is a checkbox with a checkmark and the text "Accept EULA". To the right of the checkbox is a blue button with the text "LOG IN".

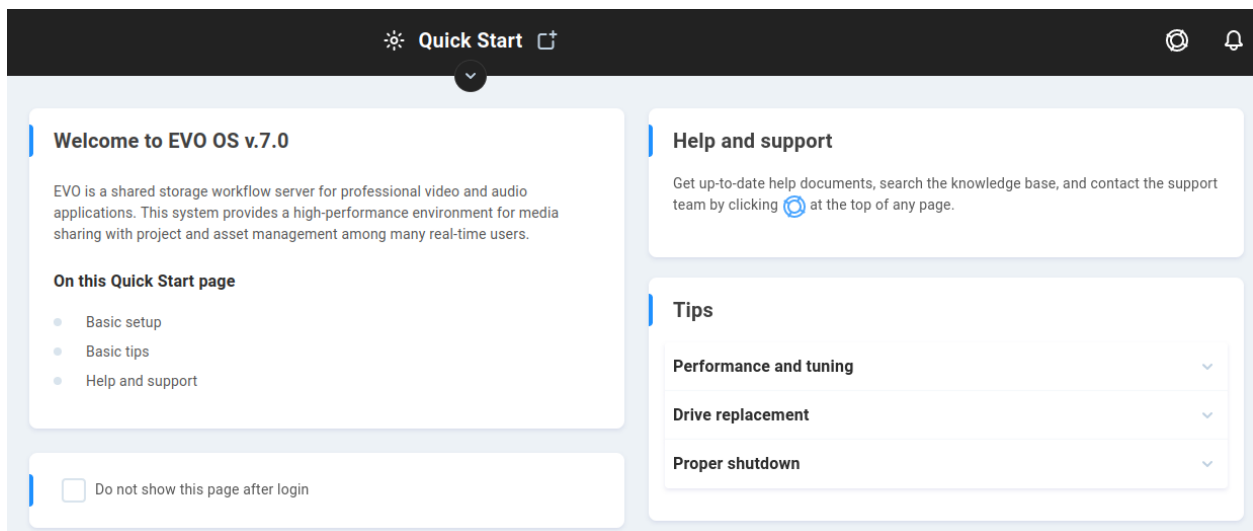
Note: For security reasons, it's a good idea to change the web interface administrative user name and password at System > Admin Settings > Web-access credentials.

6 | Administrative Interface Basics

Once logged in as the administrator, EVO's *Quick Start* page is presented, which offers a brief introduction to the EVO system.

Note: Clicking the three dots (...) symbol on most displayed information cards provides the option to add (or remove) the item from the Home page, allowing the interface to be customized with the views most important to you.

6.1 Quick Start



This page will load by default after logging in as the admin user, and provides important information that can be especially helpful when first getting started with EVO.

6.1.1 Welcome to EVO OS

This section displays the EVO operating system version number, a brief introduction, and lists the page contents.

6.1.2 Help and support

Get up-to-date help documents, search the knowledge base, and contact the support team by clicking the raft symbol at the top of any page. See [Support](#) for more information.

6.1.3 Tips

This section offers some important things to consider for correct deployment.

Performance and tuning - EVO is carefully preset right out-of-the-box to provide the best overall balanced performance for multi-user media production environments.

EVO's management interface gives you powerful options to configure the system, and the default settings will provide excellent performance, especially for professional video editing applications. Except in rare cases, EVO's performance settings will be perfect for most multi-user media production situations, and server-side adjustments will not be necessary.

EVO is a shared storage system, thus, it is tuned to balance a workload generated by many users concurrently demanding system resources. This is quite different than a single-user storage device such as a USB-attached RAID, wherein all resources can be safely given to one system without affecting other users. Keep in mind that if you adjust your system in a way that enables unnecessarily high throughput capabilities for every workstation all the time, then you may be inadvertently destabilizing your shared storage system's ability to balance the demands of multiple users.

If you are not seeing expected throughput at a workstation, the cause is most commonly found to be external to EVO. Bypassing your switch and connecting the affected workstation directly to EVO is a very good first performance troubleshooting step. Other typical causes of underperformance are bad network cables, network adapter, switch, or workstation misconfiguration. Refer to these articles in the EVO Knowledge Base for recommendations, troubleshooting, and expected throughput.

Drive replacement - Follow the instructions on the Replace disk page if you need to replace a failed drive. It is always recommended that you replace a failed drive with a brand new disk.


Proper shutdown - It is important that EVO be shutdown correctly. It should be shutdown from the System page, by an APC UPS, or by tapping the power button on the front panel. The disk lights inside EVO will begin to slowly blink in a waterfall pattern (8 and 16 bay systems only) within a few seconds to indicate that the system is shutting down.

It is also possible to do a forced shutdown by pressing the front panel power button for several seconds, but this should only be done if absolutely necessary.

Note: The described LED waterfall pattern on an expansion chassis may not match the head unit in every situation. If lights persist and it's confirmed in the interface that disks are healthy, a reboot should reset the expansion chassis LED controller.

6.1.4 The basics of setup

The basics of setup

This guide outlines the sequence of a complete, basic EVO installation. Comprehensive manuals on setup, features, use, and maintenance can be found in the Help documents section located by clicking  at the top of any page.

If you're doing a self-install of a new EVO, follow the steps on this page, review the online ['Getting Started' guide](#) (login required), and use the Help documents to assist you along the way.

Phone-assisted installation and training services

EVO is designed for straightforward setup. However, a whole deployment “from the ground-up” can include racking, storage configuration, network setup, AD/LDAP integration, client-side OS and/or software configuration, workflow strategies, backup planning, and other concepts that may be unfamiliar to some users.

If you purchased or would like to purchase guided installation assistance and/or training, please go here for [remote installation assistance](#) or here for [remote training](#) services. (Due to the one-on-one dedicated nature of these services they are outside the scope of normal technical support and are covered by our workflow team.) During your scheduled appointment time, you will be in direct contact with an engineer who will provide personalized guidance by phone, email, and remote-assistance software to help with setup or training for you and your team.

This guide outlines the sequence of a complete, basic EVO installation. Comprehensive manuals on setup, features, use, and maintenance can be found in the Help documents section located by clicking the Support raft icon at the top of any page.

If you're doing a self-install of a new EVO, follow the steps on this page, review the online ‘Getting Started’ guide (login required), and use the Help documents to assist you along the way.

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1 Connect to the internet, register this EVO

A workstation connected to the internet is recommended so that you can access the Help documents, Knowledge Base, and other resources. [Online Registration](#) of this EVO is recommended.

2 Connect EVO to a backup power source

To help protect your EVO and its data, connect it to an uninterruptible power supply. It is strongly recommended to use an APC Smart-UPS model that supports USB monitoring and provides sufficient runtime for your requirements so that EVO can be gracefully shut down in the event of primary power loss.


(See [recommendations for UPS sizing](#) for more details.)

APC UPS configuration

UPS not found. To enable UPS monitoring and services, verify that one supported APC device is connected to a USB port on EVO.

Automated EVO shutdown when UPS status is critical ● Disabled

Critical UPS battery charge level 75%

 [Configure UPS monitoring now >](#)

1. **Connect to the internet, register this EVO** - A workstation connected to the internet is recommended so that you can access the Help documents, Knowledge Base, and other resources. [Online Registration](#) of this EVO is recommended.
2. **Connect EVO to a backup power source** - To help protect your EVO and its data, connect it to an uninterruptible power supply. It is strongly recommended to use an APC Smart-UPS model that supports USB monitoring and provides sufficient runtime for your requirements so that EVO can be gracefully shut down in the event of primary power loss. See recommendations for UPS sizing for more details: <https://studionetworksolutions.zendesk.com/hc/en-us/articles/206126375>

3 Connect EVO to your network

You can manually assign a static IP address, or your network's DHCP service may provide one automatically. You should also set the gateway IP address (this is usually the same as your router's address), which is required for internet-based services such as Network Time Protocol (NTP), email alert notifications, cloud backup, etc.

Configure these settings on the [Network](#) page.

4 Set EVO's clock/time zone, and sync your workstations

Confirm that the date, time, and time zone are set correctly. Use Network Time Protocol to keep this system's clock synchronized automatically. To use NTP for time sync, enter your DNS address and the address of a time server (if different from defaults).

DNS

Primary	8.8.8.8
Secondary	8.8.4.4

Time settings

Time zone	UTC
Current time	December 22, 2021 22:54:33
Set automatically	● Enabled
Time Source	pool.ntp.org
Serve NTP	● Disabled

3. **Connect EVO to your network** - You can manually assign a static IP address, or your network's DHCP service may provide one automatically. You should also set the gateway IP address (this is usually the same as your router's address), which is required for internet-based services such as Network Time Protocol (NTP), email alert notifications, cloud backup, etc. Configure these settings on the Network page.
4. **Set EVO's clock/time zone, and sync your workstations** - Confirm that the date, time, and time zone are set correctly. Use Network Time Protocol to keep this system's clock synchronized automatically. To use NTP for time sync, enter your DNS address and the address of a time server (if different from defaults).

5 Configure email notifications & alerts

EVO can be remotely monitored by several methods, including email, SNMP, and audio alerts. Enable email notifications so that your team can be alerted to events such as UPS shutdown, disk full, disk failure, etc.

Configure more alert events and settings on the [Alerts](#) page.

E-mail configuration

SMTP user name

SMTP user password *****

SMTP server

SSL ● Disabled

From

Recipient list

6 Create pools, logical disks, and shares

EVO's internal storage is arranged such that physical disks are first grouped into one or more pools, then logical disks are built within pools, and finally, shares are created within logical disks. EVO ships with at least one pool created by default. Within that pool is a small logical disk named "system," which includes two shares named "sys-management" and "sys-reserved." These are necessary for correct system operation.

Start by [creating a new pool](#) and selecting which physical disks it will own. (If you find that all disks are already in a pool, then you can skip this step). Using the same page, you can then build a RAID logical disk inside the pool.

Finally, [create a new share](#) within your new logical disk.

5. **Configure email notifications & alerts** - EVO can be remotely monitored by several methods including email, SNMP, and audio alerts. Enable email notifications so that your team can be alerted to events such as UPS shutdown, disk full, disk failure, etc.
6. **Create users/groups and assign permissions** - Access credentials (username + password) are used to control permissions to the shares, files, and other data stored on this system. You can set up and manage "local" users/groups within your EVO system, or you can configure EVO to use your existing directory server (e.g. Active Directory).

7 Create users/groups and assign permissions

Access credentials (username + password) are used to control permissions to the shares, files, and other data stored on this system. You can set up and manage "local" users/groups within your EVO system, or you can configure EVO to use your existing directory server (e.g. Active Directory).

Manage users, groups, and permissions on the [Users](#) page.

8 Enable preview proxies for ShareBrowser

Your EVO includes ShareBrowser, our popular and easy-to-use MAM that enables your team to search, tag, preview, and organize media files and assets.

For best results, [enable ShareBrowser preview proxies](#) for each desired share, so that lightweight versions of your media assets can be displayed to your users within ShareBrowser. (In addition to these preview proxies, you may also choose to have EVO optionally create edit-ready ProRes proxies.) These automatic transcoding functions are provided by EVO's Slingshot automations engine, and they can be started/stopped on a schedule from within the [Schedule](#) section.

ShareBrowser can be accessed by a [web browser](#) and by an installable application. In the bottom corner of ShareBrowser's web-based login page, you will also find a link to the installable ShareBrowser client.

7. **Create pools, logical disks, and shares** - EVO's internal storage is arranged such that physical disks are first grouped into one or more pools, then logical disks are built within pools, and finally, shares are created within logical disks. EVO ships with at least one pool created by default. Within that pool is a small logical disk named "system," which includes two shares named "sys-management" and "sys-reserved." These are necessary for correct system operation. Start by creating a new pool and selecting which physical disks it will own. (If you find that all disks are already in a pool, then you can skip this step). Using the same page, you can then build a RAID logical disk inside the pool. Finally, create a new share within your new logical disk. Manage users, groups, and permissions on the Users page. Configure more alert events and settings on the Alerts page.
8. **Enable preview proxies for ShareBrowser** - Your EVO includes ShareBrowser, our popular and easy-to-use MAM that enables your team to search, tag, preview, and organize media files and assets. For best results, enable ShareBrowser preview proxies for each desired share, so that lightweight versions of your media assets can be displayed to your users within ShareBrowser. In addition to these preview proxies, you may also choose to have EVO optionally create edit-ready ProRes proxies. These automatic transcoding functions are provided by EVO's Slingshot automations engine, and they can be started/stopped on a schedule from within the Schedule section. ShareBrowser can be accessed by a web browser and by an installable application. In the bottom corner of ShareBrowser's web-based login page, you will also find a link to the installable ShareBrowser client.

9 Configure backups


Although RAID can offer some protection against data loss due to disk failure, RAID is not a backup strategy. All critical data contained on any storage device, including this one, should be frequently backed up to at least one other device, and a set of your data should also be securely maintained at a separate physical location.

You should back up all critical data on any shares, including the sys-management share (this share is included by default and contains copies of system databases).

You may use any backup software capable of mounting and backing up data on SMB shares. You may prefer to use EVO's included Slingshot features, which help you automatically replicate your important data to other on-site and cloud systems.

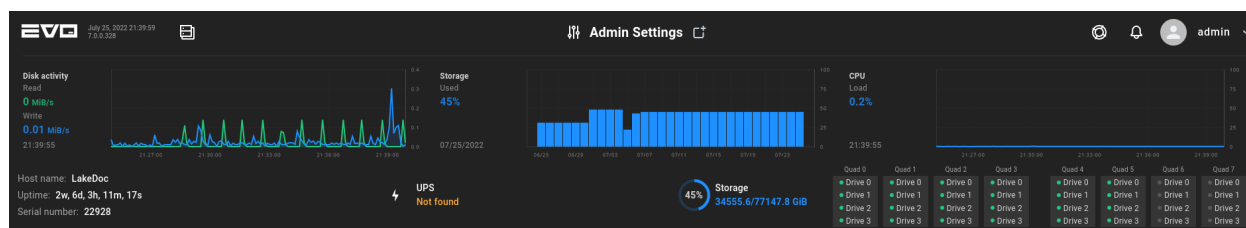
Configure replication jobs on the [Slingshot](#) page.

10 Say hello to our support team

We want you to love your EVO! If you need help, or just want to say hello, you can contact our support team by clicking  at the top of any page.

9. **Configure backups** - Although RAID can offer some protection against data loss due to disk failure, RAID is not a backup strategy. All critical data contained on any storage device, including this one, should be frequently backed up to at least one other device, and a set of your data should also be securely maintained at a separate physical location. You should back up all critical data on any shares, including the sys-management share (this share is included by default and contains copies of system databases). You may use any backup software capable of mounting and backing up data on SMB shares. You may prefer to use EVO's included Slingshot features, which help you automatically replicate your important data to other on-site and cloud systems. Configure replication jobs on the Slingshot page.
10. **Say hello to our support team** - We want you to love your EVO! If you need help, or just want to say hello, you can contact our support team by clicking the Support raft icon at the top of any page.

6.2 Statistics



The page header provides a collapsible display of a selection of system statistics for quick reference.

Disk activity displays latest Read and Write values, as well as graphical rolling history.

Storage shows the latest filesystem status by percent used, with rolling history.

CPU shows latest load value and recent history.

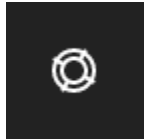
Host name displays the EVO host name configured at *Network service advertising*.

Uptime shows time since EVO was booted in day/hour/minute/second format.

Serial number - Each EVO has a Studio Network Solutions sticker at the back of the chassis, which may be associated in this field at build time or manually added at the *Push diagnostics* card.

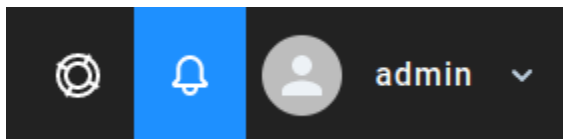
6.3 Support -

Click the life raft symbol to bring up the *Support page*.



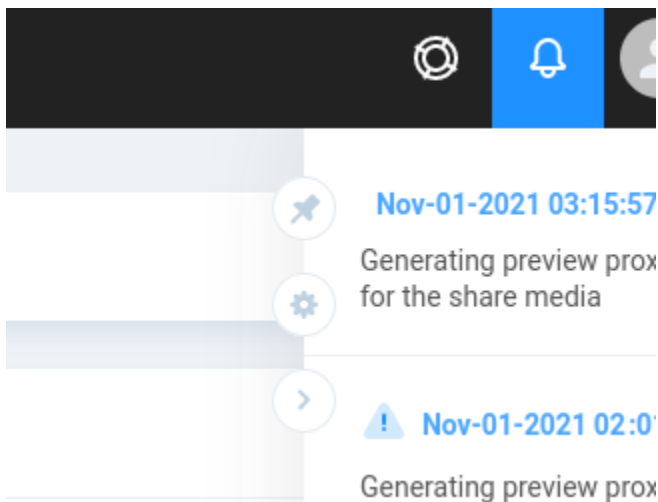
See *Support*

6.4 Notifications (bell icon)



Click the bell icon to expand the Notifications sidebar, which provides differing levels of messages in the web interface.

When hovering over the menu, three icons will appear (pin, gear, chevron).



Click the **pin** to keep the Notifications menu open, again to unpin, or click the **chevron** to unpin/close the sidebar menu.

Click the **gear** in the sidebar to expose its options:

Notification settings

Show info messages

Show warning messages

Show error messages

CANCEL

SAVE

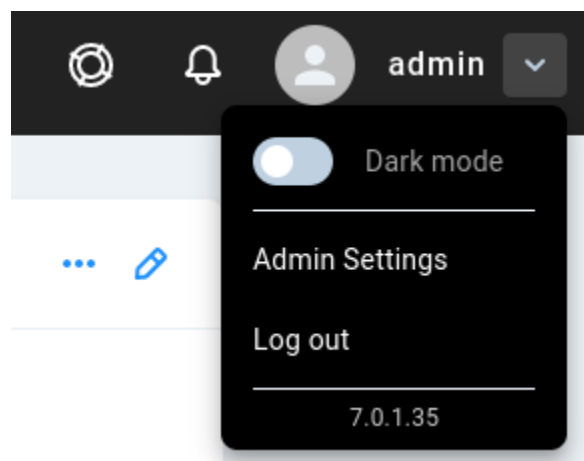
Show info messages - These messages are simply informative, and are displayed in blue.

Show warning messages - These messages warrant attention, and are displayed in yellow.

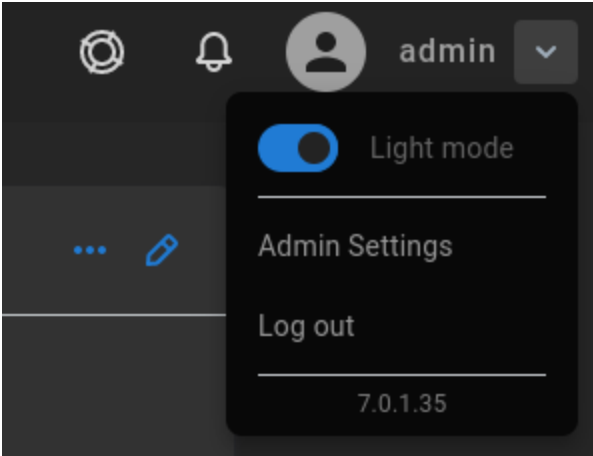
Show error messages - These messages require immediate attention, and are displayed in red.

Note: Be sure to configure automated email/SNMP messaging if you'd like to receive important messages when not logged in to EVO's web interface.

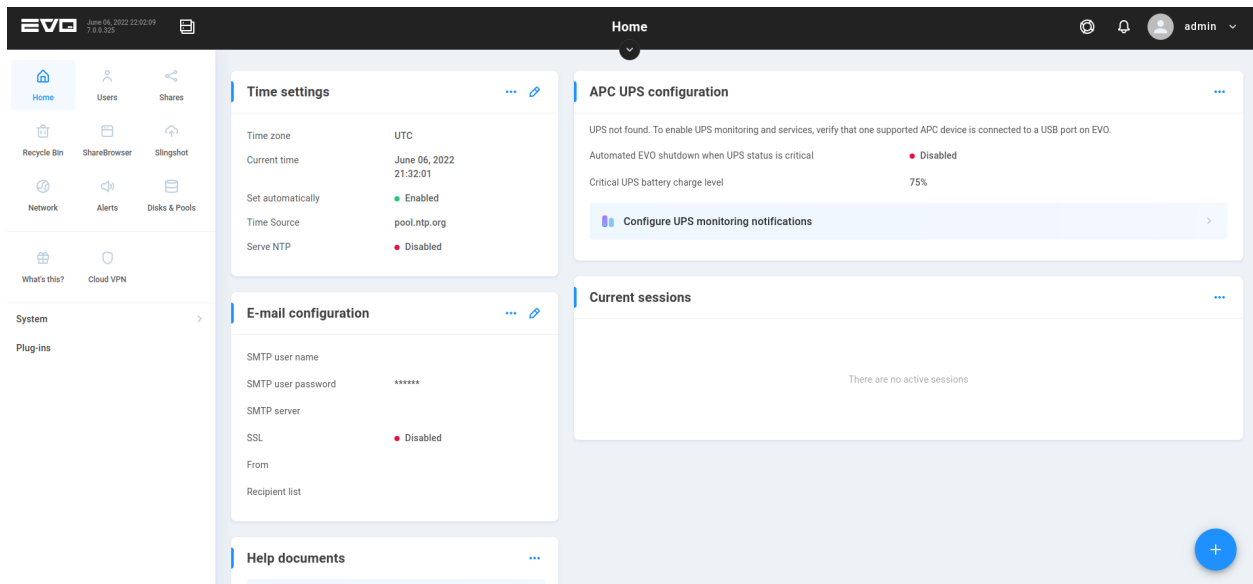
6.5 Interface User



An icon and the name of the currently logged-in user are displayed. Click the down arrow to display the EVO OS version and expose the options to enable **Dark mode**, the [Admin Settings](#) page, or Log out.



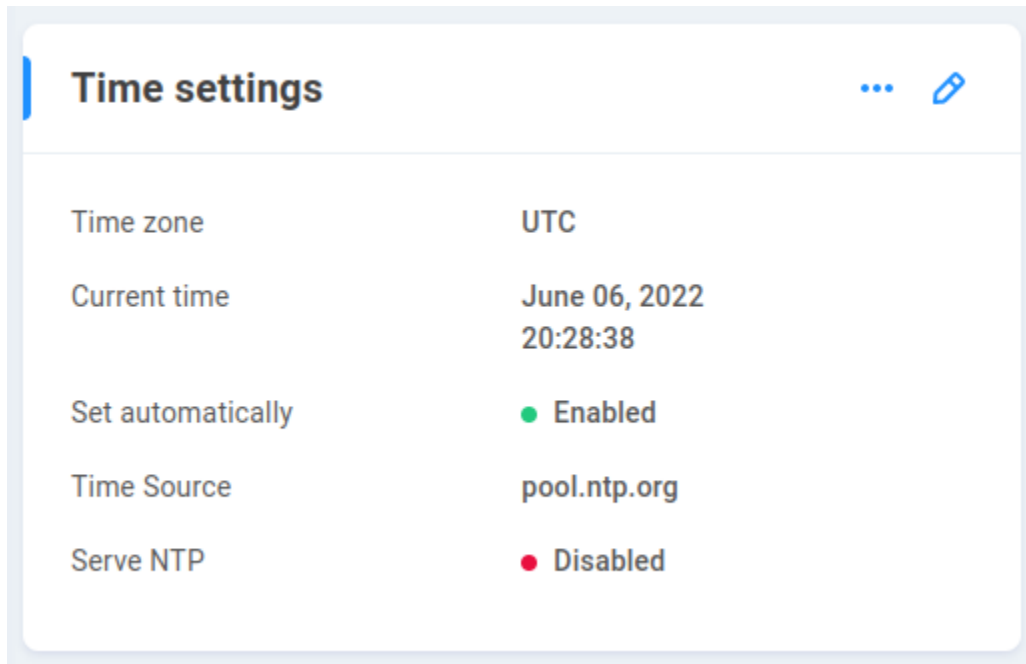
7 | Home



This is the starting page if the *Quick Start* page has been disabled, and it can be modified by clicking ... on any displayed information card to add or remove it from the Home page. The following cards are in place on the default Home page.

7.1 Time settings

It's especially important that operating systems (workstations, EVO, other devices) agree on time when it comes to file management, and computer clocks drift over time unless connected and configured to retrieve periodic updates from a network time provider.



Setting the time properly will assure correct time-stamping of files on NAS shares and aid in the event that technical support is required. Set the following fields properly for accurate timekeeping:

Time zone - By default, this is set to UTC. Select the correct time zone for your environment for easy readability. Note that the time zone is a display consideration only and does not affect the actual system clock.

Current time - This can be manually set, though it's recommended to use a network time provider (NTP) to ensure accuracy, since hardware clocks may drift over time. If a time source is not configured, be sure to check on the clock periodically to mitigate drift.

Set automatically - This is enabled by default, and also requires network access to the time source (NTP), which can be tested using the [Ping Test](#) at the [Network](#) page.

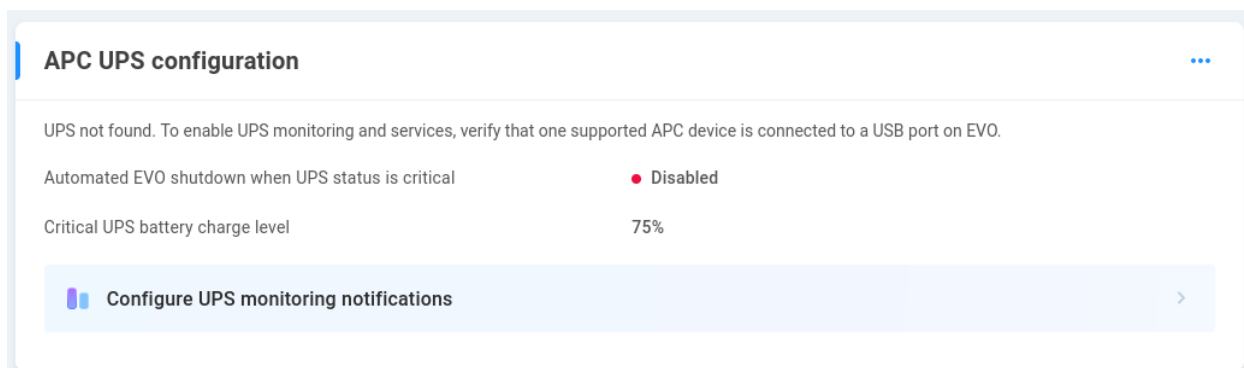
Time Source - This is the network time provider (NTP) that EVO will attempt to reach in order to keep its clock synchronized. By default, pool.ntp.org is used, though this can be any NTP, including a time provider in your local environment.

Note: Because NTP servers are usually known by hostnames (e.g. north-america.pool.ntp.org) instead of IP addresses, valid DNS server settings are a requirement for the system to use hostnames for the NTP.

Advanced Settings

Serve NTP - This can be enabled to provide clock synchronization for other devices, using EVO's system time as the master clock. This may be useful in air-gapped environments where workstations do not have internet access to retrieve time from a standard NTP. They can instead be configured to use EVO as their NTP, to ensure server and client clocks are in agreement.

7.2 APC UPS configuration



To minimize disruption and/or extended downtime due to site-wide power-related disturbances and their consequences, your EVO (and preferably each workstation and related infrastructure!) should be properly connected to an uninterruptible power supply (UPS). A UPS battery can help guard against many possible power issues, but a UPS system is most effective when configured to gracefully shut down various components once its battery depletes to a critical level. Therefore, it is highly recommended that you properly attach your EVO to a suitable APC-brand UPS, and configure EVO to be automatically shut down gracefully upon the observance of a critical power-related situation.

To configure your EVO to shut down gracefully in the event of critical power, connect the USB cable from a compatible APC UPS to any USB port on EVO. The EVO system may need to be rebooted in order to recognize the APC UPS. The interface should inform once the protection is active, and display the critical battery level at which a shutdown request will be issued.

Warning: An unexpected power loss on any in-use file system can result in file system corruption, so it's especially important to take steps to mitigate this risk.

Note: An APC UPS with USB is required for communication between EVO and the UPS. The recommended UPS for 8 bay and 16 bay units is APC Smart-UPS 2200VA USB & Serial RM 2U 120V. Only one UPS is supported per EVO. Refer to the EVO Models & Specs page at snsevo.com for more information on power load for various EVO systems such as the 16 bay, 8 bay, and Prodigy.

7.3 E-mail configuration -

See *E-mail configuration*

7.4 Current sessions

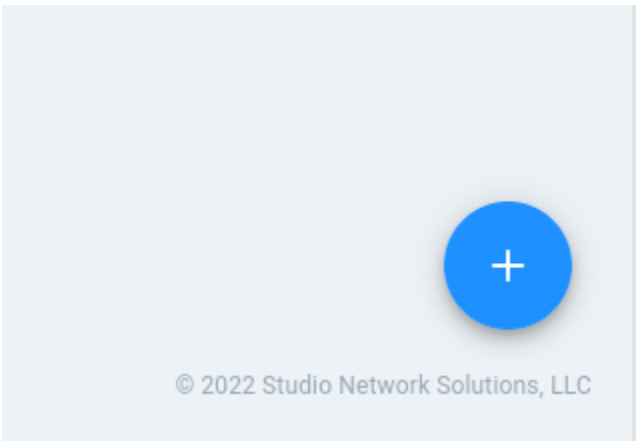
Current sessions ...			
Share name ⬇	Protocol ⬇	Remote host ⬇	Speed ⬇
Media	smb	192.168.1.158	1 Gb/s
Projects	smb	192.168.1.158	1 Gb/s

This card provides statistics for all current NAS sessions on EVO. A session is generally established when a network volume (NAS share) is accessed by a client machine. The share names, protocols used, client addresses, and connection speeds are displayed.

7.5 Help documents -

See *Help documents*

7.6 Add widget



Clicking the plus symbol at the bottom right brings up the **More Widgets** page, which displays some additional utilities that can be added to the Home page.

CPU - This shows a rolling graph that provides updating process statistics.

Disk activity - This shows a rolling graph that provides updating read and write statistics for EVO’s (local) disks.

Physical disks - Displays all currently activated/populated disks. Clicking on a disk brings up options to retrieve a S.M.A.R.T. (disk health) report, or to toggle a beacon LED on the disk to assist with identification in the chassis.

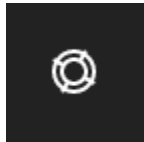
Storage - This shows historical logical disk usage statistics.

Network - This provides a drop-down menu where you can choose which interface's statistics to view, and the current in/out traffic for that port, displayed in mebibytes (MiB) per second by default.

CPU (detailed) - This provides a more detailed view of the processor activity, showing some common CPU states and a history for each.

8 | Support

Click the life raft symbol to bring up the Support page.

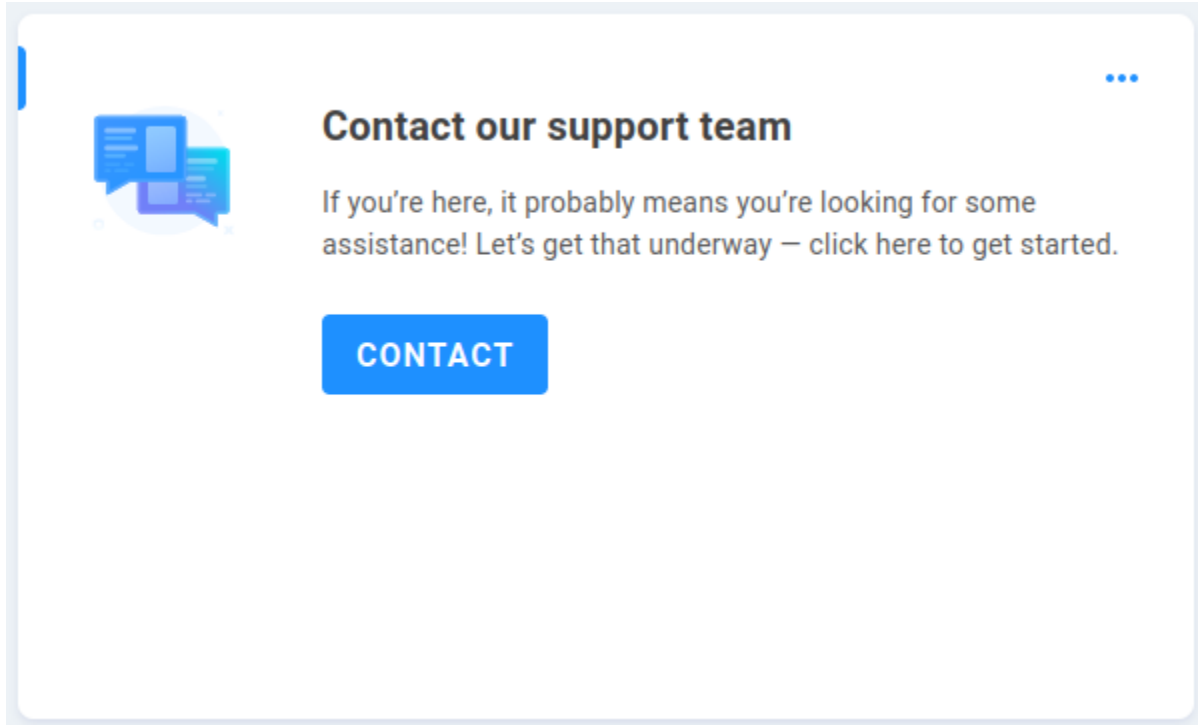


8.1 Start

The screenshot shows a web interface for a support page. At the top is a dark header bar with a life raft icon, the word "Support", and a plus icon. On the right side of the header are a camera icon and a bell icon. Below the header is a navigation bar with four tabs: "START" (which is active and underlined), "OS DATA", "REPLACE DISK", and "SELF TESTS". The main content area is divided into four panels. The top-left panel is titled "Contact our support team" and includes a text block and a blue "CONTACT" button. The top-right panel is titled "Help documents" and lists four items: "Quick start", "EVO", "ShareBrowser", "Knowledge base", and "Downloads", each with a right-pointing arrow. The bottom-left panel is titled "System logs" and includes a text block and a blue "DOWNLOAD" button. The bottom-right panel is titled "Logging level" and shows a table with two columns: "Log level" and "Standard logging".

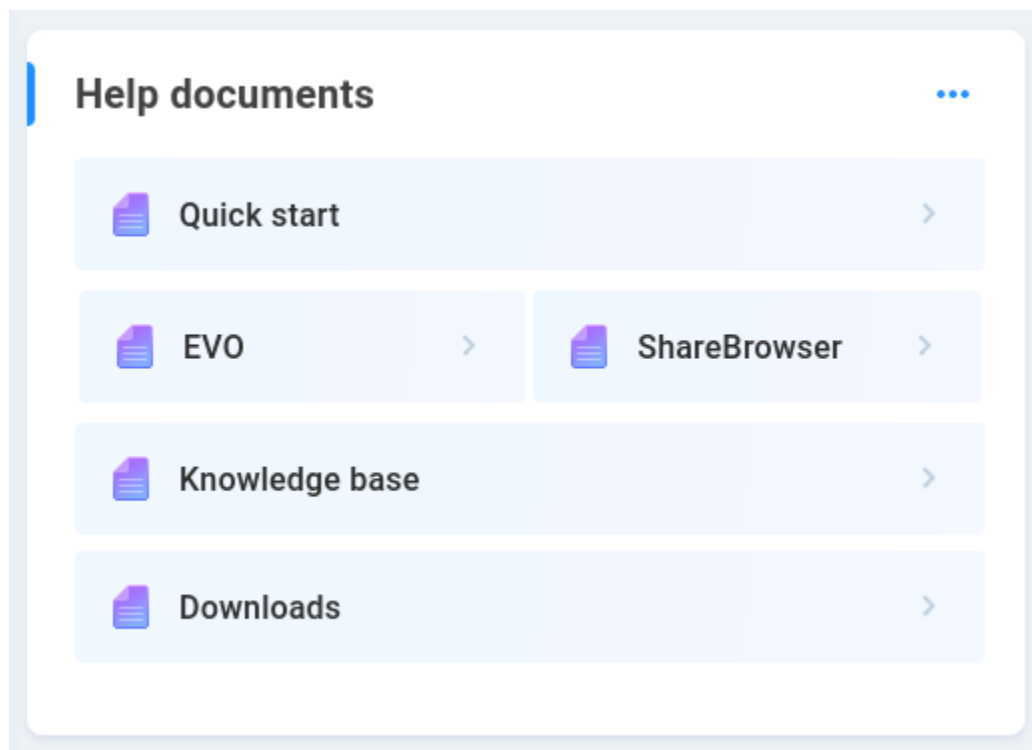
Logging level	
Log level	Standard logging

8.1.1 Contact our support team



Contact redirects to <https://www.studionetworksolutions.com/support/> so you can quickly create a support ticket if assistance is needed.

8.1.2 Help documents



Quick start links to the [Quick Start](#) page.

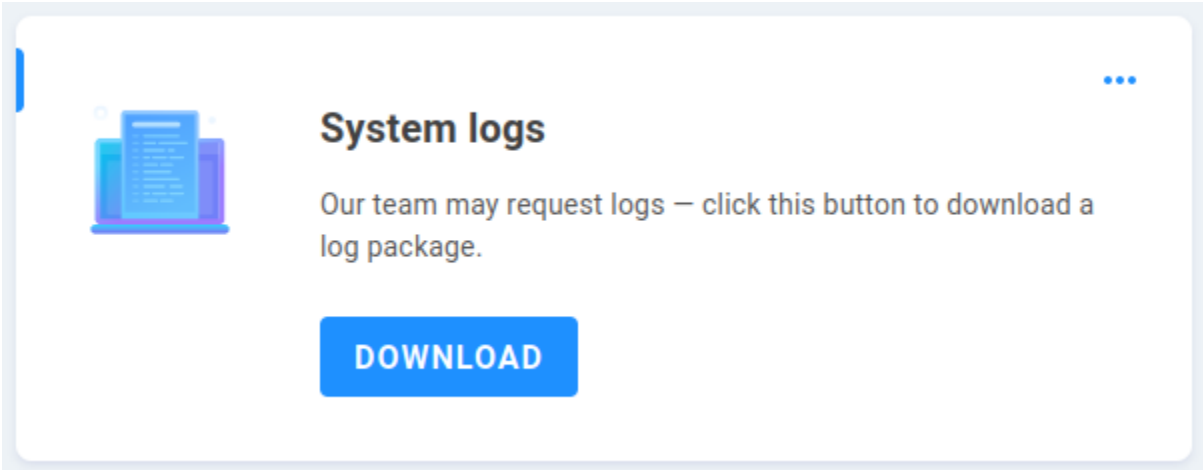
EVO links to the [latest EVO guide](#). This may not be the correct guide for your EVO version, so confirm the version number listed in the EVO interface to ensure accurate information from the guide. Guides for previous EVO versions can be provided by the SNS support team.

ShareBrowser links to the latest ShareBrowser guide. This may not be the correct guide for your ShareBrowser version, so confirm the version number listed at the [ShareBrowser](#) page and in the ShareBrowser client interface to ensure accurate information from the guide.

Knowledge base links to the SNS Knowledge Base, where supplemental articles about specific considerations may be found. Some articles require registration to view.

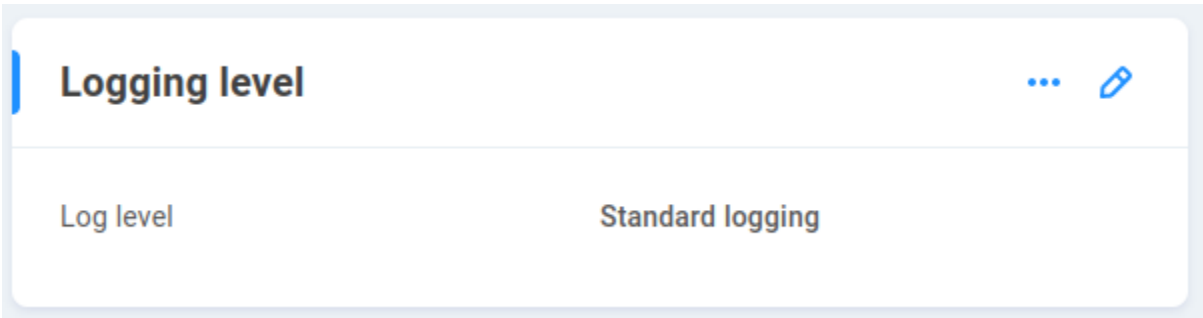
Downloads links to <https://www.snsftp.com/public/> where current and legacy client software versions are available for download.

8.1.3 System logs



Our team may request logs at some point — click this button to download a log package.

8.1.4 Logging level



By default, a standard logging level is used for EVO component reporting. The verbosity of output can be adjusted, and the chosen logging level affects system resource usage. Options from least impactful to most are **No logs**, **Critical logging**, **Standard logging**, and **Full logging**.

Note: If Full logging is selected, a new option appears to automatically revert to default logging after a chosen period of time (5, 15, 30, or 45 days).

8.1.5 Push diagnostics

Push diagnostics

...

Push vital details about this EVO (such as CPU, uptime, OS version, model, and serial number) to SNS on an infrequent basis. These details can help our support team improve its ability to assist with your system. Sensitive information such as users, passwords, and data in your pools/logical disks will not be sent.

Push diagnostics	● Disabled
Serial number	n/a
Registration ID	n/a
Frequency	Never

Push vital details about this EVO (such as CPU, uptime, OS version, model, and serial number) to SNS on an infrequent basis. These details can help our support team improve its ability to assist with your system. Sensitive information such as users, passwords, and data in your pools/logical disks will not be sent.

Push diagnostics - Disabled by default, may be preconfigured to register the SNS chassis number.

Serial number displays the SNS serial number if provided.

Registration ID displays the registration ID issued when registering your EVO with SNS at <https://studionetworksolutions.com/registration/>.

Frequency shows the frequency with which EVO will push its diagnostics.

Click the pencil to add or edit any of these values.

8.2 OS Data

Support

STARTOS DATAREPLACE DISKSELF TESTS

Partition status

Partition	Status	Version
Partition 2	Default	7.0.0.318
Partition 3	Reserve	7.0.0.318

Upgrade system

No upgrade files found. Please [upload](#) an upgrade file

System components

Name	Version
ShareBrowser Server	6.1.0021.26-r5
ShareBrowser WebClient	6.1.0020.7
Slingshot	1.4.229-r4
Web UI	7.0.0.318

The EVO operating system is on a disk separate from the data drives installed at the front of the chassis. The OS data page presents information and options relating specifically to the operating system.

8 Bay and 16 Bay EVO systems include a spare operating system disk as an added protection in case of an issue with the default and reserve copies of the operating system on the primary OS disk.

If there’s ever an issue with the primary OS disk, it’s possible to boot into the reserve partition from the Console menu selection or with assistance from SNS.

If there’s ever a need to replace the primary OS disk, EVO can be shut down and the spare disk moved to the primary slot. Following recovery, a replacement disk can be installed to act as the new secondary disk.

Warning: Primary and spare OS disks need to be installed during any upgrade. If replacing a spare, shut down EVO to install it to the spare drive slot (moving the in-use disk if needed), and check the *Partition status* to confirm its content.

8.2.1 Partition status

Partition status			...
Partition	Status	Version	
Partition 2	Default	7.0.0.318	
Partition 3	Reserve	7.0.0.318	

EVO keeps two copies of the operating system on its primary OS disk, separate from the data disks installed at the front of the chassis. 8 and 16 bay systems include a secondary disk with its own primary and reserve partition copies of the OS version. The secondary disk's partitions are written when running an upgrade on the primary disk.

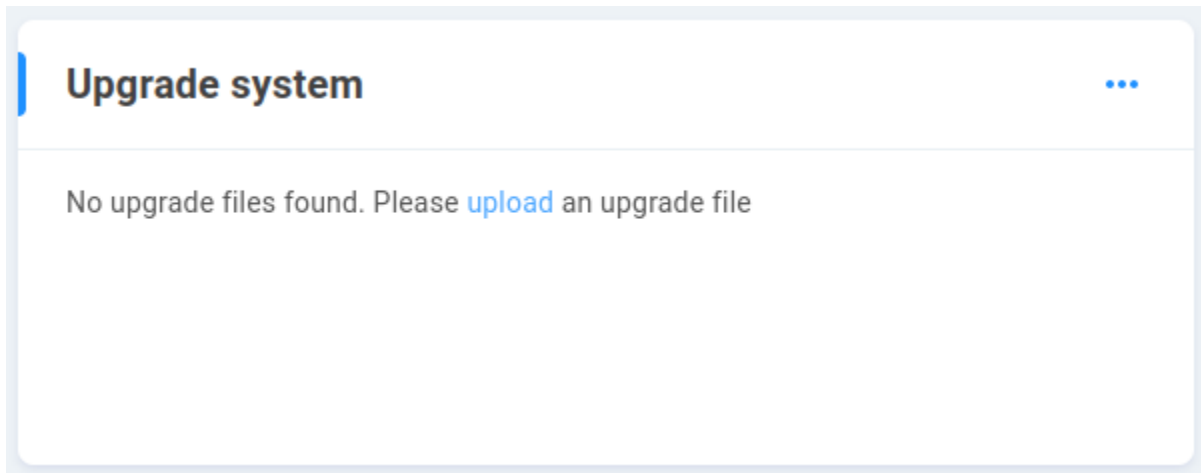
The status for each partition on the OS disk(s) can be verified at the Partition Status card, which lists the OS version written to each.

The above image shows a Prodigy with two partitions (primary OS disk) available, while the below is from a 16 bay system with four partitions available (primary and secondary OS disk).

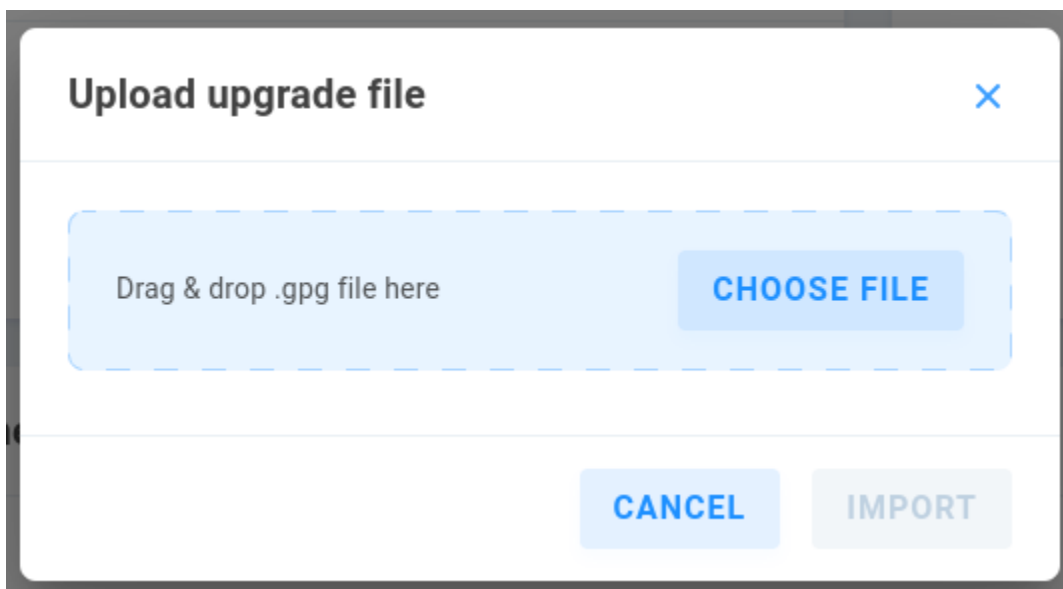
Partition status			...
Partition	Status	Version	
System drive 0, Partition 2	Default	7.0.1.58 (Update: 01-11-2023)	
System drive 0, Partition 3	Reserve	7.0.1.58 (Update: 12-14-2022)	
System drive 1, Partition 2	Reserve	7.0.1.58 (Update: 01-11-2023)	
System drive 1, Partition 3	Reserve	7.0.1.58 (Update: 01-11-2023)	

Warning: To ensure version parity, make sure both disks are installed during any upgrade. If a secondary OS disk is confirmed to be physically present and is not displayed in the web interface, then it may not have an active internal connection. [Contact SNS](#) to ensure the secondary disk is available.

8.2.2 Upgrade system



Upload an EVO image file when it's time to upgrade. See [Contacting Studio Network Solutions](#) to stay up to date with product news and get in touch with the support team to ask about upgrade options.



When the upgrade is completed, EVO will prompt for a reboot, after which it will boot into the partition that was just upgraded (the currently booted partition becomes the reserve partition).

Upgrades are generally performed a second time after confirming expectations following the first upgrade, to ensure all partitions are able to correctly boot and present the shared storage.

8.2.3 System components

System components		
Name	Version	
ShareBrowser Server	6.1.0021.26-r5	>
ShareBrowser WebClient	6.1.0020.7	>
Slingshot	1.4.229-r4	>
Web UI	7.0.0.318	>

Information about supplemental components in EVO (some of which may be manually activated) are displayed here. These components are included in the EVO OS, and do not normally need to be upgraded, though there are situations where it may make sense to modify a particular component.

Support

admin

START

OS DATA

REPLACE DISK

SELF TESTS

ShareBrowser Server

DETAILS

ACTIONS

UPGRADE

System components	
Name	Version
ShareBrowser Server	6.1.0021.26-r5
ShareBrowser WebClient	6.1.0020.7
Slingshot	1.4.229-r4
Web UI	7.0.0.318

Click a component to upgrade it individually.

8.2.4 Component databases

Component databases		
Share to backup and restore database	sys-management	
Path to backup and restore database	EVO-Database-Backups	
Schedule	every day at 00:00	
Delete backups	after 4 weeks	

The ShareBrowser and Slingshot components require configuration to ensure database preservation. The details and options for configuration are presented here.

Share to backup and restore database displays the selected backup location for the components.

Path to backup and restore database displays the path to the directory used for backup on the share selected above.

Schedule displays the recurring day(s) and time the database should be backed up. The default is every day at midnight.

Delete backups displays the retention time for backups, after which they will be automatically purged. Backups are stored for 4 weeks by default.

Click the pencil to edit the above values.

Click the three dots to import or export a ShareBrowser or Slingshot database.


Export will allow for download to your local machine. Import will allow for upload from your machine, or “use restore location” can be selected; this will show the contents of the directory that’s been configured for automatic database backup, and allow for selection of the backup version to import. When importing a Slingshot database, a previous configuration can be used, or a new one created.

8.2.5 Installed plug-ins

Installed plug-ins		
Name	Version	
DaVinci Resolve PostgreSQL	9.5.23.5	>
NDI	0.9.4.1	>

In addition to the standard ShareBrowser and Slingshot components included with EVO, there may be some functionality that can be provided by an SNS-provided plugin. This section displays details for any added plug-ins, as well as the option to install one.

8.2.6 Recover configuration



Recover configuration

EVO will automatically store and backup its firmware configuration/service information on hidden areas of the data disks. This configuration information can be used to automatically restore your EVO's firmware configuration from, for example, this EVO to a new/different EVO, by simply installing all existing disks into the new EVO.

This page will help you recover firmware configuration information from your data disks in cases when an automatic configuration restore is not necessarily applicable. For more information about situations where a manual recovery of firmware configuration may be necessary, please see the "Recover Configuration" section of the EVO manual.

EVO will automatically store and backup its firmware configuration/service information on hidden areas of the data disks. This configuration information can be used to automatically restore your EVO's firmware configuration from, for example, this EVO to a new/different EVO, by simply installing all existing disks into the new EVO.

This page will help you recover firmware configuration information from your data disks in cases when an automatic configuration restore is not necessarily applicable.

For example, if disks are moved from one EVO to another, when the system boots, it will identify its original EVO configuration (even if that includes no disks), as well as the configuration stored on the newly-installed disks. The administrator will need to choose whether the existing configuration should be used and disks should be treated as new, with the other EVO configuration disregarded, or to recover the configuration brought over by the disks, overwriting the existing EVO configuration.

Note: Recovery will take some time, during which the web interface may not be available. Information about the startup process can be verified with a connected keyboard and display.

Warning: If there's a need to fail over to the spare OS disk and you'd like to install a new spare drive, shut down EVO when convenient and move the in-use OS disk to the empty slot and install the new spare disk to the original spare slot. While EVO can run on a disk in either OS drive position, it expects the primary and spare disks to be connected according to their labeled positions.

8.2.7 Configuration backups

Configuration backups				...
Backup name	Date	EVO version	ID	
This EVO	11:05:55 05/17/2022	7.0.0.317	415e7604-7a0f-46fb-a61e-94f7181c8a14	>
This EVO	11:01:36 05/17/2022	7.0.0.317	415e7604-7a0f-46fb-a61e-94f7181c8a14	>
This EVO	10:05:54 05/17/2022	7.0.0.317	415e7604-7a0f-46fb-a61e-94f7181c8a14	>
This EVO	10:01:36 05/17/2022	7.0.0.317	415e7604-7a0f-46fb-a61e-94f7181c8a14	>

All valid found EVO configurations are listed, with name, date, version, and unique ID displayed. These are automatically created, and if differing configuration files are found, the administrator can decide which should be recovered or destroyed.

	START	OS DATA	REPLACE DISK	SELF TESTS	
This EVO	12:01:36 05/17/2022	7.0.0.317	415e7604-7a0f-46fb-a61e-94f7181c8a14		<div> <div>This EVO</div> <div> <div>DETAILS</div> <div>ACTIONS</div> </div> </div>
This EVO	11:45:56 05/17/2022	7.0.0.317	415e7604-7a0f-46fb-a61e-94f7181c8a14		<div> <div>RECOVER</div> <div>DESTROY</div> </div>
This EVO	11:43:58 05/17/2022	7.0.0.317	415e7604-7a0f-46fb-a61e-94f7181c8a14		

Select a backup from the list to recover or destroy that configuration.

Warning: If differing configurations are found at boot, a decision needs to be made about “which” EVO should be used. Ensure the selected configuration file is correct according to its timestamp before committing to recovering or destroying a configuration.

8.2.8 EVO OS disks

EVO OS disks				...
Drive number	Model	Serial number	Startup disk	
0	WDC WDS250G2B0B	201685469506	Yes	>

Information about the operating system disk(s) is displayed. Click on the line to bring up its Actions.

	START	OS DATA	REPLACE DISK	SELF TESTS
This EVO	12:01:36 05/17/2022	7.0.0.317	415e7604-7a0f-46fb-a61e-94f7181c8a14	
This EVO	11:45:56 05/17/2022	7.0.0.317	415e7604-7a0f-46fb-a61e-94f7181c8a14	
This EVO	11:43:58 05/17/2022	7.0.0.317	415e7604-7a0f-46fb-a61e-94f7181c8a14	
This EVO	11:05:55 05/17/2022	7.0.0.317	415e7604-7a0f-46fb-a61e-94f7181c8a14	

EVO OS disks			
Drive number	Model	Serial number	Startup disk
0	WDC WDS250G2B0B	201685469506	Yes

Drive number 0

[DETAILS](#)
[ACTIONS](#)

[SHOW S.M.A.R.T. REPORT](#)

[TURN BEACON LED ON](#)

Show S.M.A.R.T. Report - Displays the SMART stats for the physical drive.

Turn Beacon LED on/off - Toggles illumination of the LED at the physical drive for visual identification of the device.

8.3 Replace Disk

Unlike **OS Data**, this section deals with the data drives. While EVO uses enterprise-class disks that consistently have the lowest failure rates in the industry, on a long enough timeline, a hardware failure can be expected.

START	OS DATA	REPLACE DISK	SELF TESTS
-------	---------	--------------	------------


Failed drives

No failed/replaced drives detected.

Information

If a disk fails, you must remove any "Corrupt" logical disks (such as a RAID-0) before the new drive can be integrated.

Physically remove the failed drive and insert a new drive into the same slot. (Alternatively, if there is another physical disk of equal or greater capacity that has already been installed and activated but not assigned to a pool, you may use that disk to replace the failed drive.)

Click the "Refresh Drive Status"  button on this page.

Once the replacement drive is detected, select this drive under the "Replacement drive" column in the "Affected pool" header and click the "Commit" button on this page.

The system will begin repairing the degraded RAID in order to bring the logical disks back to "Good" status. Any degraded logical disks will remain online and available throughout this process, though system performance may be affected during the rebuild.

☐ Don't redirect to this page for 24 hours.

8.3.1 Failed drives

Any physical data disks that have been automatically identified as failed are presented here. Click the refresh icon to initiate a manual scan for failed disks.

8.3.2 Information

If the need arises to replace a disk (see [Alerts](#) to ensure you're notified immediately), follow the instructions in the **Information** section on this page:

- Physically remove the failed drive and insert a new drive into the same slot. (Alternatively, if there is another physical disk of equal or greater capacity that has already been installed and activated but not assigned to a pool, you may use that disk to replace the failed drive.)
- Click the “Refresh Drive Status” button on this page.
- Once the replacement drive is detected, select this drive under the “Replacement drive” column in the “Affected pool” header and click the “Commit” button on this page.
- The system will begin repairing the degraded RAID in order to bring the logical disks back to “Good” status. Any degraded logical disks will remain online and available throughout this process, though system performance may be affected during the rebuild.

Don't redirect to this page for 24 hours. - Toggle this on if you've been made aware of the drive failure and interface attempts to inform are no longer needed.


8.4 Self Tests

START

OS DATA

REPLACE DISK

SELF TESTS


EVO test tools

The self test options on this page are designed to isolate and measure essential EVO components and functions. The test results can also be helpful with performance-related troubleshooting to identify if storage/network bandwidth or latency issues are present within the EVO unit itself.

Memory test

Lower level functional testing can be initiated by restarting EVO with a keyboard/monitor connected and choosing the “EVO Memtest” option at the boot menu.

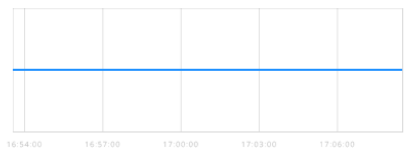
Loopback network test

Sender: eth0 (172.19.42.25 / 3a:49:50:0b:9c:a8)
Receiver: eth1 (192.168.1.246 / fa:28:49:82:7a:cd)
Length of test: 30 seconds
Threads: 8

START

Network eth0

Network
eth0 in
0 MiB/s
eth0 out
0 MiB/s
17:08:30



8.4.1 EVO test tools

The self test options on this page are designed to isolate and measure essential EVO components and functions. The test results can also be helpful with performance-related troubleshooting to identify if storage/network bandwidth or latency issues are present within the EVO unit itself.

8.4.2 Memory test

Lower level functional testing can be initiated by restarting EVO with a keyboard/monitor connected and choosing the “EVO Memtest” option at the boot menu.

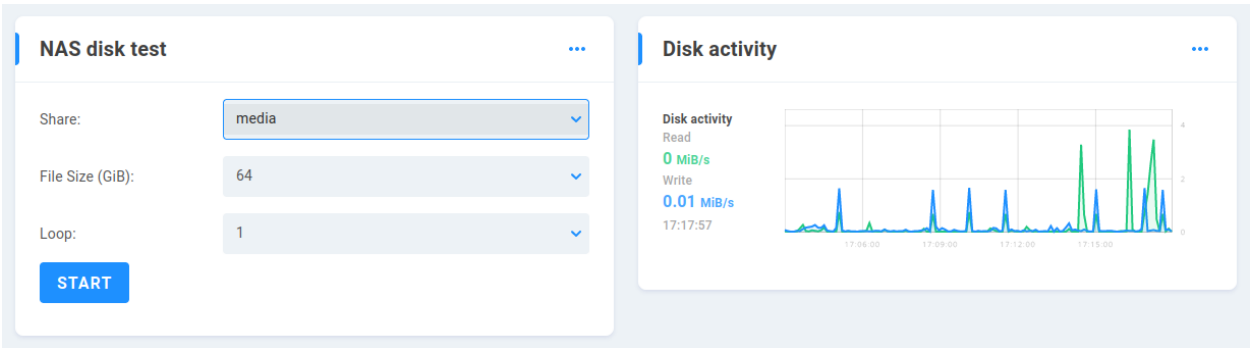
8.4.3 Loopback network test

This test allows for testing Ethernet port communication without involving the file system (disks), and is used to confirm network hardware functionality.

The Loopback Network Test is performed by connecting a cable from one EVO Ethernet port to another, directly or through a switch. Choose sender, receiver, select the length of time for the test as well as the concurrent threads, and once it’s finished, click Last test result to get detailed port statistics.

8.4.4 Network-

This section will display current network traffic statistics for reference during the loopback network test.



8.4.5 NAS Disk Test

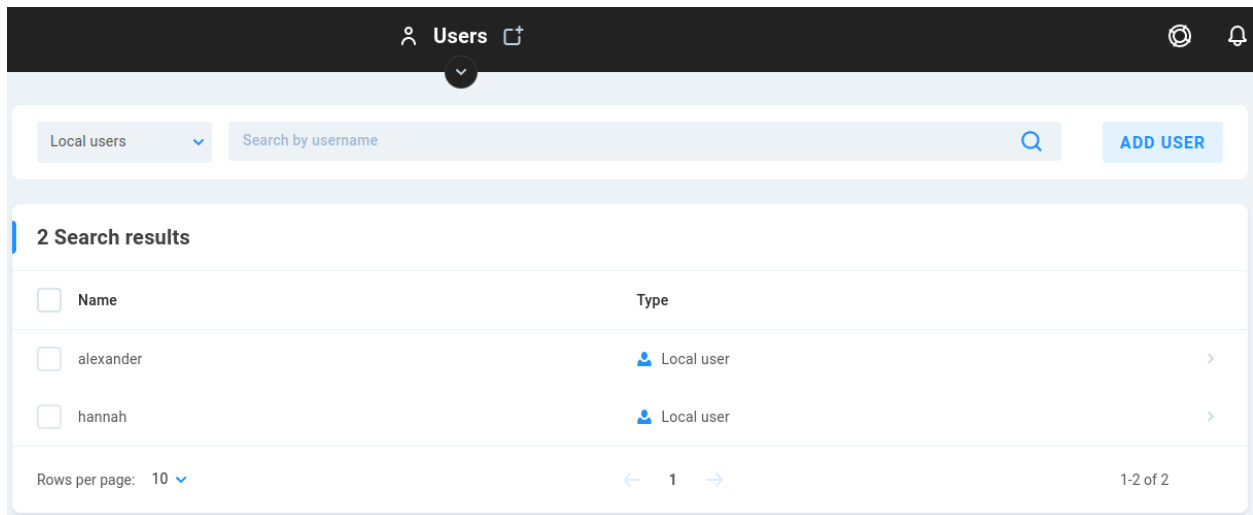
This test allows for testing read/write file system operations on the file system (EVO share) without involving the network, and is used to confirm physical disk performance and file system behavior. Select the share(s) you’d like to test and use the default parameters or set a custom test file size and number of test iterations.

8.4.6 Disk activity

This section will display current read and write statistics for reference during the NAS disk test.

Warning: These tests will not modify any existing data on your logical disks. However, the testing process will be disruptive to any other users accessing EVO. It is strongly recommended that these tests be run only while the system is otherwise idle, preferably with all Ethernet ports disconnected except for those that will be participating in or monitoring the tests.

9 | Users



The Users page allows permissions to be created for user access to NAS shares hosted on EVO.

The dropdown menu at the top left allows for view selection for the existing users. The ADD USER button will change to AD/LDAP depending on whether the selection is for local or external user/group.

Once the user/group is created, click on it to assign SMB share access or make modifications.

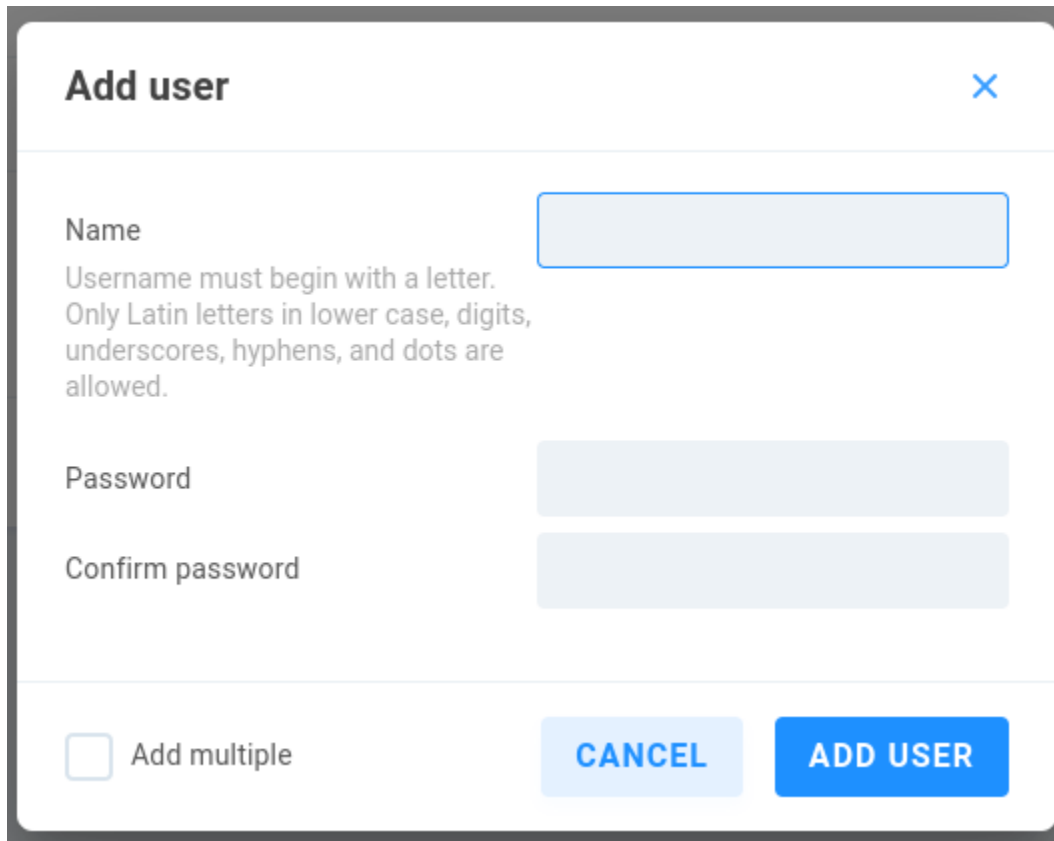
Local users are users created on EVO.

External users are imported from an external user directory service such as Active Directory.

Local groups are EVO administrator-defined groups created for EVO local users. This allows for per-group permissions to be applied to a number of users with a single modification.

External groups are groups imported from an external directory service. This allows for per-group permissions to be applied to a number of users with a single modification.

Search by username - Enter a full or partial search to retrieve any matches. For instance, searching a single letter will return all names that contain that letter.



Add user ×

Name

Username must begin with a letter.
Only Latin letters in lower case, digits,
underscores, hyphens, and dots are
allowed.

Password

Confirm password

☐ Add multiple

CANCEL **ADD USER**

Add User allows for creation of one or multiple EVO local users or groups.

User/group names must begin with a letter. Only Latin letters in lower case, digits, underscores, hyphens, and dots are allowed.

Tip: Assign permissions according to local or external user groups for quicker permission application than per-user modification.

9.1 Sync with AD/LDAP

EVO can join to either Active Directory or another LDAP server. Connecting to one will prevent connection to the other. Choose External groups from the drop-down menu on the Users page to expose the AD/LDAP button.



External users

Search by username

Q

• LDAP

2 Search results

<input type="checkbox"/>	Name	Type	
<input type="checkbox"/>	alexander@EVO	 External user	>
<input type="checkbox"/>	hannah@EVO	 External user	>

Rows per page: 10

←

1

→

1-2 of 2

For either directory service, keep the following considerations in mind:

- EVO can use either Active Directory or LDAP, but not both simultaneously.
- Names of users and groups must contain only Latin letters and digits and must be shorter than 32 characters. Dots, dashes, and underscores are allowed, but names with spaces and other special characters will not be imported.
- A conflict with EVO's internal root user may be created if the directory also has a user named "root".
- EVO must be pointed at a DNS provider that can resolve the directory server's hostname. This is found at the Connectivity page in the EVO web interface.
- The EVO clock must also be in agreement with the directory server's clock. The EVO time is found at the System page, and the NTP server or NTP client role can be chosen. Check the Connectivity page to ensure a gateway is properly configured if an internet provider is to be used.
- When mounting EVO NAS shares in an Active Directory environment, authentication for non-AD EVO users (created in the EVO web administration) will require instruction that the AD domain not be used. Prepending "evo" to the username in the workstation's mount prompt (example "evo\alexander") will tell the workstation to use the evo domain, rather than the local domain. If an alternate domain is not specified, the workstation will default to using the Active Directory domain, and EVO will expect an AD user rather than a local one.

9.1.1 Active Directory

Sync with AD/LDAP ×

ACTIVE DIRECTORY

LDAP

Enable AD

☒

Status

Connected

Domain

STLOUISAD.SNS

User

Administrator

Password

Enable support for trusted domains

☒

CANCEL

SAVE

Enable AD toggles the connection to the AD Server on/off.

Status displays current AD connection status.

Domain - Specify the domain name (ensure this is resolvable by DNS).

User - Enter an AD user with permission to manage computer accounts.

Password - Enter the AD user password.

Enable support for trusted domains - when enabled, allows EVO to join to a child domain that presents objects from parent (requires enabling of the “Global Catalog” option in NTDS Settings Properties on the AD server).

9.1.2 LDAP

Sync with AD/LDAP ×

ACTIVE DIRECTORYLDAP

Enable LDAP

☒

Status

Connected

Host

ldap.jumpcloud.com:636

Base DN

o=623bf45068f9f66cec3849ac,d

Encryption

SSL

Samba mode

Samba.schema

Samba SID

S-1-5-21-2234082455-39129216

Bind DN

uid=evoadmin,ou=Users,o=623bf

Bind Password

LDAP user suffix

ou=users

LDAP group suffix

ou=users

CANCEL

SAVE

Enable AD toggles the connection to the LDAP Server on/off

Status displays current LDAP connection status

Host - Enter the host name:port for the LDAP server

Base DN - Enter the string provided by the LDAP server (o=%SECRET%,dc=%DOMAINCOMPONENT%,dc=com)

Encryption - Choose None, SSL, or TLS - certificates are imported at the System > Advanced page using the Certificate authority card

Samba mode - Samba.schema is required for SMB authentication

Samba SID - Unique security identifier for EVO (note the string is longer than the field, so ensure it's all copied when connecting)

Bind DN - Enter the LDAP distinguished name (uid=%BIND DN USER%,ou=Users,o=%SECRET%,dc=%DOMAINCOMPONENT%,

Bind Password - %BIND DN USER PASSWORD%

LDAP user suffix - Default is common name "cn=users"

LDAP group suffix - Default is common name "cn=groups"

10 | Shares

10.1 Shares -

Shares

SHARES

REMOTE SHARES

POOL-A/LD1

RAID5

Total: 200.1 GiB Allocated: 1.6 GiB Free: 198.5 GiB

<input type="checkbox"/> Share name	Protocol	Used (GiB)	Status	
<input type="checkbox"/> sys-management	SMB	0.1	Online	>
<input type="checkbox"/> sys-reserved	Reserved	0	Online	>

POOL-A/LD2

RAID5

Total: 1.2 TiB Allocated: 0 TiB Free: 1.2 TiB

<input type="checkbox"/> Share name	Protocol	Used (GiB)	Status	
<input type="checkbox"/> Media	SMB	0.3	Online	>
<input type="checkbox"/> Projects	SMB	0	Online	>

The `/#/shares` page lists directories seen by EVO, whether on its own file system or mounted remotely via a network protocol.

Shares are hosted on EVO's logical disks and presented to users via a network protocol, most commonly SMB. Once user permissions have been granted for the share(s), workstations can mount the shares via Finder/Explorer or Share-Browser and begin sharing storage.

Click the plus symbol to add a share.

Create share

×

Share name

Media

Share comment

Enable Recycle Bin (SMB only)

☒

Advanced settings

↑

Subdirectory

☒ Create new subdirectory

Media

☐ Use existing subdirectory

Quota

0

GiB

Protocol

☒ Use SMB and assign permissions by user/group

☐ Use FTP

☐ Reserved

Browseable

☒

CANCEL

CREATE

Share name - This is the user-facing name seen by workstations as a network share available for mounting. The share can later be renamed by editing this field.

Share comment - This can be useful for EVO administrator notes about the share.

Enable Recycle Bin (SMB only) - The Recycle Bin is enabled by default for newly created shares and can be toggled on/off at any time. Deleted content is automatically purged after one week by default; the retention time is configured at the [Advanced](#) page.

Warning: Only content deleted via the SMB protocol (a client connection) will be recycled. Other network protocols are excluded. Actions taken by a local Slingshot job or File Navigator are similarly excluded since they operate on the file system and not over a network protocol.

Advanced settings

Subdirectory - A subdirectory holds the contents of each share. By default, this subdirectory is named the same as the share at creation, though it's possible to use different share and subdirectory names. If the share is renamed, only the name is changed, while the original subdirectory is still used. If a share is unmapped, the subdirectory remains on EVO, and a new share can be created to use the existing subdirectory.

Quota - A size limit for the share can be defined in this field. Since each NAS share is a mount point on an underlying subdirectory, there is no inherent size associated with it other than the size of the logical disk itself. A quota can be used to impose an arbitrarily defined limitation on the folder size, allowing disk usage to be managed by the administrator. This quota can be changed at any time, and the network share will appear to the users to have a fixed size reflective of the defined quota.

Note: Quotas are assigned per share and may be set to any value, so ensure the total of all share quotas makes sense for the capacity of the underlying logical disk.

Protocol - SMB is the default and most widely used network protocol. This can also be set to FTP or Reserved (EVO-use only).

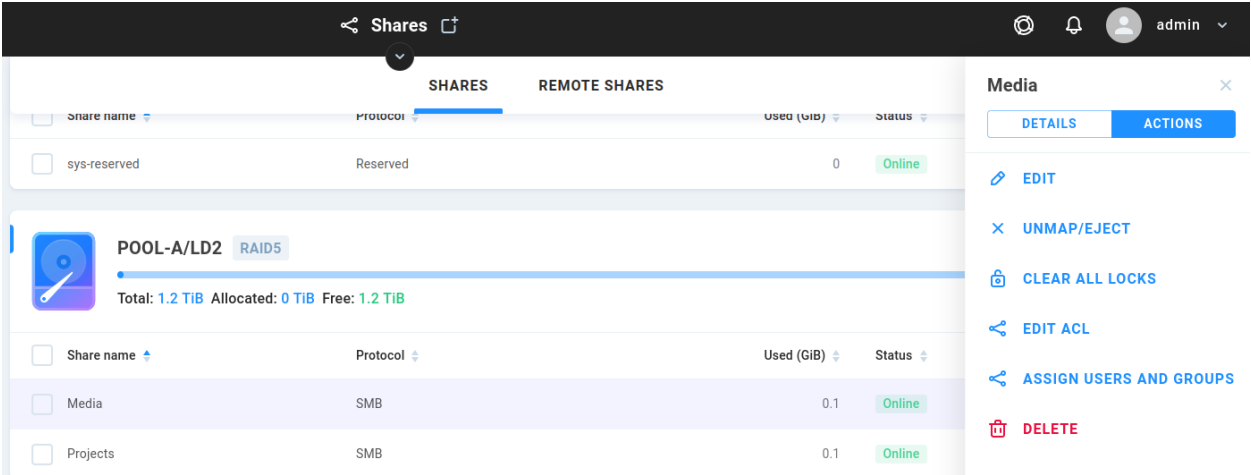
Browseable - When enabled (default), a user authenticating via SMB by network address alone will be presented with a list of shares available to that user. If browsing is disabled, no list is displayed by IP address alone, and the user would need to specify the full network path to each share to be mounted.

Access type - Shares allow for Read-write permission by default, and permissions can be further managed by user/group. This allows for global share permissions to ensure Read-only for all users, or Read-write/Reject delete.

Warning: While the **Read-write/Reject delete** permission mode protects against file *deletion*, it is still possible for a user to rename, move, or change the content of a file.

Project locking - Disabled by default, EVO can maintain a list of watched file types, and add a session lock to any matching file opened with write access by a user, to protect against unwanted changes from another user. ShareBrowser provides an unlock mechanism for users to release their locks. Some file masks are included by default, and it's possible to edit the global mask list to add/remove file types for which automatic locking is intended. The EDIT GLOBAL MASKS button redirects to the [Advanced](#) page.

Click an existing share to bring up its details/actions.



- Edit** - Rename or modify settings
- Unmap/Eject** - Removes the mapping to the share, leaving the subdirectory on the file system. A new share can be mapped to the existing subdirectory.
- Clear All Locks** - Clears any active project locks that may exist on the share (requires Project locking).
- Edit ACL** - Allows for advanced ACL permission control by user/group.
- Assign Users And Groups** - Provides user/group permission management for the share.
- Delete** - Unmaps the share and removes the existing subdirectory and all data within.

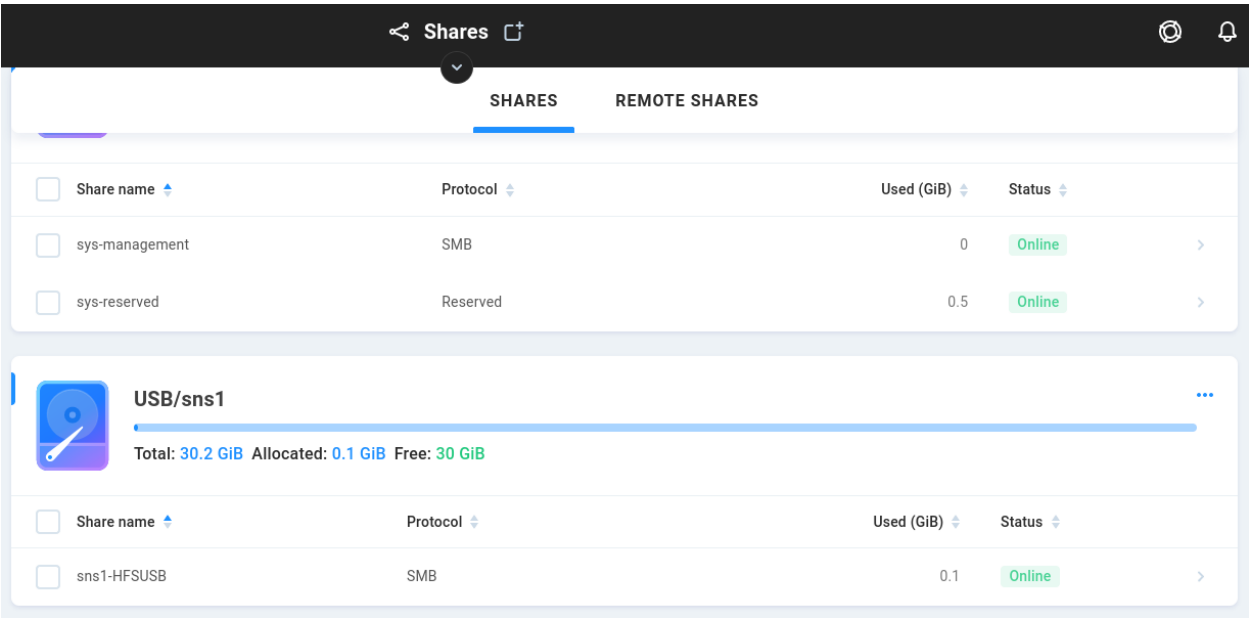
Tip: Assigning permissions by group is simpler and quicker than assigning permissions by user.

10.2 USB Devices

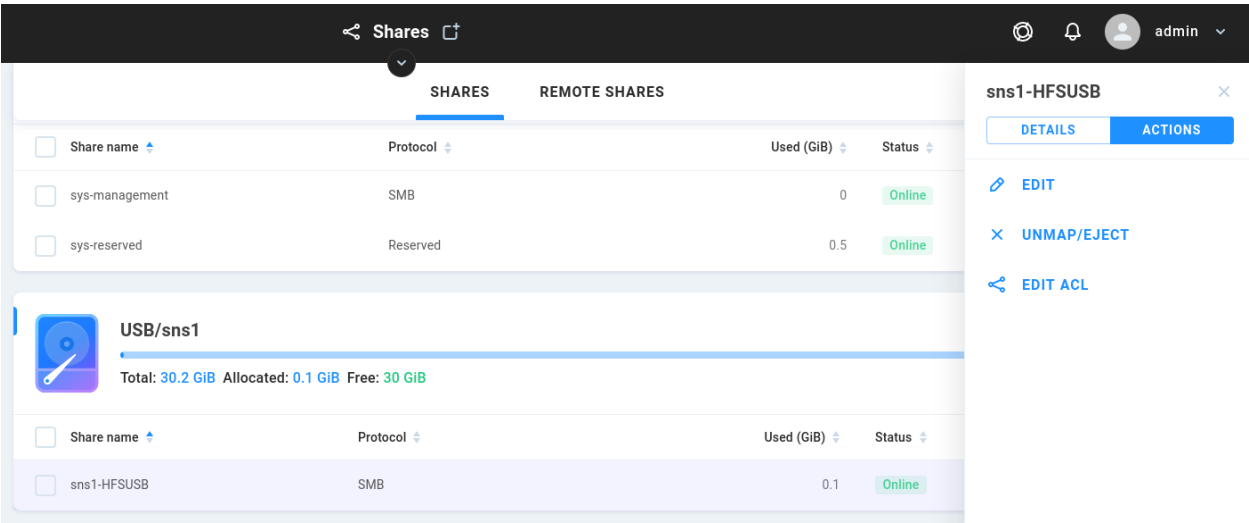
External media devices may be connected to EVO via USB, after which their contents may be presented over SMB as EVO shares, allowing for indexing and proxy generation to provide search and preview for offline media.

Read/Write is available by default for storage formatted as exFAT, NTFS, or FAT32. Apple’s HFS+ file system is presented with Read Only permission by default, though it is possible (using macOS) to disable HFS journaling on the USB disk to allow for R/W (note that journaling is a safety mechanism to help protect against things like USB removal without prior ejection).

After attaching the USB device, its volume(s) will be presented at the *Shares* page.



Click on the share to expose options and choose **EDIT ACL** to grant user(s) access to USB devices.



Choose the intended user from the search results.

Create permissions entry for USB drives

×

Customize settings

 →

Create NAS access to USB drives

Local users

sns

×

▼

Type

Allow

▼

BACK

OK

USB will be presented R/W by default if available. To enable recycle bin or add permission restrictions, select **EDIT** from the share's **ACTIONS** menu.

Edit sns4-exfatusb



Share name

sns4-exfatusb

Share comment

USB Mass Storage

Enable Recycle Bin (SMB only)



Advanced settings



Subdirectory

Quota

0



GiB



Protocol



Use SMB and assign permissions by user/group



Use FTP



Reserved

Access type



Read-write



Read-write/Reject delete
SMB only



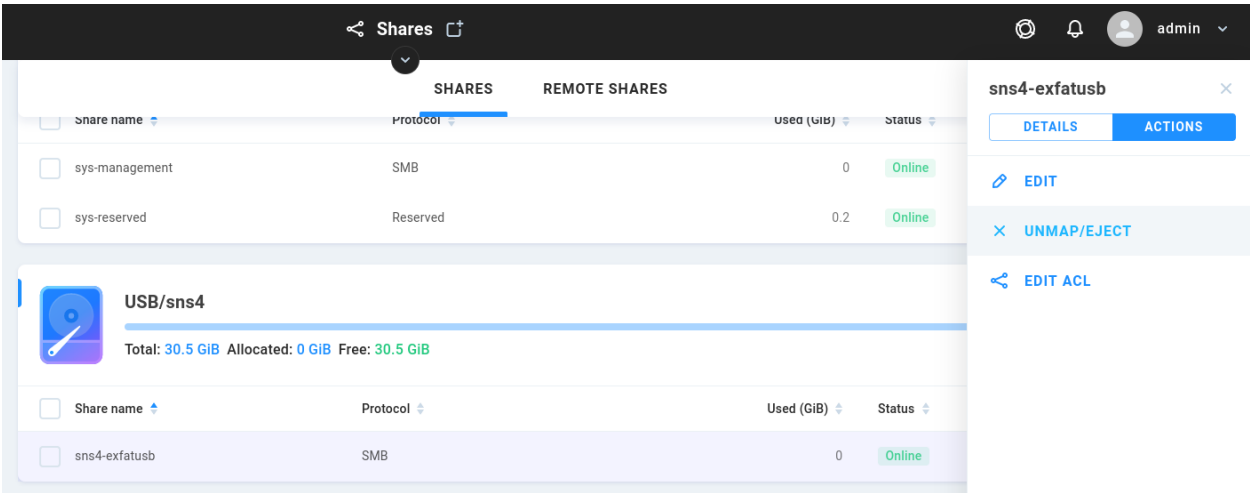
Read-only

CANCEL

SAVE

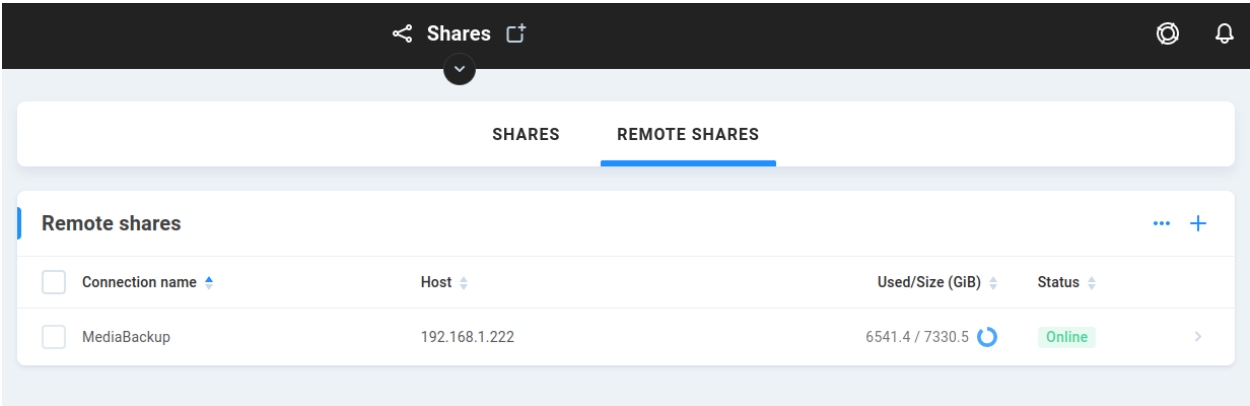
Note: Allow time for newly-added user permissions to propagate for the new share.

Take care to eject the USB volume(s) before disconnecting the device, by selecting **UNMAP/EJECT** from the share’s **ACTIONS** menu.



Warning: Always select **UNMAP/EJECT** before removing any USB device from EVO. Removing a device without first ejecting it may result in file system corruption.

10.3 Remote Shares



Network shares may be mounted by EVO as an SMB client, much the same as a workstation would mount a share from EVO. Since the credentials EVO uses to mount a remote file system belong to the remote file system, access is managed at the remote server. EVO’s own SMB clients’ permissions are not therefore not applied for remote shares. See the ShareBrowser guide for more information.

Click the plus symbol to add a remote share.

Add remote share

×

Connection name	Nearline		
SMB protocol	SMB 3.11 ▼		
SMB security	Default ▼		
Hostname/IP	192.168.1.116		
Connect as	<input type="radio"/> Guest <input checked="" type="radio"/> Registered user		
User	sns		
Password	...		
Share	MediaBackup ▼	<div style="display: inline-block; border: 1px solid #007bff; background-color: #007bff; color: white; padding: 2px 10px; cursor: pointer;">REFRESH</div>	

CANCEL

ADD

Connection name - Enter a descriptive name for the remote connection.

SMB protocol - Uses SMB 2.1 by default, since not all target systems may support newer versions. The drop-down menu allows for 2, 2.1, 3, 3.02, and 3.11. If connecting another EVO as a remote target, 3.11 is generally recommended.

SMB security - Default (NTLMv2) is acceptable for most target systems, though security can be lowered or have signing enforced if the target system requires it.

Hostname/IP - Enter the name or IP address of the remote SMB server.

Connect as - Connect as Guest (no authentication) or Registered user, entering the username and password for a user on the remote file system.

User - Enter the remote user name. Note that the domain can be escaped by prepending "evo" to the user name if needed.

Password - Enter the remote user's password.

Refresh - Click to view the list of shares presented by the remote file system available to the user for mounting.

Select the intended share and click **Add**. Click an existing share to change its offline/online status, or to remove the connection completely.

11 | Recycle Bin

EVO shares include recycle bin functionality by default for content deleted over the SMB protocol. The retention time for deleted files is set at the [Advanced](#) page.

This page shows recycled contents for the share selected in the dropdown menu. Navigate as needed to select and then restore or permanently delete content.

Recycle Bin

media

	Name	Date modified	Date deleted	Kind
<input type="checkbox"/>	testavi.avi	May-22-2010 21:46	Jul-25-2022 17:51	File
<input checked="" type="checkbox"/>	testmov.mov	Feb-01-2017 04:37	Jul-25-2022 17:51	File
<input checked="" type="checkbox"/>	testmp4.mp4	Jul-17-2021 02:51	Jul-25-2022 17:51	File
<input type="checkbox"/>	Untitled 2.fcpbundle	Jul-25-2022 17:31	Jul-25-2022 17:31	Folder

2 items selected

RESTORE

PERMANENTLY DELETE

Select the item(s) you'd like to restore (undelete) or permanently delete from the system.

Recycle Bin

Media

	Name	Date modified	Date deleted	Kind	Size
<input type="checkbox"/>	document.rtf	Jul-25-2022 17:15	Jul-25-2022 17:15	File	371 B

Log

Click the three dots to find the link to the File Navigator & Recycle Bin Log.

File Navigator & Recycle Bin Log

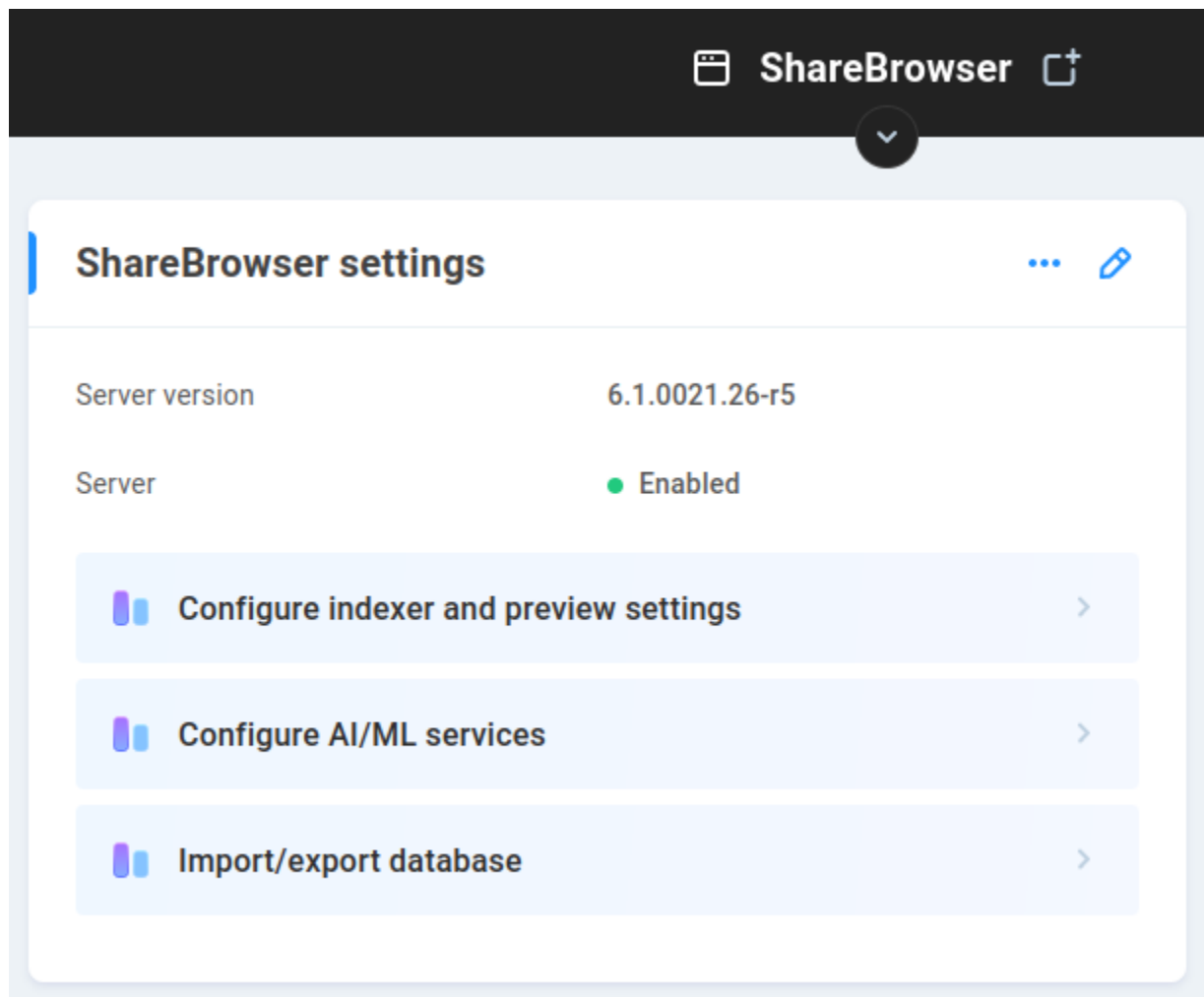
File Navigator & Recycle Bin log

Time stamp	NAS share	User	Action	File/Folder path
2022-06-15 01:00:08	Media	root	purge-old	testwav.wav
2022-06-15 01:00:08	Media	root	purge-old	2021/icon.tar
2022-06-15 01:00:08	Media	root	purge-old	2021/testgif.gif
2022-06-15 01:00:08	Media	root	purge-old	2021/testmp3.mp3
2022-06-15 01:00:08	Media	root	purge-old	2021/testmp4.mp4
2022-06-15 01:00:09	Media	root	purge-old	2021
2022-06-15 01:00:09	Media	root	purge-old	testmkv.mkv
2022-06-15 01:00:09	Media	root	purge-old	testpng.png
2022-07-25 17:41:35	Media	admin	purge	document.rtf
2022-07-25 17:41:38	Media	admin	restore	foo

This log will reflect manually purged or restored content from its recycle bin, as well as purge operations that take place according to the retention time defined at the [Advanced](#) page.

Warning: The recycle functionality applies to content deleted over SMB. Other methods of modifying content (Slingshot, other protocols) will not use SMB, and will therefore not send content to the recycle bin.

12 | ShareBrowser



The ShareBrowser media management system is available as a component requiring initialization. If ShareBrowser use is intended and its menu is not presented when clicking ShareBrowser, see the [Initialization](#) section to start the ShareBrowser service.

ShareBrowser is not required for standard EVO operation, though it does provide for many additional features and added functionality. ShareBrowser requires Slingshot for automations, and both plugins are activated when ShareBrowser is enabled.

Configure indexer and preview settings - Links to the Slingshot > [Index/Proxy](#) tab where indexer behavior and proxy generation can be configured.

Configure AI/ML services - Links to the Slingshot > *Settings* tab, where Autotagging can be configured.

Import/export database - Links to the Support > *OS Data* tab, where databases can be imported/exported.

Note: ShareBrowser in this guide refers to the ShareBrowser server component that's included with EVO. For information about the ShareBrowser client and web applications, refer to the latest guide at <https://studio-network-solutions-sharebrowser-docs.readthedocs-hosted.com/en/latest/>

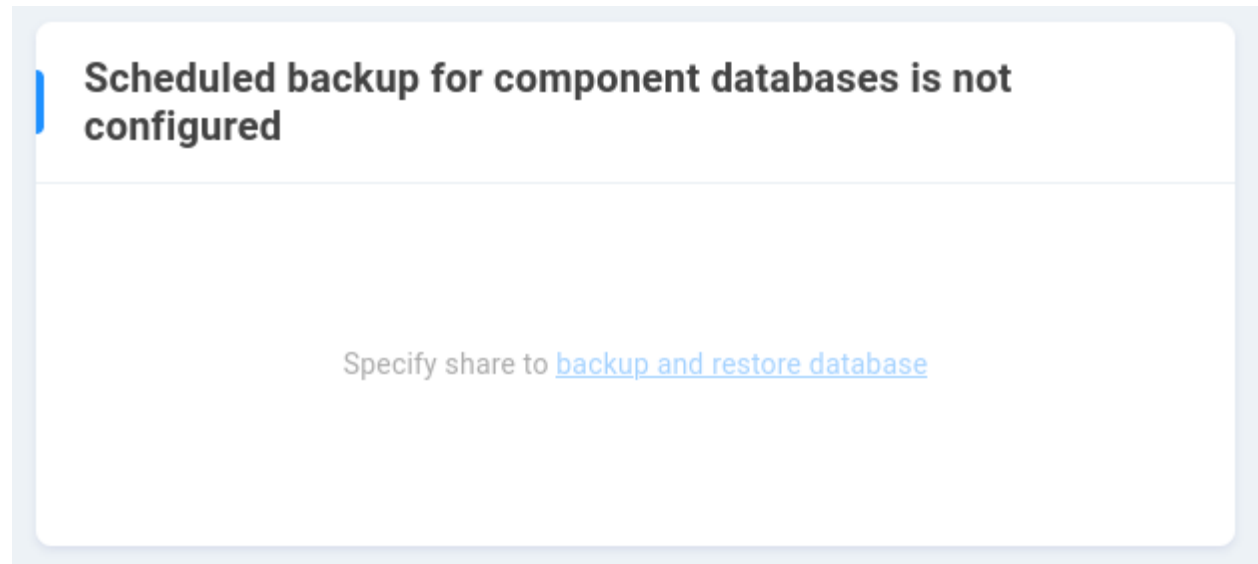
13 | Slingshot

Slingshot is the SNS automation engine for EVO that powers search, preview, replication, and more. It provides task management for repetitive file operations on EVO and other systems, including cloud storage. In addition to indexing and proxy generation, user-created Slingshot Automations can perform actions on schedule, and Replication Jobs can sync, copy, and back up to and from remote SMB or cloud targets.

Slingshot is available as a component requiring initialization, and is not required for standard EVO operation, though it does provide for many additional features and added functionality, including *ShareBrowser*.

13.1 Initialization

Components are often started as a convenience during commissioning; however, there may be instances in which ShareBrowser/Slingshot are not initialized. If components are not initialized, clicking ShareBrowser or Slingshot in the interface will return “Scheduled backup for component databases is not configured”



Once configured, EVO will automatically generate backups of the ShareBrowser and Slingshot database. This requires allocation of some storage (typically under 1 GB, depending on database and retention policy). Click to specify share for backup and restore of the database.

Locate the *Component databases* card at the Support page.

Component databases ...

Share to backup and restore database	
Path to backup and restore database	EVO-Database-Backups
Schedule	every day at 00:00
Delete backups	after 4 weeks

Click to edit and select a share to store database backups. This is often a share for which only an administrator or secondary administrator is granted permission (typically named “sys-management”).

Edit backup settings



Share to backup and restore database	sys-management ▼	
Path to backup and restore database	EVO-Database-Backups ▼	
	Day(s) of week	Sunday, M... ▼
Schedule	Hour	00 ▼
	Minute	00 ▼
Delete backups	after 4 weeks ▼	

CANCEL

SAVE

Save and click the Slingshot menu item again to Initialize ShareBrowser Server and Slingshot.

Initialize ShareBrowser Server and Slingshot

Please choose a data location to initialize ShareBrowser Server and Slingshot. We recommend choosing a reserved share that has at least 200 GiB free space.

Data location

sys-reserved



START

Initializing requires a dedicated system share for the active automation engine. The *share* needs to be in the Reserved permission mode, recommended with at least 200 GiB available for system use.

If an existing database is to be restored, the previously exported backup may be uploaded or an existing backup on EVO may be selected. Click the dots at the Component Databases card to import an existing database.

Component databases

Share to backup and restore database

sys-management

Path to backup and restore database

EVO-Database-Backups

Schedule

every day at 00:00

Delete backups

after 4 weeks

...

Add to Home

Export Slingshot database

Export ShareBrowser database

Import Slingshot database

Import ShareBrowser database

Select “Upload file” to drag and drop or browse for the database backup file on your workstation, or select “Use restore location” to import from an existing backup location on EVO.

Import ShareBrowser database

×

Upload file

Drag & drop database file here

CHOOSE FILE

Use restore location

ShareBrowser_Server_DB_SupportEVO_20230111101224.sql

▼

CANCEL

IMPORT

Tip: If there’s ever a need to deinitialize components, the option is found at the #/master-reset page.

13.2 Replications

Slingshot

⌵

⌵

⌵

REPLICATIONS

INDEX/PROXY

AUTOMATIONS

SETTINGS

Replication jobs

Job	Status	Source	Destination	Schedule	Last job
nightly-backup	Idle	evo:/media	evo:/backup	Daily	08/02/2022 19:50

Rows per page: 10

← 1 →

1-1 of 1

Schedule replication and/or synchronization operations between volumes or directories. Configure any needed external

targets such as Amazon S3 or remote SMB shares, and then click the plus sign to set up a replication job.

Configure a job to copy or sync all possible new/changed folders and files from the selected source to the selected destination. Objects with the same path/name will be overwritten at the destination. File permissions, metadata, and other extended attributes may not be applicable for backup. Cloud-based transfers will incur additional charges by your cloud storage provider. Bi-directional job schemes are not supported.

Copy/Replace vs Sync/Remove

- Choose “Copy/Replace” if objects removed from source location should NOT be automatically removed from destination location.
- Choose “Sync/Remove” if objects removed from source location should be automatically removed from destination location. Use sync with caution to avoid accidentally deleting data at the destination!

More information is found in the Slingshot Replication (Sync/Copy) best practices and configuration guide: <https://support.studionetworksolutions.com/hc/en-us/articles/360027021212-Replication-Sync-Copy-best-practices>

Create new job



Job name

backup

Method

Copy/Replace



Source

This EVO (Share)



Share

Media



Path

BROWSE

Destination

Remote SMB



Share

MediaBackup



Path

BROWSE

Scheduling controls

Frequency

Daily



Begin

06/07/2022



CANCEL

SAVE

Job name - Give the job a descriptive name. Note that spaces and other special characters are not allowed.

Method - The options presented here are Copy/Replace or Sync/Remove. Replication jobs default to Copy/Replace,

which means content added to the source will be copied to the destination, and any content that's been deleted from the source since the job was last run is left in place on the destination. If Sync/Remove is chosen, content added to the source is added to the destination, and if content has been deleted from the source since the last job was run, it will also be deleted from the destination.

Source - Select the source to be replicated. The default selection is for a local EVO share. It's also possible to replicate a complete EVO logical disk, another SMB or FTP target, or a connected cloud location.

Share (or Logical Disk/Alias) - This field changes according to the Source selection. Select the share, disk or alias to use as a source for replication.

Path - Enter or BROWSE to a specific directory on the above selection if needed. If left blank, replication will work at the root (top level folder) of the above selection.

Destination - Select the target destination to which the source selection should be replicated.

Share (or Alias) - This field changes according to the Destination selection. Select the share or alias to use as a destination for the replication target.

Path - Enter or BROWSE to a specific directory on the above selection if needed. If left blank, replication will work at the root (top level folder) of the above selection.

Scheduling controls

Frequency

Daily

☒ Begin
 06/07/2022

☒ End
 06/07/2022

Start at:
 Monday
 01:00

☒ End at:
 Monday
 02:00

Recipient list is not specified. You can configure email settings on the [Alerts](#) page.

☐ Email job summary to recipients

☐ Email on job start

☐ Email on job pause/resume

Scheduling controls - Set the frequency for the replication job. This can be a manual job run on-demand, or a scheduled operation to run once or recurring at a defined interval. Select the Begin and End dates, and then choose the start

day/time for the operation to run. The job will end on its own unless an End time is specifically defined. If the job is still running at that time, it will be paused until the next start interval.

Configure email settings on the [Alerts](#) page. If SMTP is configured, email notifications can be sent for job summary, job start, and changes to the job status (pause/resume).

Advanced settings

Create new job



Advanced settings



Filtering



Only transfer files older than

0



days



Include files matching pattern



Exclude files matching pattern



Exclude and include patterns are case-sensitive

Include/Exclude priority

Include first



Include EVO recycle bin (if present at source)

ShareBrowser



Include ShareBrowser metadata



Include ShareBrowser media proxy

Verification



Skip files with a modified time newer than the source file



Detect file modification based on time/size /content rather than time/size



Verify file integrity after transfer...

Report

Only differences

CANCEL

SAVE

Filtering - Include logic for transferring files based on age, or configure (golang) regex pattern matches for inclusion/exclusion behavior. Choose whether or not to include the recycle bin (if present at source).

ShareBrowser - If included, Slingshot can ensure ShareBrowser metadata and/or proxy links are preserved. These metadata are not replicated with the file; rather, replicated content is reflected in the ShareBrowser database, allowing the database to be searched and or previewed even when the original files have been replicated to another system and may no longer be directly accessible.

Verification - By default, replication jobs will copy any file that is not yet found at the destination, or any file is newer at the source than at the destination. Files at the destination that are newer than the unchanged source files (previously replicated) will be ignored.

Skip files with a modified time newer than the source file - Enabled by default to only update what's needed. This can be disabled to ensure *all* files are replicated, overwriting any that already exist at the destination.

Detect file modification based on time/size/content rather than time/size - Disabled by default. While rare, it is possible for differing source and destination files to share time/size statistics. Enabling additional detection for content modification can protect against false matches; note that the added processing will impact replication time.

Verify file integrity after transfer... - Disabled by default. The default calculations for data comparison are sufficient in most scenarios, while some environments may require bit by bit verification. The added calculations will greatly increase the time required for the replication job to run, though this does provide a record of proof that verification was completed. The *Report* value can be set to show *Only differences*, or *All files*.

Job handling

☒ Replicate files in parallel (serial if disabled)

☐ Save logs at destination

Log level

Standard

▼

Configure a job to copy or sync all possible new/changed folders and files from the selected source to the selected destination. Objects with the same path/name will be overwritten at the destination. File permissions, metadata, and other extended attributes may not be applicable for backup. Cloud-based transfers will incur additional charges by your cloud storage provider. Bi-directional job schemes are not supported.

Copy/Replace vs Sync/Remove

Choose "Copy/Replace" if objects removed from source location should NOT be automatically removed from destination location.

Choose "Sync/Remove" if objects removed from source location should be automatically removed from destination location. Use sync with caution to avoid accidentally deleting data at the destination!

[CANCEL](#)[SAVE](#)

Job handling - Files are replicated in parallel by default (multiple actions). This can be changed to serial to ensure single-stream writes. A Transfer Summary is automatically provided at job's end, while it's also possible to save more detailed logs for the job at the destination.

Log level - Replication jobs will provide a standard level of logging to EVO logs by default, or at the destination if configured. This can be set to No logging or Full logging for the most verbose output.

Warning: Slingshot replication jobs do not consider ACLs (file-level permissions), so user visibility and access permission for replicated content needs to be managed at the target destination.

Click on an existing Replication job to expose/hide options.

The screenshot shows the Slingshot application interface. At the top, there's a navigation bar with 'Slingshot' and a user profile 'admin'. Below this is a tabbed interface with 'REPLICATIONS', 'INDEX/PROXY', 'AUTOMATIONS', and 'SETTINGS'. The 'REPLICATIONS' tab is active, showing a table of replication jobs. The first job is 'nightly-backup' with status 'Idle', source 'evo:/media', destination 'evo:/backup', and a daily schedule. The last job was on 08/02/2022 at 19:50. A right-hand sidebar for the 'nightly-backup' job provides actions: 'DISABLE' (with a red stop icon), 'EDIT' (with a pencil icon), 'RUN NOW' (with a lightning bolt icon), 'SHOW LAST JOB SUMMARY' (with an eye icon), 'SHOW INSTANCES' (with an eye icon), and 'DELETE' (with a trash icon).

Disable/Enable - Toggle the status for the replication job

Edit - Make changes to a disabled replication job (enabled jobs may not be edited)

Run Now - Ignore schedule and run on demand

Show Last Job Summary - View summary of the last iteration of the selected replication job.

Show Instances - View more detailed information according to Instances > Processed files > Processed tasks

13.3 Index/Proxy

The screenshot shows the Slingshot application interface with the 'INDEX/PROXY' tab selected. It displays four configuration cards, each with a title, a description, and a value, along with edit and delete icons.

- Indexer name**: Name is set to 'EVO'.
- Multiple EVO environment**: Push metadata to a central EVO is set to 'Disabled'.
- Proxy destination**: Share to store proxy is set to 'proxies'.
- Preview/Proxy formats**: ShareBrowser preview format is set to 'Media proxy' and Edit-ready proxy format is set to 'Edit Proxy'.

13.3.1 Indexer name

The indexer name generally reflects the host name. Setting a custom indexer can be especially useful in a multiple EVO environment. Click the pencil to edit the name.

13.3.2 Multiple EVO environment

ShareBrowser clients will need to log in to a ShareBrowser database, and if multiple EVOs exist in the environment, each one could have its own database, so it's useful to select one EVO to store the primary database, and configure other EVOs to index to that central server. Click the pencil and then toggle "Push metadata to a central EVO" on, and new options will appear.

HTTPS - All EVOs involved will need to have https configured.

Central EVO IP address - Enter the IP address for the central EVO that holds the primary ShareBrowser database.

Port - This is 80 for http and 443 for https by default, though a custom port can be specified.

13.3.3 Proxy destination

The Slingshot engine can be configured to automatically create proxy files from original media. To configure proxy generation, a share needs to be designated to house the created proxies. This share is typically named something like "Proxies" and is for use by the ShareBrowser database only, so no users should need permissions.

Share to store proxy - Select a share from the dropdown menu to dedicate to proxy storage.

Relative path - Specify a folder if needed; otherwise, the root of the share will be used.

13.3.4 Preview/Proxy formats

Depending on file type, the proxy output could be a thumbnail, audio, or video preview. The default behavior should ensure each supported file is transcoded according to its type, and this section can be used to specify global formats for preview/proxy types. This could be used to ensure only thumbnails are generated, for example, rather than thumbnails and video previews. The default ShareBrowser preview (what's viewed in ShareBrowser without direct access to the volume) selection is "Media proxy", which is a lightweight (H.264) version of the original file. The "Edit-ready proxy format" is Pro Res by default, which is generally still going to be smaller than the original file, while providing more options for offline/proxy editing than a standard ShareBrowser preview proxy would.

ShareBrowser preview format - Media proxy by default (H.264). Use the dropdown menu to select an alternative if needed.

Edit-ready proxy format - Edit proxy by default (Apple Pro Res). Use the dropdown menu to select an alternative if needed.

13.3.5 CPU limit

CPU limit

Preview CPU load limit

25%

Edit CPU load limit

25%

EVO is designed with editors in mind, and the primary goal is to ensure users have the resources available to work simultaneously with shared media, while EVO may also be tasked with numerous automation jobs. One goal is to find a balance between human users and automated jobs, often configured to run after-hours when users are not working on the system. To ensure users have the needed resources available, the processing power dedicated to automations such as indexing, proxy generation, and replications is limited to 25% by default. If resource management and scheduling is considered, these values can be adjusted to tune the task processing specifically according to the needs of the environment.

Preview CPU load limit - By default, 25% CPU is allocated for generation of ShareBrowser previews of indexed content. This can alternatively be set to 50% or 75%.

Edit CPU load limit - By default, 25% CPU is allocated for generation of edit-ready proxies of indexed content. This can alternatively be set to 50% or 75%.

13.3.6 Enable proxy generation

Index and Proxy generation

<input type="checkbox"/> Share name	Logical disk	ShareBrowser preview proxies	Edit-ready proxies
<input type="checkbox"/> media	POOL-A/LD1	<div>Enabled</div>	<div>Manual</div>
<input type="checkbox"/> projects	POOL-A/LD1	<div>Disabled</div>	<div>Disabled</div>
<input type="checkbox"/> sys-management	POOL-A/LD1	<div>Disabled</div>	<div>Disabled</div>
<input type="checkbox"/> sys-previews	POOL-A/LD1	<div>Disabled</div>	<div>Disabled</div>

The list of shares available for proxy generation should be automatically populated with any shares for which proxy generation is possible. Once storage has been configured to contain the proxy output, shares can be configured for automatic preview and/or edit-ready proxy generation.

Select a share to bring up its configuration options.

Enable ShareBrowser Preview Proxies - Click to enable. The light should turn red, with the option to again disable.

Enable Edit-ready Proxies - Click to enable. The light should turn red, with the option to again disable.

Exclude Extensions - Define any file types for which you would not like proxy generation to be attempted. Enter an extension such as “.mp4” and click ADD and then SAVE to instruct Slingshot to ignore all files with the matching

extension.

Exclude Folders - Specify or browse to any folder(s) you'd like Slingshot to ignore for proxy generation and click ADD and SAVE.

13.3.7 Schedule

Schedule

Pause all automatic proxy creation during ● **Enabled**
these hours

Pause time 07:00

Resume time 22:00

Generate on-demand proxies from ● **Disabled**
ShareBrowser users during these hours

In order to ensure users have the resources they need, all proxy generation is paused during the day by default (7:00 AM to 10:00 PM), and ShareBrowser users are not allowed to request proxies on demand. Click the pencil to edit these choices.

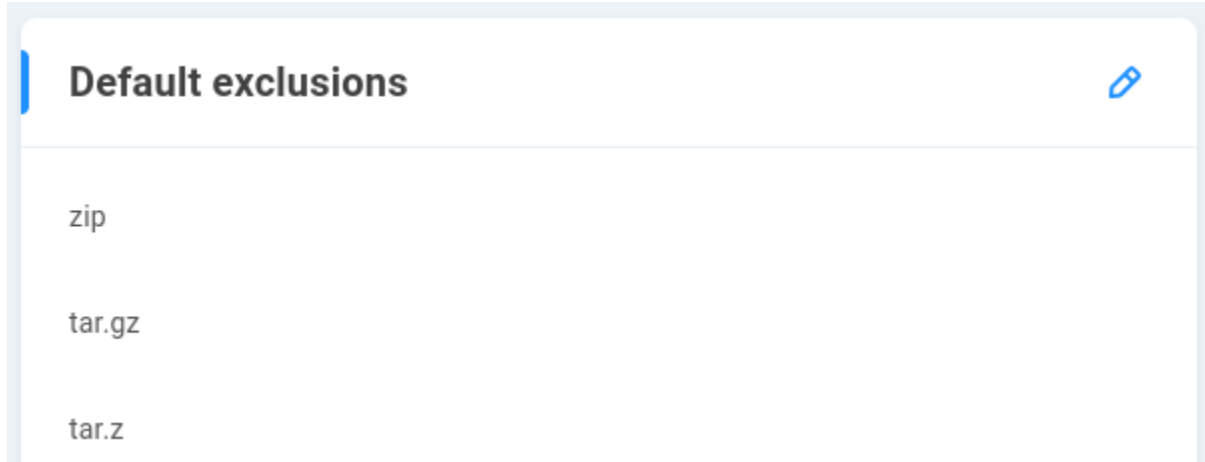
Pause all automatic proxy creation during these hours - On by default. Disabling means Slingshot will work around the clock if needed, and users may generate proxies on demand.

Pause time - With pause enabled, specify the time that the proxy generation queue should stop processing new items.

Resume time - With pause enabled, specify the time that proxy generation may resume.

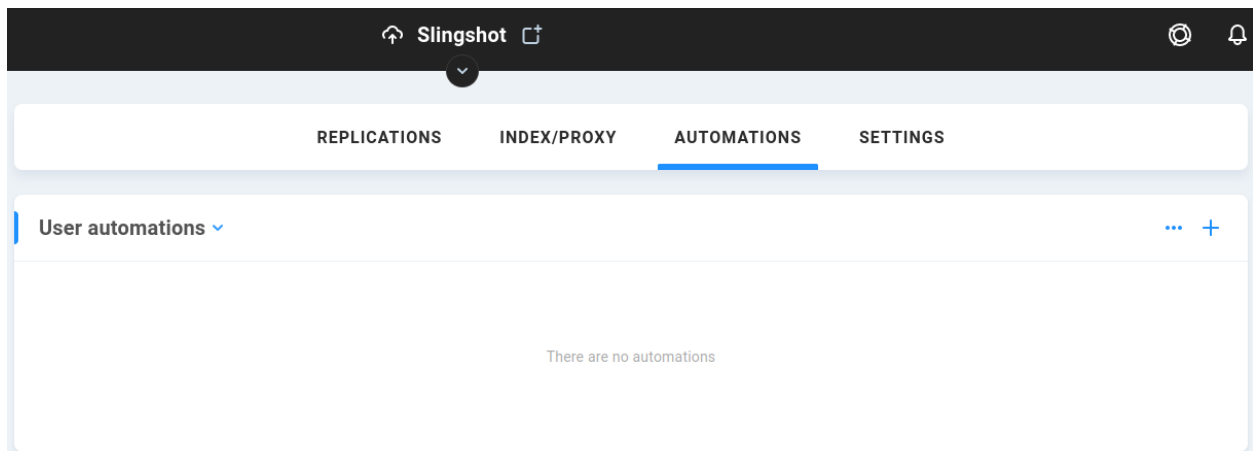
Generate on-demand proxies from ShareBrowser users during these hours - When enabled, allows users to make custom proxy generation requests even when Slingshot proxy generation is otherwise paused.

13.3.8 Default exclusions



Some file types are expectedly unsupported for proxy generation, and excluding them can increase efficiency for the automation tasks. For example, a video preview cannot be generated from a compressed .zip file, so excluding all zip files from consideration can save time. This list is pre-populated with some default file types that should be skipped by the transcode engine. Click the pencil to add or remove any extensions for exclusion.

13.4 Automations



This section exposes automations, which may be user-defined, indexing or proxy generation tasks, or AI/ML functions. Select the type from the dropdown menu to expose its options.

13.4.1 User automations

Custom tasks or series of tasks may be scheduled to run on specific folders, including file copies, moves, renames, transcodes, and more. On-demand user-specific and recurring global tasks can be defined to automate a workflow based on watch folders. Click the plus sign to create a custom folder-level automation.

Create new automation ✕

Automation name

Recipients

☐

Notify recipients upon completion of this automation

Recipient list is not specified. You can configure email settings on the [Alerts](#) page.

Share to watch

Folder to watch

BROWSE

Launch

☒ Scheduled

Frequency

1

hour

Start at

06/13/2022 12:00

Query

☒ By files extension(s)

Root of folder only

e.g. txt or * for all files

☐ Regular expression

e.g. \d+.*

CANCEL

SAVE

Automation name - Give your automation a descriptive name.

Recipients - If SMTP is configured, email notifications can be sent informing of automation completion.

Share to watch - Select the share on which the automation action should be taken.

Folder to watch - Specify a watchfolder for the automation task. If left blank, the root of the share will be used. Note that this is not recursive, so the selected folder's subdirectories are not considered by the automation.

Launch - If the automation should run on a defined interval, choose Scheduled (default) and select the frequency (minute, hour, day) and start time for the automation.

Query - Root of folder only. Select whether the automation should query By files extension(s) (e.g. txt or * for all files) or Regular expression (e.g. d+.*).

Note: Preservation of filesystem hierarchy gets complex very quickly for automations, especially when source and destination file structures and permissions may differ. Custom user automations are therefore run on a single folder's root level.

Save the automation when done and then click it again and choose EDIT AUTOMATION to add your task(s). Tasks can be stacked, so it's possible to perform many chained actions within the same automation.

Warning: Automations have the power to change data. Always practice the automation logic on test files/folders before putting an automation into production.

Edit automation

Share to watch

Folder to watch

Launch

Media

BROWSE

Scheduled

Frequency

1

hour

Start at

06/13/2022 12:00

Query

Root of folder only

By files extension(s)

*

Regular expression

e.g. \d+.*

Tasks

There are no tasks

+ CREATE TASK

CANCEL

SAVE

Click Create Task to expose the options.

Add task



[Edit automation](#) → [Add task](#)

Task

Move to today's processed folder



Source

Original file/folder



Log level

No logging



A folder named 'automation ID + "-" + yyyy-mm-dd' is automatically created in the watched folder the first time this task fires on a new day.

CANCEL

SAVE

Task - A dropdown allows for selection from the list: Copy, Transcode, Delete, Move to today's processed folder, Append automation data to file name, AI/ML Autotagging

The remaining settings change depending on task selection.

13.4.1.1 Copy

Add task ×

[Edit automation](#) → [Add task](#)

Task	Copy ▼
Source	Original file/folder ▼
Log level	No logging ▼
Options	<div><input checked="" type="checkbox"/> Move</div> <div><input checked="" type="checkbox"/> Replace</div>
Scheme	Local ▼
User	<input type="text"/>
Share name	<input type="text"/> ▼
Relative path	<input type="text"/> BROWSE

Advanced settings ▼

CANCEL SAVE

Source - Select Original file/folder or previous task result to use the output from a previous task from the same automation job.

Log level - Choose from No logging (default), Standard or Full logging.

Options - Move will move the file rather than create a copy. Replace will overwrite an existing instance of the output.

Scheme - Select Local (default) for a local file system operation, or Alias to select from an existing alias.

User/Alias - If the automation will work with a target requiring authentication, enter the relevant alias or user owner of the automation. This field can be left blank otherwise.

Relative path - Define or browse to the intended source.

Advanced settings


Create folder - When Create target directory is enabled (default), a new directory will be created at the destination if needed.

Speed limit - Enable to define a transfer speed limit in KB/s.

13.4.1.2 Transcode

Add task ×

[Edit automation](#) → [Add task](#)

Task	Transcode ▼
Source	Original file/folder ▼
Log level	No logging ▼
Preset	Default ▼ 
Reaction on unknown streams	Fail ▼
Share name	▼
Destination path	<input type="text"/> BROWSE

CANCEL
SAVE

Source - Select Original file/folder or previous task result to use the output from a previous task from the same automation job.

Log level - Choose from No logging (default), Standard or Full logging.

Preset - Default will perform the default transcode for each file type (preview proxy, thumbnail, etc.), and more actions can be chosen from the list, including differing thumbnail sizes, Media proxy, Edit proxy, AI/ML Autotagging, or Audio proxy.

Reaction on unknown streams - If the task encounters an issue, the behavior can be set to Fail (default), Ignore, or Copy. If set to Fail, several attempts are made. If set to Ignore, the problematic file is skipped. If set to Copy, the original is copied (rather than transcoded).

Share name - Specify or browse to the share on which the task is to take place.

Destination path - Define or browse to the destination directory for the transcode output.

13.4.1.3 Delete

Add task ×

[Edit automation](#) → [Add task](#)

Task	Delete ▼
Source	Original file/folder ▼
Log level	No logging ▼

CANCEL SAVE

The Delete option can be useful for removing original files once automation tasks have taken place.

Source - Select Original file/folder or previous task result to use the output from a previous task from the same automation job.

Log level - Choose from No logging (default), Standard or Full logging.

13.4.1.4 Move to today's processed folder

Add task ×

[Edit automation](#) → [Add task](#)

Task	Move to today's processed folder ▼
Source	Original file/folder ▼
Log level	No logging ▼

A folder named 'automation ID + "-" + yyyy-mm-dd' is automatically created in the watched folder the first time this task fires on a new day.

CANCEL SAVE

This option can be useful for stacked tasks and can prevent unintended recursion for the working directory.

Source - Select Original file/folder or previous task result to use the output from a previous task from the same automation job.

Log level - Choose from No logging (default), Standard or Full logging. A folder named 'automation ID + "-" + yyyy-mm-dd' is automatically created in the watched folder the first time this task fires on a new day.

13.4.1.5 Append automation data to file name

Add task ×

[Edit automation](#) → [Add task](#)

Task	Append automation data to file name ▼
Source	Original file/folder ▼
Log level	No logging ▼

Append automation ID + "-" + yyyy-mm-dd-hh-mm-ss to file name

CANCEL SAVE

This option can be useful as an intermediary step in an automation.

Source - Select Original file/folder or previous task result to use the output from a previous task from the same automation job.

Log level - Choose from No logging (default), Standard or Full logging. Append automation ID + '-' + yyyy-mm-dd-hh-mm-ss to file name

13.4.1.6 AI/ML Autotagging

Add task



[Edit automation](#) → [Add task](#)

Task	AI/ML Autotagging	▼
Source	Original file/folder	▼
Log level	No logging	▼
Access Code		

CANCEL

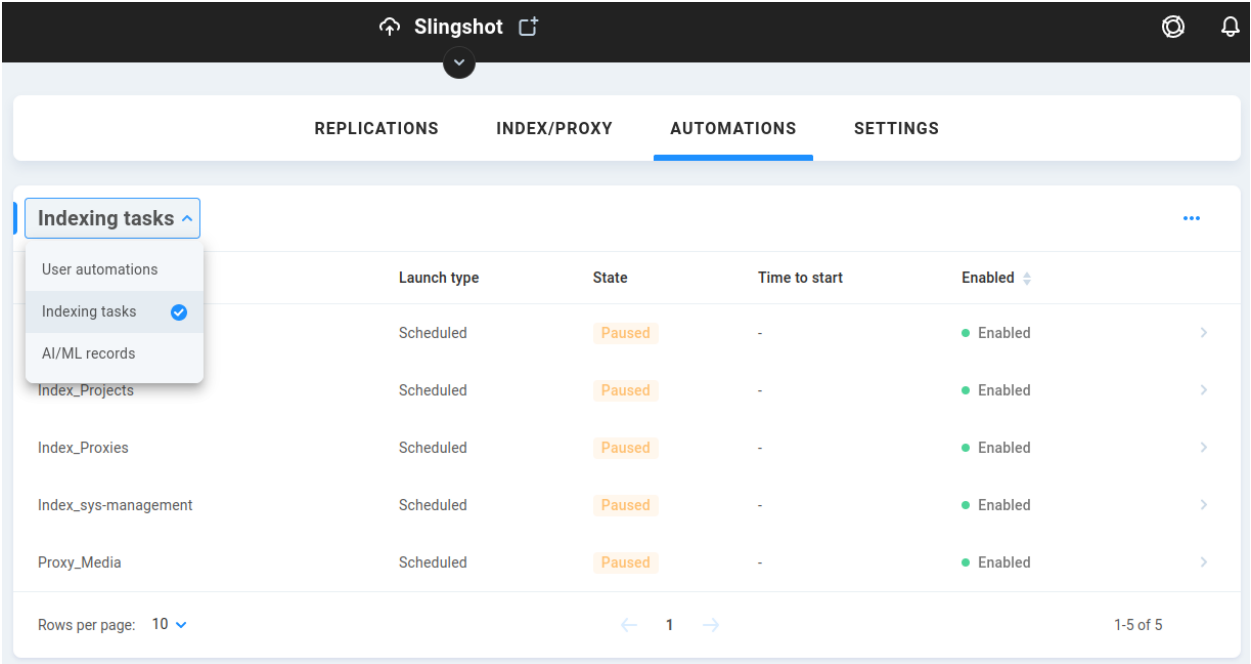
SAVE

Source - Select Original file/folder or previous task result to use the output from a previous task from the same automation job.

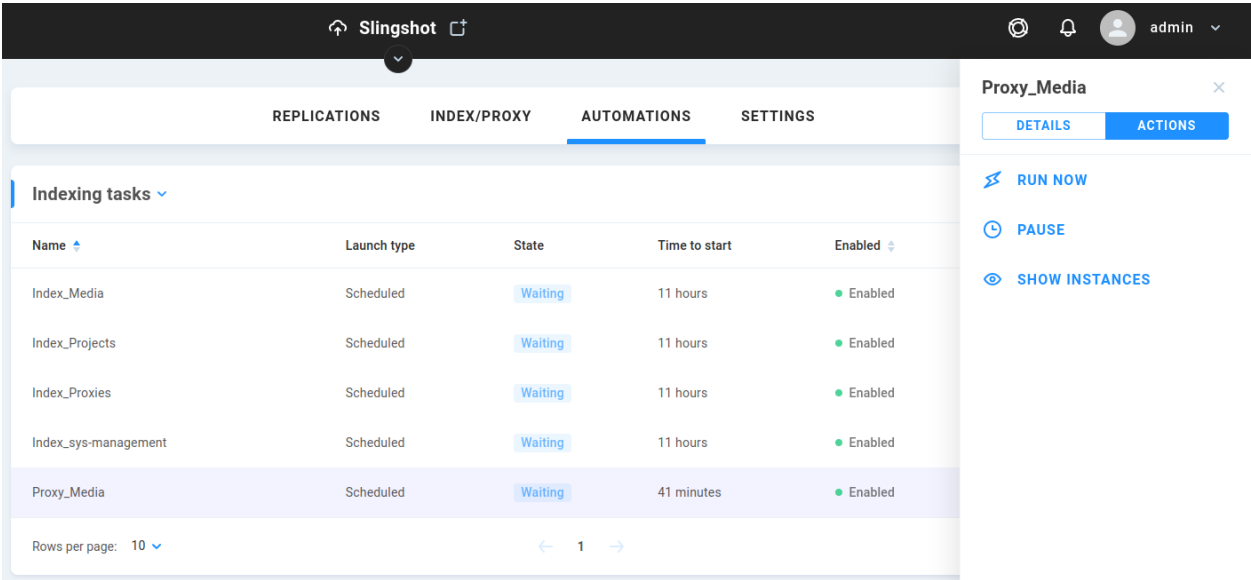
Log level - Choose from No logging (default), Standard or Full logging.

Access Code - Optionally define a code to authorize use of the cloud AI service.

13.4.2 Indexing tasks



Selecting indexing tasks from the dropdown menu shows scheduled automations for indexing and proxy generation. Volumes are automatically indexed at 10:00 PM daily by default (the schedule can be adjusted in the workstation ShareBrowser Admin application). The proxy generation service runs hourly, based on what’s already been indexed. Click on an existing index/proxy automation to bring up its ACTIONS and DETAILS.



Run Now/Stop Run - When the job is idle, the option is presented to run it manually. When running, the option to stop it is presented.

Pause - A job can be put on hold without being stopped altogether, for example to free up resources temporarily.

Show Instances - This provides details about the active/previous job, including dynamically updating columns for estimated file counts (Total, Succeed, Failed, Unprocessed). Clicking on a row brings up Processed files, where again

clicking on an ID row brings up Processed tasks.

Note: When configured, the proxy generation service runs hourly based on what's been indexed. This is different from an on-demand (ad hoc) proxy request by a ShareBrowser user, in which case the file is indexed and transcoded (if configured and allowed).

Click an automation to bring up its ACTIONS and DETAILS.

The screenshot shows the Slingshot web interface. At the top, there's a header with the Slingshot logo and a user profile for 'admin'. Below the header, there are four tabs: REPLICATIONS, INDEX/PROXY, AUTOMATIONS (which is currently selected), and SETTINGS. Under the AUTOMATIONS tab, there's a section titled 'User automations' with a dropdown arrow. Below this is a table with the following columns: Name, Launch type, State, Time to start, and Enabled. There is one row in the table with the name 'example', launch type 'Scheduled', state 'Waiting', time to start '26 minutes', and enabled status 'Enabled'. Below the table, there's a 'Rows per page' dropdown set to '10' and pagination controls showing '1' page. To the right of the table, there's a sidebar for the selected automation 'example'. This sidebar has two tabs: DETAILS and ACTIONS (which is selected). Under the ACTIONS tab, there are several buttons: a red circle with a slash for 'DISABLE', a blue link for 'EDIT AUTOMATION', a blue lightning bolt for 'RUN NOW', a blue clock for 'PAUSE', a blue eye for 'SHOW INSTANCES', and a red trash can for 'DELETE'.

Enable/Disable - Click to change the status for the automation.

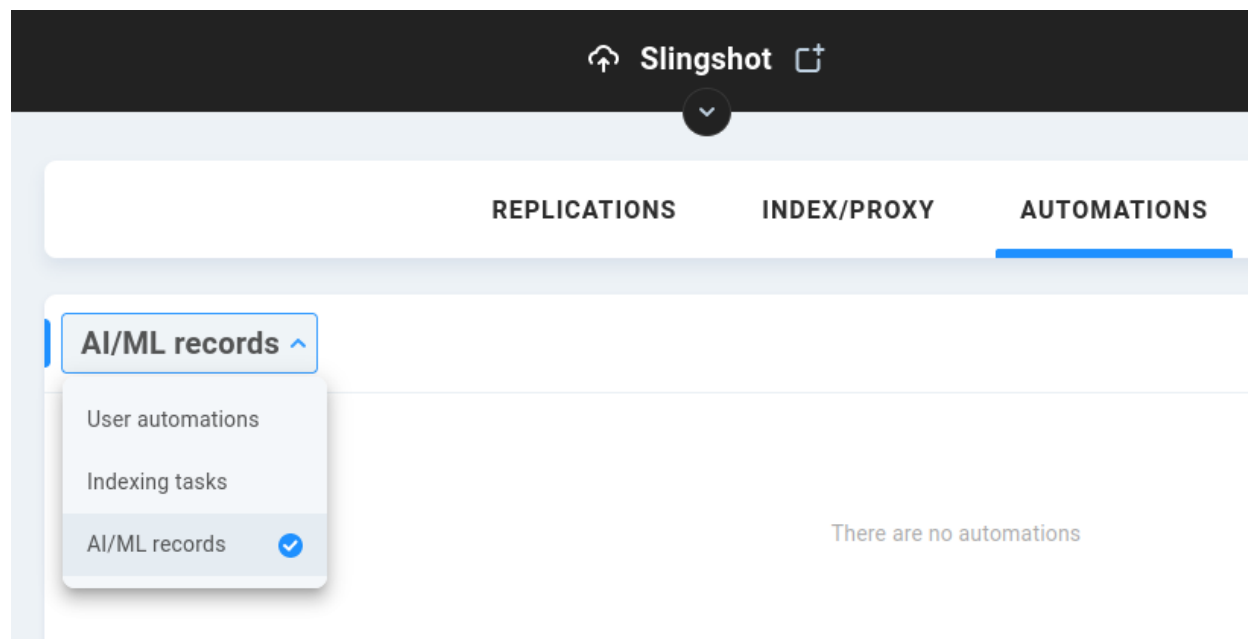
Edit Automation - Make changes to an existing automation.

Run Now/Stop Run - When the job is idle, the option is presented to run it manually. When running, the option to stop it is presented.

Pause - A job can be put on hold without being stopped altogether, for example to free up resources temporarily.

Show Instances - This provides details about the active/previous job, including dynamically updating columns for estimated file counts (Total, Succeed, Failed, Unprocessed). Clicking on a row brings up Processed files, where again clicking on an ID row brings up Processed tasks.

13.4.3 AI/ML Records



If configured for cloud-based autotagging, details from those user-requested automations are displayed here.

13.5 Settings

13.5.1 Remote Shares -

See *Remote Shares*

13.5.2 Aliases

Aliases ... +				
Name	URL	Created	Status	Volume
dropbox	dropbox/	06/13/2022		AC26451A-1AEB-413B-A3DD-2AA2D274B617
ftp	ftp://192.168.1.242/ftp	06/13/2022		

Aliases store credentials to define a location used by automations, so they can correctly authenticate to various targets when run. Consider whether the alias should be global or personal (per-user). Global aliases are generally created by the EVO admin user. Personal aliases are created by the alias owner after logging in to EVO's web interface as that user (rather than admin), and are available only to that user.

Name - Enter a name for the alias to distinguish it from any other aliases.

Schema - Select the authentication type: SMB, FTP, Amazon S3, Azure, Dropbox, or Google Cloud Storage

The remaining settings change depending on schema selection.

Local:

Create alias ×

Name

Schema

Local ▼

User

Share name

▼

Relative path

BROWSE

Private

☒

CANCEL

SAVE

User - Define a user that has access to the share.

Share name - Specify or browse to the share needing authentication.

Relative path - Define or browse to the intended source.

Private - If logged in as the alias owner, should be enabled (default). Personal aliases define transport destinations for a specific ShareBrowser user, and can be invoked via API or GUI. If a user owns an alias, a context menu is added to their ShareBrowser Client, which appears when right-clicking files in the Desktop Client. Clicking this will copy the selected content to the location defined in the alias. See the ShareBrowser guide for more information: <https://studio-network-solutions-sharebrowser-docs.readthedocs-hosted.com/en/latest/>

13.5.2.1 SMB

Create alias ×

Name

Schema

SMB ▼

IP/hostname

e.g. 192.168.0.1

Share name

User

Password

Relative path

Private

☒

CANCEL

SAVE

This establishes a connection separate from a mount created at the [Shares](#) page. Existing Remote shares may also be used in automations, while there may be scenarios where a discrete SMB connection is preferred for an automation.

IP/hostname - Enter the address or name for the remote SMB server.

Share name - Define the path to the share

User - Enter a valid user name for the remote server

Password - Enter the user password

Relative path - Define the path to the destination on the share if needed.

Private - If logged in as the alias owner, this should be enabled (default). Personal aliases define transport destinations for a specific ShareBrowser user, and can be invoked via API or GUI. If a user owns an alias, a context menu is added to their ShareBrowser Client, which appears when right-clicking files in the Desktop Client. Clicking this will copy the selected content to the location defined in the alias. See the ShareBrowser guide for more information.

13.5.2.2 FTP

Create alias ×

Name

Schema

FTP ▼

IP/hostname

e.g. 192.168.0.1

User dir is root

☐

Passive

☒

User

Password

Relative path

Private

☒

CANCEL

SAVE

IP/hostname - Enter the address or name for the remote SMB server.

User dir is root - Disabled by default. Enable if needed (if user directory is root).

Passive - Enabled by default, which can help prevent firewall interference. Disable if the FTP server denies PASV.

User - Enter a valid user name for the remote server

Password - Enter the user password

Relative path - Define the path to the destination on the share if needed.

Private - If logged in as the alias owner, this should be enabled (default). Personal aliases define transport destinations for a specific ShareBrowser user, and can be invoked via API or GUI. If a user owns an alias, a context menu is added to their ShareBrowser Client, which appears when right-clicking files in the Desktop Client. Clicking this will copy the selected content to the location defined in the alias. See the ShareBrowser guide for more information: <https://studio-network-solutions-sharebrowser-docs.readthedocs-hosted.com/en/latest/>

13.5.2.3 Amazon S3, Azure, Dropbox, and Google Cloud Storage

Create alias

×

Name

Schema

Amazon S3

▼

☒ Region

us-east-1 (default)

▼

☐ Custom host

e.g. 192.168.0.1

Bucket

AWS AccessKey

AWS SecretKey

Relative path

Private

☒

CANCEL

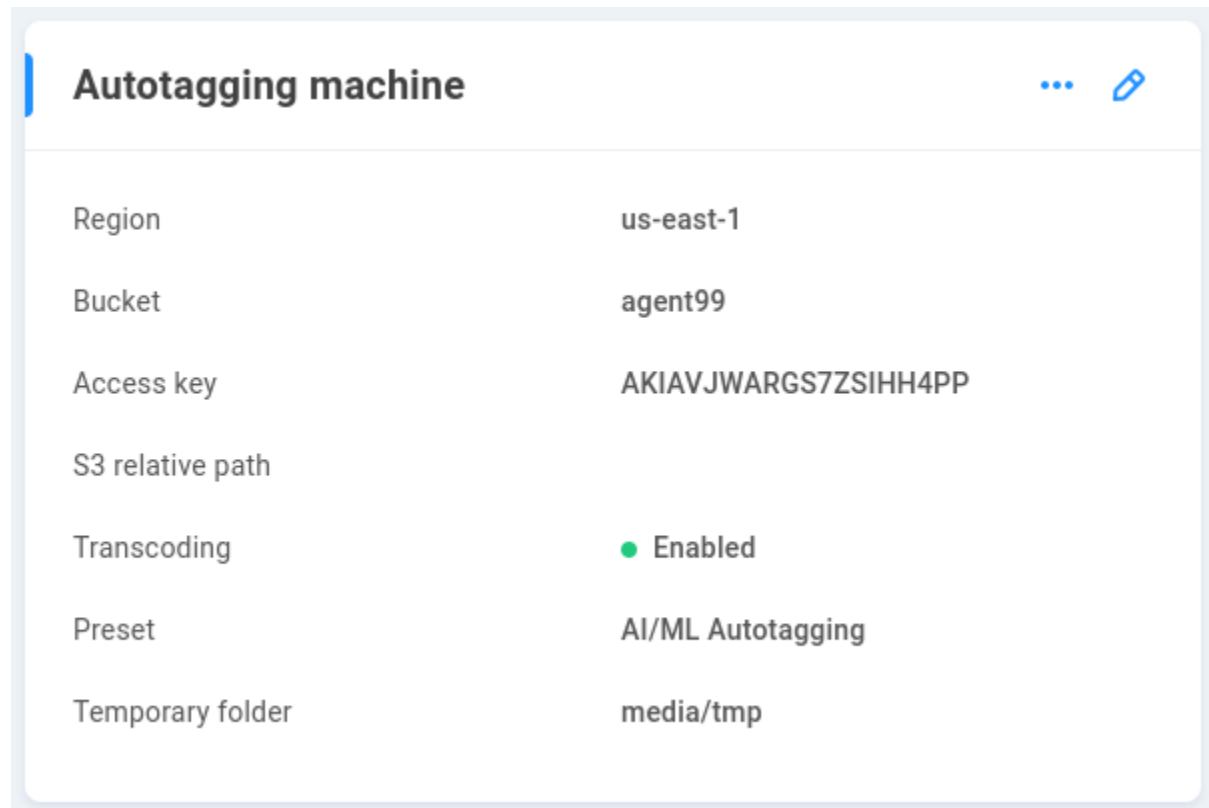
SAVE

See the Slingshot Replication (Sync/Copy) best practices and configuration guide at <https://support.studionetworksolutions.com/hc/en-us/articles/360027021212-Replication-Sync-Copy-best-practices>

Note: Some AWS services may region-specific. Check the AWS console to ensure your bucket is in a region that provides AI/ML functionality.

13.5.3 Autotagging machine

When artificial intelligence/machine learning services are configured, ShareBrowser users can upload media for machine analysis and automatic content tagging.



Autotagging machine	
Region	us-east-1
Bucket	agent99
Access key	AKIAVJWARGS7ZSIHH4PP
S3 relative path	
Transcoding	● Enabled
Preset	AI/ML Autotagging
Temporary folder	media/tmp

Prior to configuration on EVO, some other steps need to be taken to add automatic tagging using AI/ML services:

1. Create an AWS account with Amazon. Take a look at their billing costs for the features you intend to use.
2. Enable S3 and Rekognition services.
3. Create an IAM user with permissions for AmazonRekognitionFullAccess and AmazonS3FullAccess.
4. Create an S3 bucket and make sure that the created user has permissions to access this bucket.
5. Generate the access key (Access key ID and Secret Access Key) on the user's page of Amazon Services.

Region/Custom host - Select the AWS region for your bucket or enter the custom host information.

Bucket - Enter the S3 bucket name.

Access key - Enter the access key provided by AWS.

Secret key - Enter the secret key provided by AWS.

S3 relative path - Define a path if needed

Enable transcoding - By default, a temporary proxy of the original file is created for upload to Rekognition when a ShareBrowser user clicks *Analyze*. Sending a smaller version of the original file can substantially reduce bandwidth usage for the cloud service. The Preset determines the quality (and therefore, size) of the proxy that's generated. Higher-resolution proxies may yield more accurate tagging results at the cost of increased bandwidth. A temporary folder needs to be designated for proxy staging during the operation when this setting is enabled.

Preset - The AI/ML Autotagging preset is used by default, which is designed to be as lightweight as possible for metered connections, though it's possible to select from any available preset or click EDIT to change specific values for the selected preset.

Share name - If transcoding is enabled, select a share to use for temporary transcode storage.

Temporary folder - Specify or browse to a directory on the share to house the temporary proxy for upload.


Access code - Optionally create a custom access code to protect against unwanted bandwidth consumption. This will require users to enter the access code in order to submit media from the ShareBrowser web app for autotagging.

13.5.4 Presets

Presets ... +			
Name ↑	Built in ↓	Video codec ↓	Container ↓
AI/ML Autotagging	Yes	H264 (default)	Mov >
AI/ML Transcribing	Yes	H264 (default)	Mp3 >
Audio proxy	Yes	H264 (default)	Mp3 >
Default	Yes	H264 (default)	Preserve original (default) >
Edit Proxy	Yes	ProRes_422PROXY (default)	Mov >
Media proxy	Yes	H264 (default)	Mov >

Current transcoding presets are displayed, with the option to create new custom presets or to edit an existing global preset value. Take care to note the original settings if experimenting with adjustment of a global default preset. Custom preset construction is outside the scope of this document.

13.5.5 Replication logs

Replication logs ... 	
Storage	OS Disk

A transfer summary report is created for each replication job, while more details about the replication are logged. By default, this is stored on EVO's OS disk. It's possible to instead send the log output to a NAS share, which could then

be mounted and reviewed by a local administrator, or simply preserved for a history of replication instances (logs will rotate on OS disk).

Use OS disk - Default. Logs will rotate automatically, with recent replication logs included in EVO logs.

Use NAS share - Select a share and folder location; the “evo-replication-logs” folder is suggested, with the option to use the root of the share or create a new destination directory.

14 | Network

Network

Network service advertising

Host name

EVO245

Description

EVO245

WINS

Disabled

Avahi (Bonjour compatibility)

Enabled

DNS

Primary

8.8.8.8

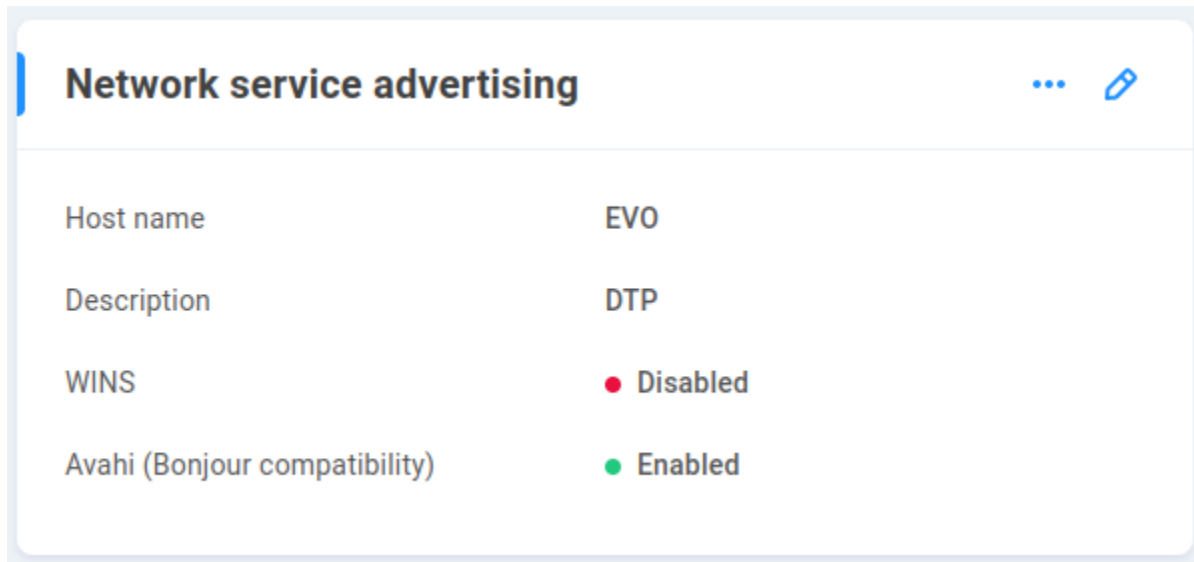
Secondary

8.8.4.4

Ethernet ports

Port	IP address	Subnet	Gateway	Current speed	Status
eth0	172.19.42.25	255.255.255.0		1 Gb/s Full	Static IP
eth1	192.168.1.245	255.255.255.0	192.168.1.1	1 Gb/s Full	Static IP

14.1 Network service advertising



These options can make browsing for EVO shares on your network easier. Note that advertising for the host may not be the intended path for the workstation to use! EVO shares should be mounted (mapped) specifically using the intended network path, which may be a different address from what's advertised and listed in the macOS Finder sidebar and Microsoft Explorer.

In addition to possibly being the incorrect route to EVO, when browsing an advertised share, each click to navigate its structure queries the server for a directory listing, which is much slower than browsing the cached contents of a *mounted network share*.

Host name - The host name is used to uniquely identify each EVO unit. It is a good practice to change the host name ("EVO" by default) to a name that helps identify the particular EVO unit, especially if your site makes use of more than one EVO.

Description - The environment's naming convention for host names may not be very descriptive, so this additional field can help with identification for a system and its purpose.

WINS - This protocol is rather deprecated, and disabled by default. The Windows Internet Name Service enables EVO to act as a server to translate network share names into IP addresses. This is similar to how a DNS server allows you to only have to remember the name of a website, instead of its IP address. This may require that your network administrator add the IP address of EVO as a WINS service in your DHCP server. See [Advanced](#) for more information on setting your workgroup if your site doesn't use the default value of "workgroup".

Avahi - This software is made to speak the same Zeroconf protocol as Apple's Bonjour for network advertisement. With this service enabled, the EVO shares will show up in the Network section at the left of Finder windows. Some network backup devices also use this information to help configure scheduled backups of NAS shares. This is enabled by default.

Note: While browsing to a location on the network is simple, it may not be the best method when it comes to *working* with the system. Once shares have been discovered on the network, editors should mount/map the volumes on their workstations instead of continuing to browse the target. This allows for directory caching and other communication optimizations.

14.2 DNS

DNS

Primary

8.8.8.8

Secondary

8.8.4.4

For EVO to locate any devices by DNS (Domain Name System) instead of IP addresses (when defining an NTP server or mail server, for example), it must know the DNS server addresses for your network. Most networks have two DNS servers, but if yours has only one, enter it as the Primary. If the DNS address fields are left blank, Google's Public DNS addresses will be automatically defaulted as the primary (8.8.8.8) and secondary (8.8.4.4) DNS addresses the first time EVO boots with Internet connectivity available.

Primary - 8.8.8.8 (Google primary DNS is populated as default if an internet connection is available)

Secondary - 8.8.4.4 (Google secondary DNS is populated as default if an internet connection is available)

Tip: Use the Custom test option on the **Ping Test** to test DNS server availability.

14.3 Ethernet ports

Ethernet ports					
Port	IP address	Subnet	Gateway	Current speed	Status
eth0	172.19.42.25	255.255.255.0		1 Gb/s Full	Static IP
eth1	192.168.1.245	255.255.255.0	192.168.1.1	1 Gb/s Full	Static IP


Use the Ethernet Port List to make changes to the default Ethernet connectivity settings. For reliable performance, EVO will not allow its Ethernet ports to have overlapping subnets.

Note: EVO's eth1 port has the DHCP client role assigned by default. This allows EVO to be connected to the LAN to automatically receive an IP address from the router or DHCP server.

Warning: Incorrect Ethernet port settings can render your EVO unit unable to communicate with other systems on your network and even cause a loss of connection to the web-based interface. If you are unsure of the proper way to configure the Ethernet settings of your EVO system, please contact Studio Network Solutions or the authorized reseller that provided your unit for advice and recommendations.

Tip: If DHCP Client is assigned to a port and it does not receive an address, disconnect and reconnect its Ethernet cable to send a new request to the DHCP Server.

14.4 Aggregated interfaces

Aggregated interfaces				
Interface	IP address	Subnet	Gateway	Status
 eth2, eth3, eth4, eth5	192.168.3.25	255.255.255.0		Static IP


Multiple Ethernet ports can be bonded to act as one port. The aggregated interface is assigned one IP address, and once correctly configured at the switch, client workstations will be able to communicate over any aggregated port using a single IP address.

This provides redundancy as well as ease of configuration. If any link fails, the other(s) will be used. Performance depends largely on the configuration and features of the Ethernet switch. Some configurations will yield an aggregated link that is no faster than a single gigabit link (providing only redundancy), whereas others will produce a link that is capable of nearly the same total bandwidth as individually-configured ports.

Note: Link aggregation requires a switch to enforce the LAG policy.

To aggregate interfaces on EVO, select the appropriate checkboxes in the list of Ethernet ports and click the Save button. The new aggregated interface will retain the settings of the lowest-numbered Ethernet device that is part of the group. To release an aggregated interface, click the Deactivate button in the Aggregated interfaces list. The settings for the aggregate interface will be applied to the lowest-numbered Ethernet device that was part of the group.

14.5 Virtual switch assignment

Virtual switch assignments				
Interface	IP address	Subnet	Gateway	Status
 vs0	10.10.10.10	255.255.255.0		Static IP

For peak performance, each workstation should have a dedicated network controller reserved for communication with EVO, in a discrete subnet. However, some smaller production environments may not have an existing high speed local network, or the workstations may only have one Ethernet port available, etc. EVO's Virtual Switch Mode can simplify the process of configuring workstations and in some cases eliminate the need for additional network hardware. It uses a

small portion of EVO's processing power to allow multiple workstations to communicate with EVO while maintaining a connection to each other and an external network, such as the internet.

This feature is limited by the number of physical ports available on EVO; additional network cards can be installed if more ports are needed. Multiple virtual switches can be created on one EVO. For example, a 16 Bay EVO that includes four 1GbE ports could be used to directly connect three workstations, with the fourth port used to connect to the internet, or all four ports could be used to connect to workstations in an isolated (private) network.

If redundant (failover) connections are used (multiple physical connections between an EVO's virtual switch and a physical switch), Spanning Tree Protocol (STP) must be enabled on EVO as well as the physical switch. This is to prevent loopback errors on the network, which would severely impact communication. STP needs to be enabled any time there is more than one path to the same device on the network.

Click the plus symbol to select port members for a new virtual switch. Upon creation, the virtual switch assumes the IP address of the first port added, and the lowest MAC address found among the included interfaces. All the member ports must have the same MTU value. If the virtual switch is removed, the IP address remains associated with the lowest MAC address, and other member ports revert to their default IP addresses.

Note: The IP address of an existing virtual switch will not change when adding new ports, but if one of the added ports has a lower MAC address, the virtual switch will assume that MAC address.

14.6 Ping test

The Ping test is a tried-and-true method of making sure your network is set up properly and that you can communicate with other network devices. It simply sends a packet of information to a remote machine, and requests that the remote machine acknowledge that it received it by responding with another packet. The standard test will ping several preconfigured addresses on the internet. Alternatively, you can choose a custom address to use with the test.

Note: The default firewall settings in some versions of Windows may prevent those machines from responding to ping requests.

15 | Alerts

The screenshot shows the EVO Alerts management interface. At the top, there's a dark header with a speaker icon, the word "Alerts", and a plus icon. Below this, the interface is divided into two main sections. The left section, titled "Alerts", contains a table with columns for "Option", "E-mail", "Audio", and "SNMP". The right section contains two sub-panels: "Audio alarm management" and "SNMP management station".

Option	E-mail	Audio	SNMP
Failed drive detected	●	●	●
RAID rebuild/resync process started	●	●	●
RAID rebuild/resync process finished	●	●	●
Web configuration port changed	●	●	●
IP address changed	●	●	●
Reboot	●	●	●
Start	●	●	●
Shutdown	●	●	●

Audio alarm management

Mute audio alerts for 15 minutes

MUTE

SNMP management station


















































SNMP alerts ● Disabled

Host

Port (UDP) 162

Most of the time you won't be simply watching EVO's web interface to make sure things are going well. You'll want to set up some way for EVO to contact you if something requires attention. EVO supports using Email and Audio notifications (beeping), as well as providing access via SNMP protocol.

15.1 Alerts -

Alerts ... 			
Option	E-mail	Audio	SNMP
Failed drive detected			
RAID rebuild/resync process started			
RAID rebuild/resync process finished			
Web configuration port changed			
IP address changed			
Reboot			
Start			
Shutdown			
User added/changed			
LDAP/Active Directory settings changed			
UPS: power supply status changed			
UPS: battery charge level changed			
UPS: communication status changed			
Broadcast storm detected			
Shares usage exceeds threshold			
System disk exceeds threshold			

This table displays the available alert types as well as method of delivery (E-mail, Audio, SNMP). A green light

indicates the method will be used for the alert type, while a red light indicates the method will not.

Click the pencil to expose the options and add/remove checks for each alert type/method.

15.2 Audio alarm management

If Audio alerts are enabled for an alert type that occurs, the system will beep. These alerts can be temporarily silenced while the issue is corrected by choosing to mute the audio alerts for a specified amount of time from the drop-down menu.

15.3 SNMP management station

Simple Network Management Protocol (SNMP) is an Internet-standard protocol for managing devices on IP networks. With this feature enabled, statistics can be monitored remotely by an SNMP manager computer sending SNMP requests. Click the pencil to edit the values:

SNMP alerts - Toggles SNMP on/off

Host - Enter the SNMP manager IP address here

Port (UDP) - Default port is 162

15.4 SNMP agent configuration

SNMP agent configuration	
EVO version	● Disabled
Local time	● Disabled
System uptime	● Disabled
CPU usage statistics	● Disabled
UPS status	● Disabled
Overall statistics on blocks in/out to internal EVO drives	● Disabled
I/O statistics for individual EVO disks	● Disabled
NAS sessions	● Disabled
Cached logical disk statistics	● Disabled
Detailed per-logical disk statistics	● Disabled

This section provides statistics specific to SNMP in addition to those available in the Alerts section.

15.5 Shares/Disk usage threshold


Shares/Disk usage threshold

Checked daily at 11:00 pm.

Threshold	75%
-----------	-----

A standard recommendation is to always maintain 15-20% free space on any file system, and in addition to defining quotas for protection against overfilling a file system, alerts can be configured to inform if a file system on the operating system disk or a NAS share on a logical disk exceeds a predefined threshold. This is checked daily at 11:00 pm. Click the pencil to change the threshold (default 75%).

15.6 SNMP management information base (MIB)



SNMP management information base (MIB)

This MIB file will help your SNMP client application determine what information is available from EVO.

DOWNLOAD

Once *Alerts* and *SNMP agent configuration* have been configured, download EVO's MIB here for use by the SNMP manager system.

15.7 E-mail configuration

E-mail configuration

SMTP user name

SMTP user password *****

SMTP server

SSL ● Disabled

From

Recipient list

Most of the time you won't be simply watching EVO's web interface for possible problems. You'll want to set up some way for EVO to contact you when there's a problem. EVO supports using Email and Audio notifications (beeping), as well as providing access via SNMP protocol. This section can be used to configure SMTP notifications for system events.

SMTP user name - Enter the valid email address for the SMTP mail account.

SMTP user password - Enter the password for the above account. Note that an application-specific password may be required, for example, if the SMTP server requires two-factor authentication.

SMTP Server - Enter the address and specify the port the SMTP server uses. An example is pre-populated for Gmail, which is smtp.gmail.com:465.

SSL - Most SMTP servers require enabling the Secure Sockets Layer.

From - Enter the address you'd like to be shown as the sender for the SMTP notifications.

Recipient list - Enter the recipient email address(es) for all SMTP notifications. Use semicolons to separate addresses if more than one is entered.

Send a test message - Use this to confirm email notifications are working correctly once configured.

Note: If Gmail will be used, a unique password will need to be generated for authentication. See this article for more information: <https://support.studionetworksolutions.com/hc/en-us/articles/215191543-SMTP-notifications-with-Gmail>

15.8 SNMP service configuration

SNMP service configuration

Port	161
Transport	UDP and TCP
Security level	authNoPriv
SNMPv3 security name	admin
Authentication protocol	MD5

These controls allow for environment-specific SNMP integration. This section assumes you've already configured your network monitoring service and have the information available to connect EVO.

Port - default 161

Transport - default UDP and TCP

Security level -

noAuthNoPriv - No authentication, no privacy

authNoPriv - (Default) Authentication, no privacy

authPriv - Authentication and privacy

SNMPv3 security name - admin user for SNMP manager

Authentication protocol - Default is MD5, with various SHA options available

Authentication password - Enter the password for the network manager authentication

16 | Disks & Pools

Name	Size (GiB)	RAID Level	Health	Status
POOL-A/d0r6	2048.3	RAID6	Good	Online
POOL-A/d1r6	47500.2	RAID6	Good	Online

POOL-A Divided into 2 logical disks
Free: 0.6 TiB Allocated: 55.3 TiB Total: 55.9 TiB

QUAD-0-0 QUAD-0-1 QUAD-0-2
QUAD-0-3 QUAD-1-0 QUAD-1-1
QUAD-1-2 QUAD-1-3 QUAD-2-0
QUAD-2-1 QUAD-2-2 QUAD-2-3
QUAD-3-0 QUAD-3-1 QUAD-3-2
QUAD-3-3

A pool is a grouping of physical disks that each contribute their own resources to act as one device (logical disk). Disk pools can be used to determine the total number of drives that contribute to each logical disk, or to protect the bandwidth of one set of drives from another. When physical disks are grouped into a pool, they each contribute their capacity and resources, allowing for the creation of one or more logical disks in the pool. A pool can contain multiple logical disks with their own discrete file systems, at differing RAID levels.

A logical disk is a virtual device that provides a file system on a physical disk, or in EVO's case, a set of physical disks comprising a pool. This allows for single-namespace mount-points whose available capacity and performance may far exceed that afforded by any single physical disk. When a logical disk is accessed (reads, writes), all physical disks in the pool are accessed, with the data "striped" across the physical disks in an array (RAID). The amount of space available for logical disk creation, as well as the performance profile, differs according to the chosen RAID (parity) level.

Pool and logical disk names have a 40 character limit. Latin letters, digits, underscores, and dots are allowed (may not start with a dot).

16.1 Logical Disks

Logical disks					...	+
<input type="checkbox"/>	Name	Size (GiB)	RAID Level	Health	Status	
<input type="checkbox"/>	POOL-A/d0r6	2048.3	RAID6	Good	Online	>
<input type="checkbox"/>	POOL-A/d1r6	47500.2	RAID6	Good	Online	>

Combining multiple physical disks into a logical disk offers greater capacity and performance than what would be available for an individual physical disk, and can provide redundancy in the event of a hardware failure (not a substitute for backup).

A pool must first be created to store the logical disk(s). Click the plus symbol to add a logical disk to the build queue, and only start the queue once you’re certain it will build exactly what’s intended.

Add disk to queue



Pool name

POOL-A



Logical disk name

Logical disk size

0



GiB



Max size: 99.7 GiB

Logical disk RAID level

5



Advanced settings



Logical disk stripe size (KiB)

1024



I/O Profile

Use default (Video)



Add multiple

CANCEL

ADD TO QUEUE

Pool name - This is not user-facing, and is typically a generic name such as “POOL-A”

Logical disk name - This is not user-facing, and is typically a generic name such as “LD1”

Logical disk size - Define a numerical value and measurement unit.

Logical disk RAID level - Select the RAID level to be used. RAID 5 allows for the loss of one physical disk, while RAID 6 tolerates the loss of two physical disks. RAID 5 is recommended for pools containing 8 disks or fewer, while RAID 6 is recommended for pools containing more than 8 disks.

16.1.1 Advanced settings

Logical disk stripe size (KiB) - The stripe size is the smallest chunk of data that can be addressed, and this value can have a substantial impact on performance and capacity. By default, this is 1024 KiB, and the drop-down menu provides several more choices. A typical array often uses a much smaller stripe, while EVO is most often used specifically with media files. Since the stripe size determines the minimum amount of data that will be written contiguously, having fewer, larger blocks means less repositioning of the disk heads, which usually translates to better performance. Note that a large stripe size is extremely inefficient when working with small files. For example, a 1040 KiB file would require two blocks, with most of the second one being completely unused. The default setting is a great option for most workflows; however, if you plan to store a significant amount both of small files and large, compartmentalizing and allocating a logical disk for each type can provide efficiency for bandwidth and capacity.

I/O Profile - This allows for selection of specific tuning profiles. By default, EVO is optimized for working with video files.

After adding the disk(s) to the pool(s), review the queue carefully, and then click START QUEUE when ready.

Note: Users may be noticeably impacted by the logical disk construction, so it may be best to process the queue when EVO is otherwise idle.

Note: The logical disk name and size are set at time of creation, and disks may be created or deleted (not edited). Check the logical disk build queue carefully before starting the queue.

Warning: Once started, the queue can be paused; however, it cannot be modified or stopped (it will resume automatically following a reboot).

Following construction of the logical disk(s), click on one to expose ACTIONS and DETAILS. From here, the disk can be set offline or removed.

16.2 Pools

Pools



A disk pool is a collection of EVO drives combined into space used for the creation of logical disks. Disk pools can be used to determine the total number of drives that contribute to each logical disk, or to protect the bandwidth of one set of drives from another. All physical disks in a drive pool are accessed when any logical disk in that pool is accessed.

Note: A pool may consist of up to 32 disks.

Warning: If a pool spans more than one chassis, the integrity of the pool depends on the external cable connection and the independent power supply for each unit. It's strongly recommended in this case that each chassis share a common power source to ensure all member disks are online at the same time.

See *Disk Pool Considerations* for more information on the planning and setup of disk pools.

If no pools exist, click CREATE POOL to begin. Select the physical disks that should comprise the pool and give it a

name. This is not user-facing, and is typically given a generic name such as A or B.

This card shows the current Pool configuration on the system, as well as how many logical disks exist in each pool.

Once created, a pool is fixed in size, unless it's grown when adding more physical disks. If disks are added to EVO, and a pool is grown to realize added capacity, the file system on the logical disk(s) is automatically expanded upon completion. Clicking the pool exposes the sidebar, where the Actions option allows for growing a pool if more physical disks are added.

Note: Growing a pool takes significantly longer than creating a pool, since the array needs to be reconstructed while preserving data already in place. This will also make the logical disk(s) in the pool unavailable at times during the grow operation.

Note: It's strongly recommended to reserve ~40GiB free space in the pool for diagnostic purposes.

17 | Cloud VPN

SNS Cloud VPN is an optional feature that quickly and easily enables your authorized users to remotely access this system. Visit this page to learn more and order: <https://www.studionetworksolutions.com/cloud-vpn/>

Once the SNS Cloud VPN service is active, EVO will need to be connected to it to receive a new IP address for remote access.

Select Add Connection to import a VPN configuration file.

Connection name - Enter a useful name for the VPN connection.

Configuration file - Drag and drop or navigate to the EVO configuration file issued at the VPN dashboard.

Connections - Displays current connection details when connected, including connection name, protocol, endpoint address, local address, status, and whether or not the service should start automatically (reconnect following reboot, for example).

Select an active connection to activate/deactivate, enable/disable autostart, or delete.

18 | System

18.1 Time Settings -

See *Time settings*

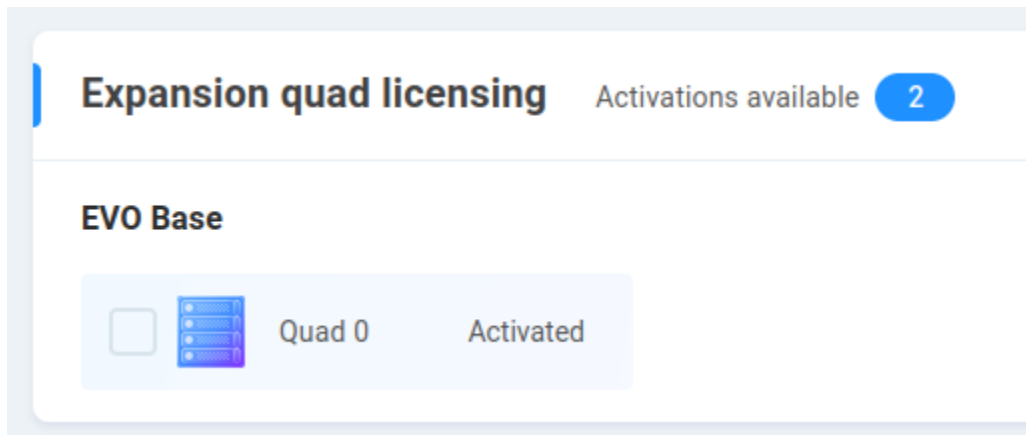
18.2 Hardware Activation

EVO's expansion hardware (including all drives and added Ethernet) must be activated to work properly in the EVO environment. This guarantees that the hardware used is the tested and approved hardware for the EVO system. All EVO base units are authorized to activate the first two drive quads by default. Additional hardware is activated using an Activation code provided by SNS.

Once activations are authorized, this page is used to activate the expansion hardware.

Warning: The addition of any expansion hardware to EVO requires prior authorization from SNS.

18.2.1 Expansion quad licensing



EVO includes authorization for two quads by default. Additional quads may be authorized for expansion and activated at this page.

Warning: Deactivating a quad is a destructive operation. Only deactivate a quad if the intent is for EVO to treat the disks as unformatted drives needing to be activated.

18.2.2 Deactivate missing quads

Deactivate missing quads

There are no missing quads

Hardware changes, such as moving disks between EVOs, may lead to a situation where EVO finds information about quads that is not part of its current configuration, or is expecting to find quad information that is not present on the installed data drives. Only deactivate any quads listed in this section if the current EVO configuration is known to be good and extraneous information is to be removed.

Warning: Once deactivated, any missing quads cannot be reactivated.

18.2.3 Ethernet expansion connectivity licensing

Ethernet expansion connectivity licensing

Activations available 1 Gb/s: 3 10 Gb/s: 3 >10 Gb/s: 2

Port	Activation	MAC address	Type	Status
<input type="checkbox"/> eth2	Activated	00:e0:ed:27:04:a4	10 Gb/s	Online
<input type="checkbox"/> eth3	Activated	00:e0:ed:27:04:a5	10 Gb/s	Online

Any network hardware changes will need to be authorized and activated (or deactivated if removed). Each network port on an adapter is treated as a device according to its MAC address, and may be activated/deactivated in this section.

18.2.4 Activated keys

Activated keys

Key ID	Key type
24355423-4	EVO 1Gb/s NIC Expansion key

Hardware expansion keys that have been activated are displayed in this section

18.3 Network -

See *Network*

18.4 Disks & Pools -

See *Disks & Pools*

18.4.1 Logical Disks -

See *Logical Disks*

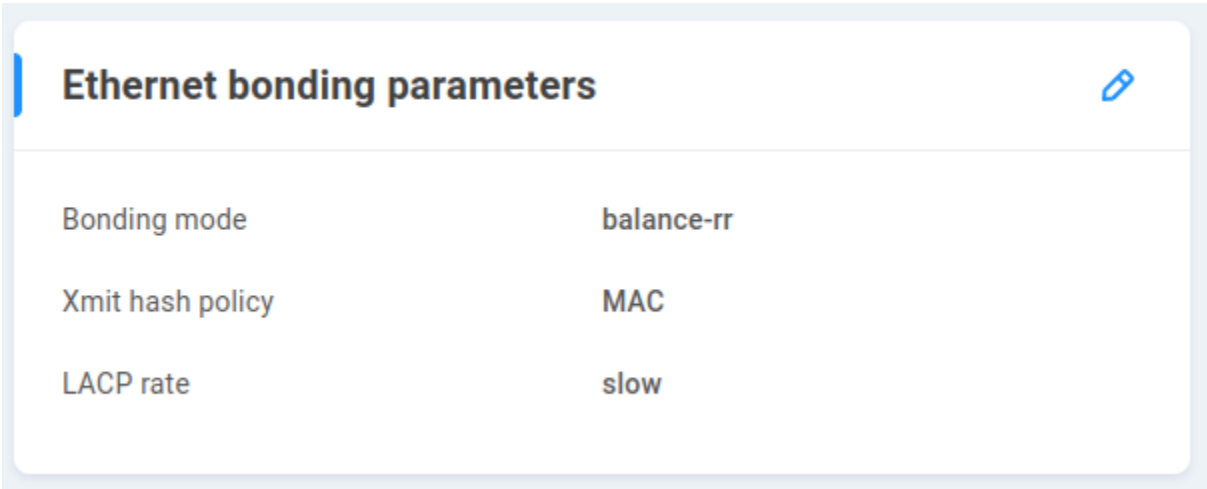
18.4.2 Pools -

See *Pools*

18.5 Advanced

18.5.1 Ethernet bonding parameters

Ethernet bonding is typically referred to as link aggregation, and the default values are expected for most environments, with LACP being the default and most common method enabled on network switches.



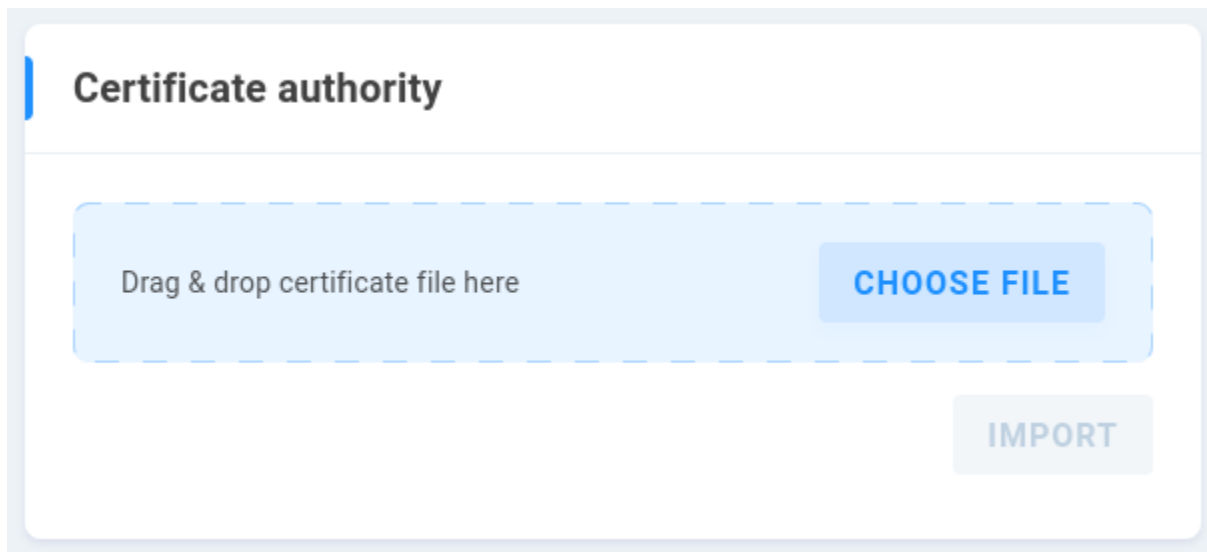
Bonding mode - 802.3ad is the default, compatible with LACP. Some environments may have a need to set up a different aggregation protocol, and choices available are balance-rr, active-backup, balance-xor, broadcast, balance-tlb, and balance-alb. The implications for each mode are outside the scope of this document.

Xmit hash policy - For 802.3ad mode, the Xmit Hash Policy controls the distribution of client workstations across EVO’s bonded ports. The Xmit Hash Policy can be set to MAC (layer-2) or MAC+IP (layer-2-and-3). Both policies are compliant with the 802.3ad specification.

LACP rate - This value is the rate at which LACP packets are sent. In the default mode, LACP PDUs are sent each second until the devices synchronize, after which they're sent every 30 seconds. When LACP fast is set, PDUs are still sent every second following synchronization. There are pros and cons to each approach, since a timeout not be immediately corrected using the slow rate, while the fast rate will add mostly unneeded network traffic, and may not handle a timeout with any significant difference. Most switches use the same default, so this value should only be changed to match a switch using fast rate.

Note: The LACP rate does not directly translate to communication speed (slow may in fact be good).

18.5.2 Certificate Authority

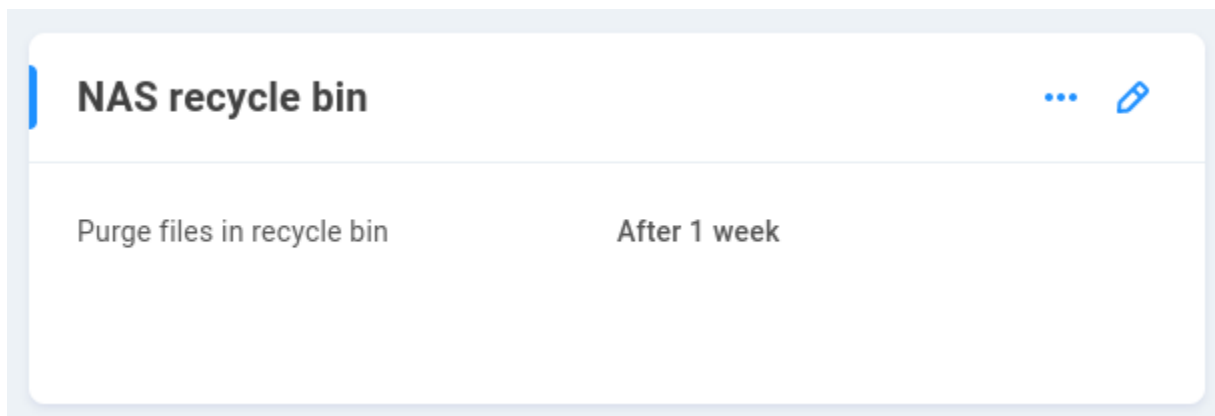


The interface for the Certificate Authority section. It features a title bar 'Certificate authority' with a blue vertical bar on the left. Below the title bar is a large light blue dashed box containing the text 'Drag & drop certificate file here'. To the right of this box is a blue button labeled 'CHOOSE FILE'. Below the dashed box is a light gray button labeled 'IMPORT'.

Use this card to upload the SSL/TLS certificate when joining EVO to LDAP. See [LDAP](#) for more configuration information.

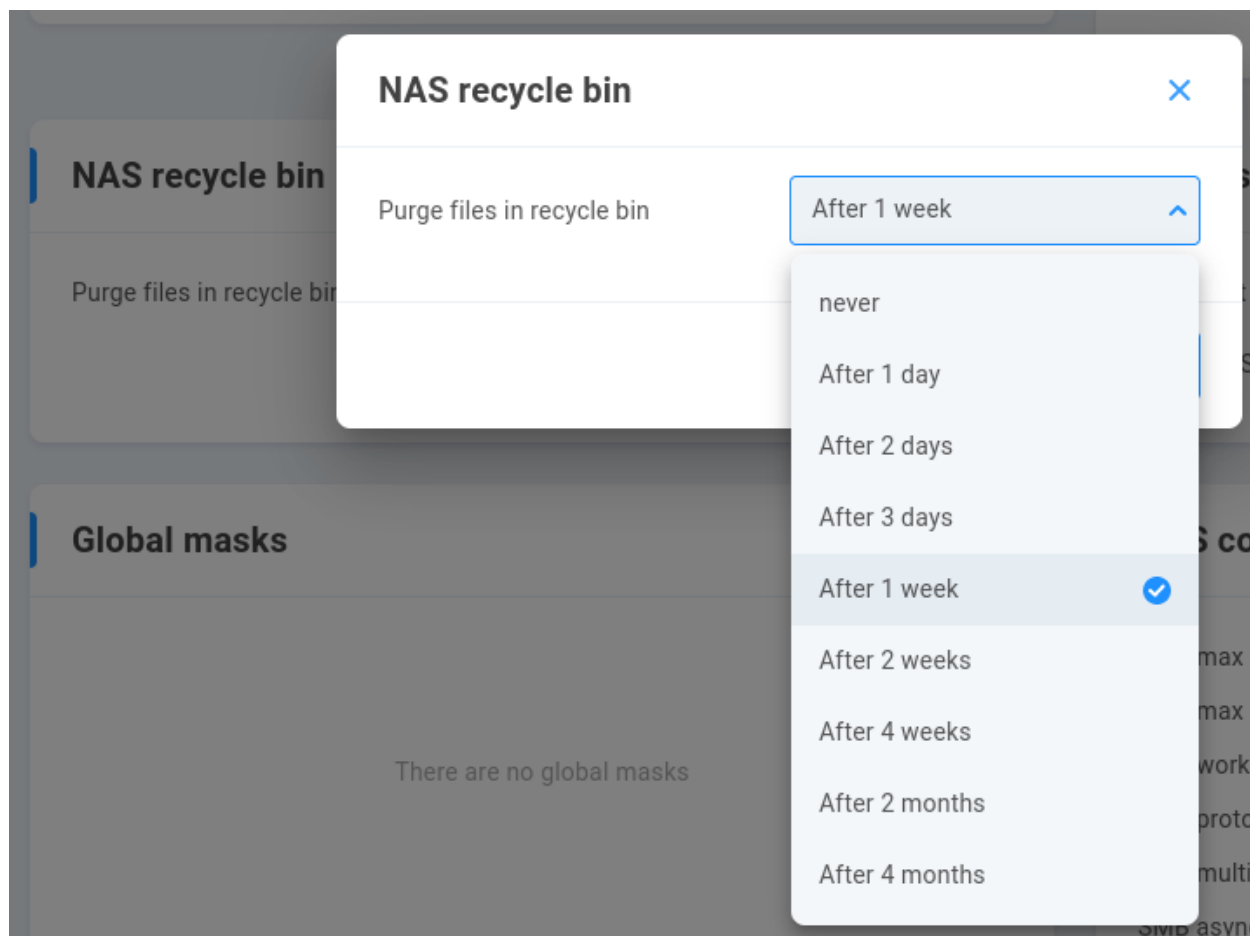
18.5.3 NAS Recycle Bin

A *recycle bin* is included and enabled by default for local EVO SMB shares. By default, files are permanently deleted after one week in the recycle bin.



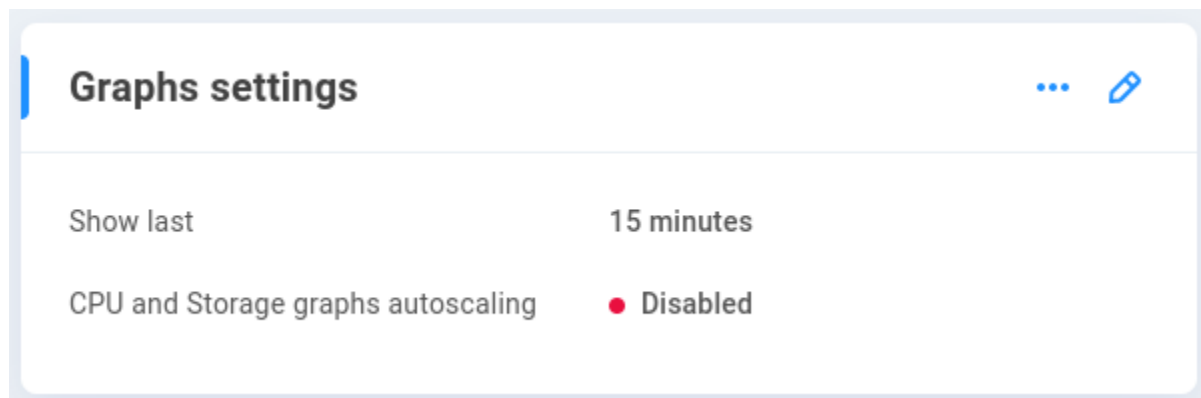
The interface for the NAS recycle bin section. It features a title bar 'NAS recycle bin' with a blue vertical bar on the left. To the right of the title bar are three blue dots and a blue pencil icon. Below the title bar is a large white box with a light gray border. Inside this box, on the left, is the text 'Purge files in recycle bin' and on the right is the text 'After 1 week'.

The retention time for SMB user-deleted content can be selected from the drop-down menu.




Warning: The recycle functionality applies to content deleted over SMB. Other methods of modifying content (Slingshot, other protocols) will not use SMB, and will therefore not send content to the recycle bin.

18.5.4 Graphs settings




This provides options for the reporting of system statistics in the collapsible display at the top of the interface.

Click the pencil to edit the settings:

Edit graphs settings 

Show last

15 minutes 

CPU and Storage graphs autoscaling ☐


CANCEL

SAVE

Show last - 15 minutes (default), 30 minutes, 1 hour

CPU and Storage graphs autoscaling - Toggles automatic scaling to fit default display values (off by default)

18.5.5 Global Masks

Global masks 

*.fcp

*.prproj

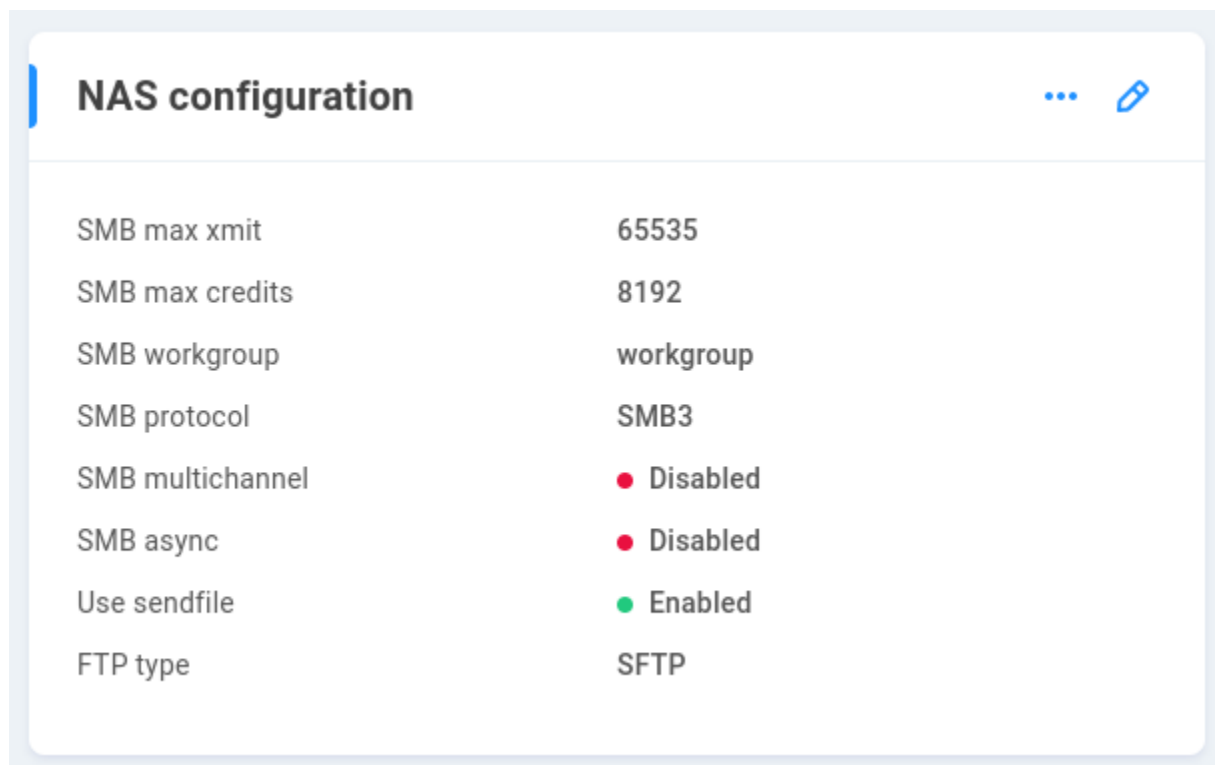
*.ptx

*.aep

*.veg

If Project locking is enabled for any NAS share(s), EVO will automatically lock the file types in this list when accessed via read/write by an SMB user. The most common file types where this behavior may be expected are enabled by default, and it's possible to add or remove file extensions for custom locking behavior.

18.5.6 NAS Configuration



The screenshot shows a web-based configuration interface for NAS settings. The title is "NAS configuration" with a menu icon (three dots) and an edit icon (pencil) to the right. Below the title is a table of settings:

SMB max xmit	65535
SMB max credits	8192
SMB workgroup	workgroup
SMB protocol	SMB3
SMB multichannel	● Disabled
SMB async	● Disabled
Use sendfile	● Enabled
FTP type	SFTP

SMB max xmit - This sets the maximum transmit size for SMB requests accepted by the server (determined by client). The default value is 65535 (maximum allowed).

SMB max credits - Credits determine the amount of simultaneously allowed client requests. The default value is 65535 (maximum allowed).

SMB workgroup - This is a peer-to-peer local network for SMB-connected machines. By default, the workgroup name will be WORKGROUP, which should update automatically if needed, for example by joining Active Directory.

SMB protocol - SMB3 is used by default, with the option to lower to SMB2 if required by legacy clients.

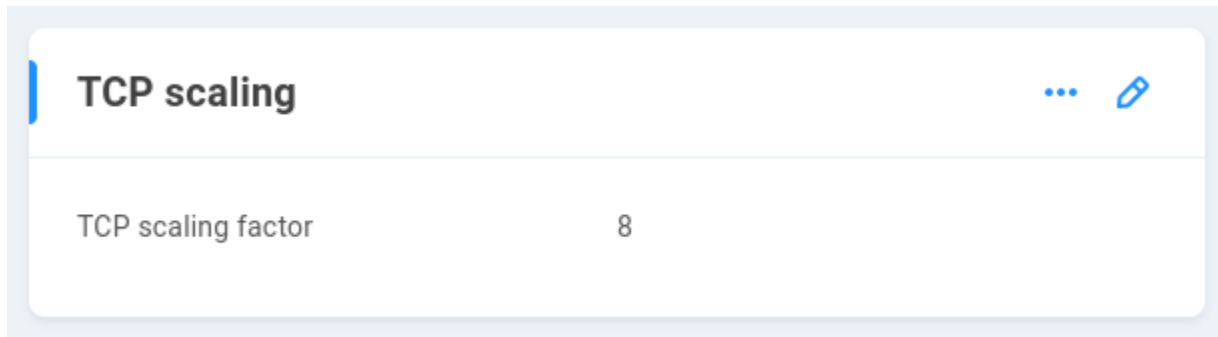
SMB multichannel - Disabled by default. When configured, SMB multichannel allows a client to use more than one NIC to communicate with the server. This should only be enabled if the network and clients have been configured to support it.

SMB async - Disabled by default. SMB async can increase the number of concurrent file operations, though EVO uses the sendfile feature instead of SMB-specific asynchronous I/O. This setting should be enabled if SMB multichannel is enabled. It may not be enabled if sendfile is enabled.

Use sendfile - Enabled by default. This allows for more efficient calls to the file system for oplocked files. Disable in order to use SMB multichannel with SMB async.

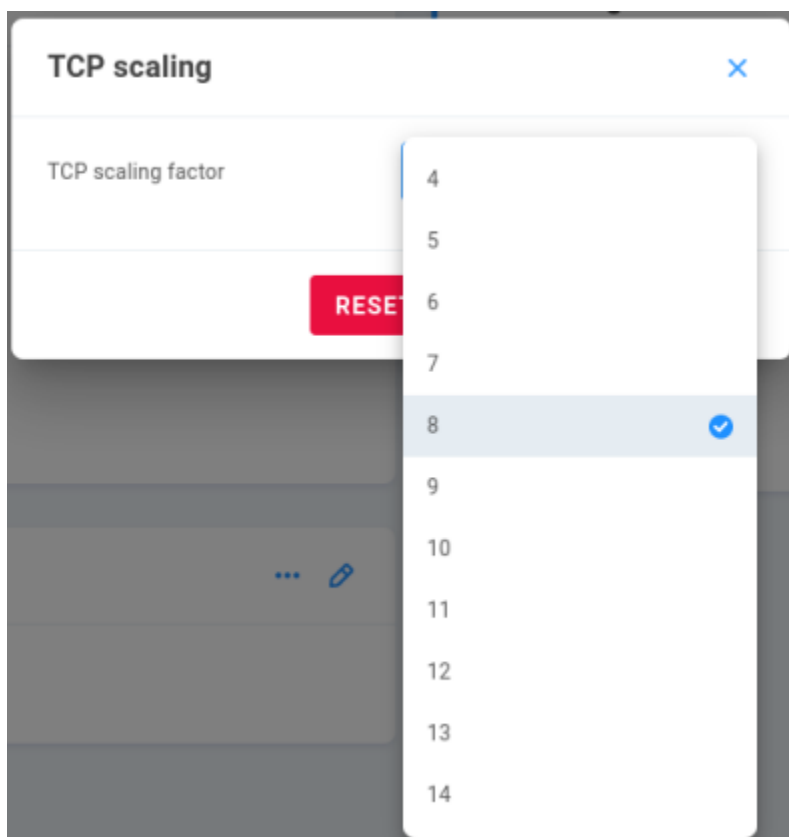
FTP type - If a share is created with FTP access, it will allow SFTP connections only by default. This may be changed to FTP or FXP if needed.

18.5.7 TCP Scaling



The screenshot shows a configuration window titled "TCP scaling". Inside, there is a label "TCP scaling factor" followed by the value "8". In the top right corner of the window, there are three blue dots and a blue pencil icon.

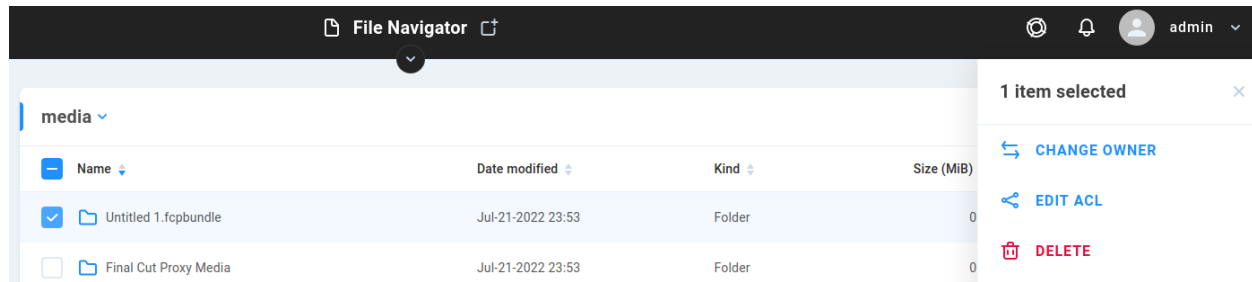
TCP scaling factor - Default scaling factor is 8, and may be set to any value between 4 and 14.



This screenshot shows the same "TCP scaling" configuration window, but with a dropdown menu open over the "TCP scaling factor" field. The dropdown menu lists integers from 4 to 14. The value 8 is currently selected, indicated by a blue checkmark icon to its right. A red "RESET" button is visible below the field. The background of the window is dimmed.

TCP window scaling is already enabled on any modern operating system, and workstations and EVO will continually negotiate in an attempt to determine the largest window size they can use for communication, **based on ever-changing network variables**. Adjusting the scaling factor may result in improved or worsened communication and resource usage. The default value is well-balanced and generally sufficient for most environments.

18.6 File Navigator



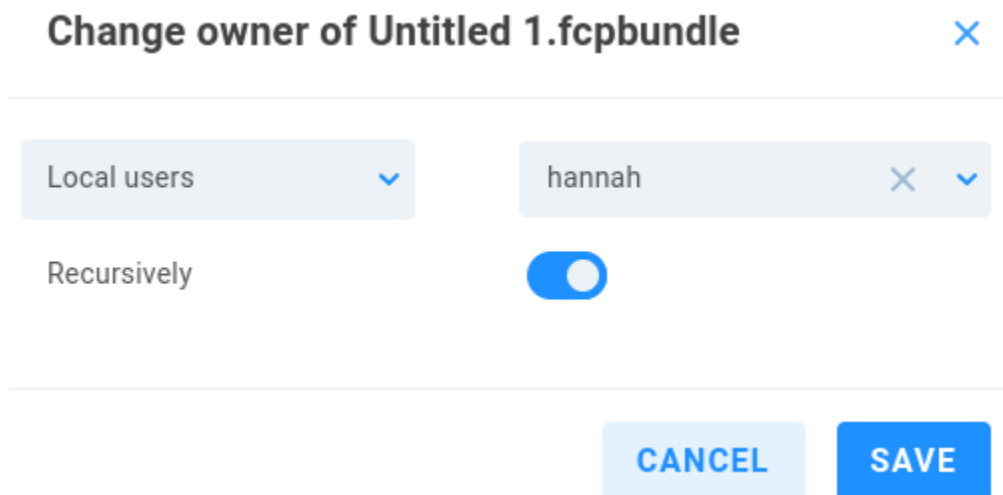
EVO's File Navigator provides navigation and administrative options for content on shares. Select a file to see the available actions.

By default, any user granted read/write for a share will have those permissions for all content on the share, with “EVO” as the owner. Changing the owner and editing ACLs changes the permission scheme to allow for more granular permissions control; however, care should be taken when adjusting permissions, especially when working with nested content (recursive permissions) and inheritance.

ACL permissions do not travel with files when copied to a different location, and should inherit the permissions at the destination directory. Depending on the user's permissions, the implications of these changes may not be obvious. It's recommended to set, or at least confirm, any modified permissions using EVO's File Navigator.

Warning: Modifying ACLs from a Mac workstation is not supported.

Warning: ACLs are not supported by ShareBrowser in this version.



Change owner - Choose the user to grant ownership, and if applicable, set the permission recursively to apply it to all subdirectories and files within.

Create permissions entry for Untitled 1.fcpbundle

[Customize settings](#) → [Create permissions](#)

Local users



alexander



Type

Allow



Apply to

This folder, subfolders and files



Full control



Administration



Read



Write



BACK

OK

Edit ACL - Add advanced security settings by user or group and optionally enable inheritance to replace all child object permission entries with inheritable permission entries from the selected object.

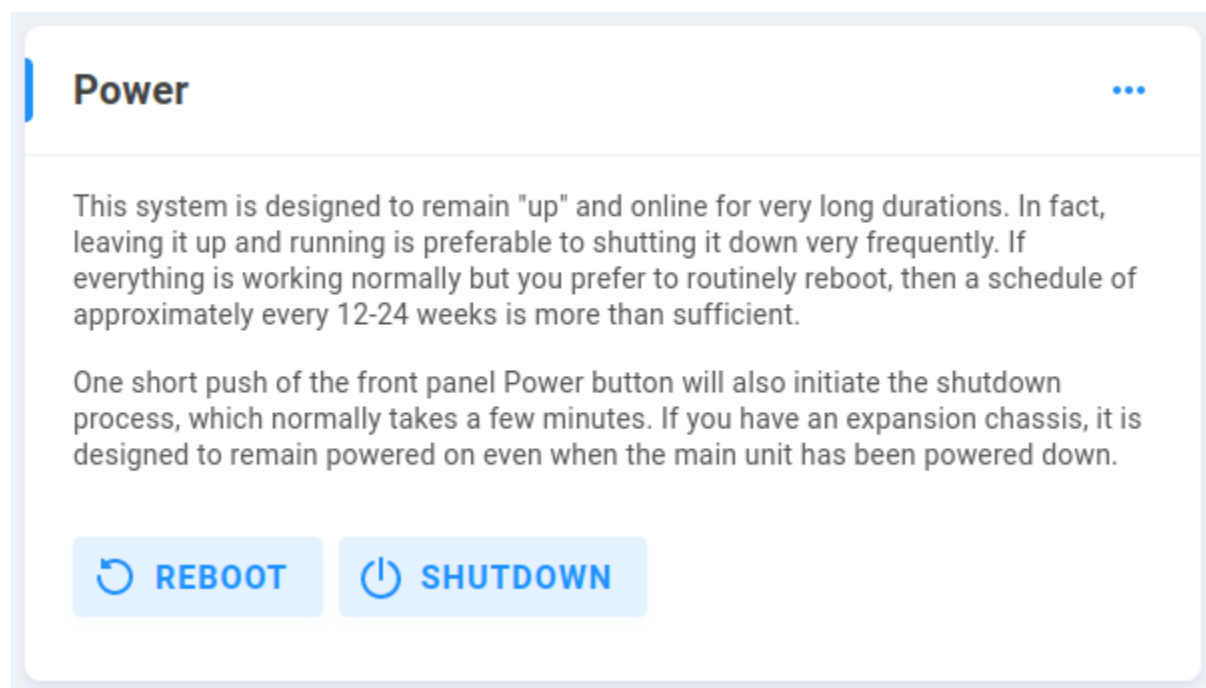
Warning: Slingshot replication jobs do not consider ACLs (file-level permissions), so user visibility and access permission for replicated content needs to be managed at the target destination.

18.7 Power & UPS

This system is designed to remain “up” and online for very long durations. In fact, leaving it up and running is preferable to shutting it down very frequently. If everything is working normally but you prefer to routinely reboot, then a schedule of approximately every 12-24 weeks is more than sufficient.

One short push of the front panel Power button will also initiate the shutdown process, which normally takes a few minutes. If you have an expansion chassis, it is designed to remain powered on even when the main unit has been powered down.

18.7.1 Power



This section provides reboot and shutdown options. Shutdown can also be initiated with a tap of the power button on the chassis.

18.7.2 APC UPS configuration -

See *APC UPS Configuration*

18.8 Hardware Profile

The Hardware Profile page identifies and provides statistics for internal components. Output may differ based on EVO model.

CPU		...
Model		Cores
Intel(R) Xeon(R) Silver 4210 CPU @ 2.20GHz		10
Intel(R) Xeon(R) Silver 4210 CPU @ 2.20GHz		10

CPU - Displays CPU type and core total

RAID controllers			...
Controller	Serial number	Model	
0	1A15G300BEA	Adaptec ASR8885	

RAID controllers - Shows disk controller(s), serial and model numbers. The first controller is enumerated 0.

System memory	...
Total: 65536 MiB. Modules: 8192 MiB x 8	

System memory - Shows total system memory, size and number of modules installed

Ethernet ...	
Model ▲	Firmware ▲
Intel Corporation Ethernet Connection X722 for 10GBASE-T rev 09	3.31 0x80000d32 1.1767.0
Intel Corporation Ethernet Connection X722 for 10GBASE-T rev 09	3.31 0x80000d32 1.1767.0
Intel Corporation Ethernet Controller XL710 for 40GbE QSFP+ rev 02	5.02 0x800023d3 0.0.0
Intel Corporation Ethernet Controller XL710 for 40GbE QSFP+ rev 02	5.02 0x800023d3 0.0.0

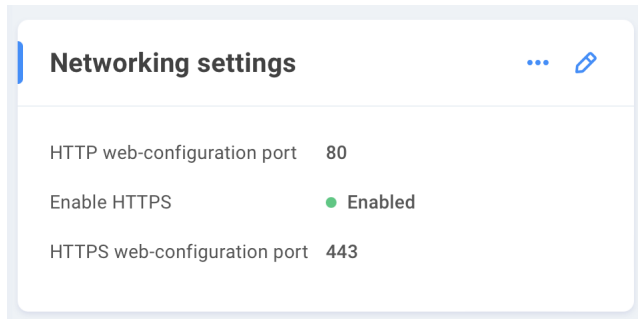
Ethernet - Displays model and firmware information for onboard and any added Ethernet expansion hardware

Sensors ... ↺	
Name ▲	Value ▲
CPU 0 Core 0 Temperature	30°C
CPU 0 Core 1 Temperature	29°C
CPU 0 Core 2 Temperature	30°C
CPU 0 Core 3 Temperature	29°C
CPU 0 Core 4 Temperature	30°C

Sensors - Individual CPU core temperatures are displayed, as well as a combined temperature value for the CPU.

18.9 Admin Settings

18.9.1 Networking settings



Networking settings	
HTTP web-configuration port	80
Enable HTTPS	● Enabled
HTTPS web-configuration port	443

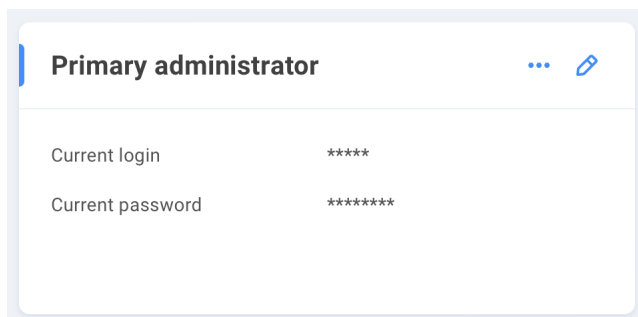
HTTP web-configuration port - 80 is the default and standard port for http communication. Manually changing this port will impact any applications that expect to use port 80.

Enable HTTPS is disabled by default and requires additional configuration to enable. See [Server certificate](#) below

HTTPS web-configuration port - 443 is the default and standard port for https communication. Manually changing this port will impact any applications that expect to use port 443.

Warning: Do not enable HTTPS until prepared to do so with the required certificate. Workstations will require additional configuration in order to reach EVO once HTTPS is enabled.

18.9.2 Primary administrator



Primary administrator	
Current login	*****
Current password	*****

Current login - EVO administrator name is masked

Current password - EVO administrator password is masked

Click the pencil to edit the primary administrator credentials.

Primary administrator



Current login

Current password

New login

New password

Re-type new password

CANCEL

SAVE

Current login - Enter the current primary EVO administrator name (admin)

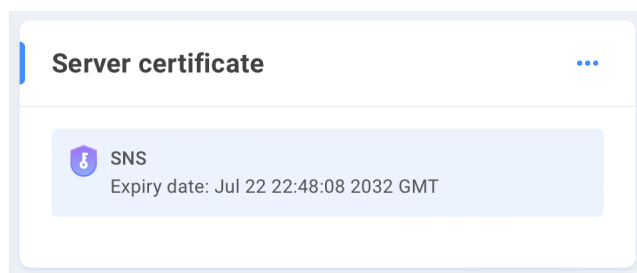
Current password - Enter the current primary EVO administrator password (adminpw111)

New login - Enter the new primary EVO administrator name

New password - Enter the new primary EVO administrator password

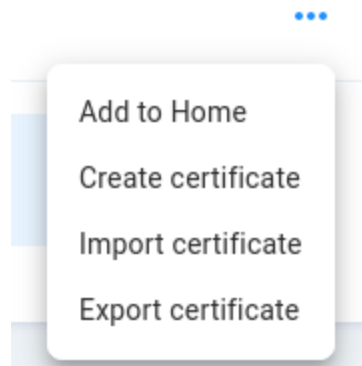
Re-type new password - Confirm the new primary EVO administrator password

18.9.3 Server certificate



A server certificate needs to be uploaded to EVO in order to enable https communication between EVO and workstations. Configuring secure web communication requires server and client validate each other by means of a certificate of trust. The certificate can be self-signed or granted by a certificate authority.

Click the three dots to choose to add the card to the Home page, create a new certificate, or import/export an existing certificate.



18.9.3.1 Create certificate

Adding a certificate allows for establishment of secure channels using HTTPS between server and users, whereby they're able to safely determine the computer they're communicating with is in fact the one it claims to be.

Create certificate



- ☒ **Create self-signed certificate**
Create a self-signed certificate usually used to secure channels between the server and a group of known users.
- ☐ **Create certificate signing request**
Create a certificate signing request and apply a certificate from a certificate authority.
- ☐ **Renew certificate**
Create a new private key and certificate signing request to renew your certificate.

CANCEL

NEXT

Create self-signed certificate - This allows for any user to create and sign a certificate, as a certificate authority. In addition to adding the signed certificate to EVO, client machines must be configured to explicitly trust the self-signed certificate.

Create self-signed certificate



Common name

Your company CA

E-mail

example@mail.com

Country

[US] United States of America



State/Province

City

Organization

Your company

Department

Marketing

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CREATE

The values entered here are rather arbitrary, as the certificate is manually validated by clients.

Common name - Enter a name to act as the certificate authority

E-mail - Enter an email address to associate with the authority

Country - Select country

State/Province - Enter state or province if applicable

City - Enter city

Organization - Enter a name for reference

Department - Enter a name for reference

Create certificate signing request - Create a certificate signing request to use for certificate signing by a certificate authority.

Create certificate signing request



- 1 Fill in information 2 Download CSR

Common name

Your company CA

E-mail

example@mail.com

Country

[US] United States of America



State/Province

City

Organization

Your company

Department

Marketing

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The values entered here are required for review by the certificate authority.

Common name - Enter a name to associate with the certificate

E-mail - Enter an email address to associate with the certificate

Country - Select country

State/Province - Enter state or province if applicable

City - Enter city

Organization - Enter a name for reference

Department - Enter a name for reference

Click NEXT, then Click DOWNLOAD to export your certificate signing request. Send this certificate signing request to a third-party certificate authority for their signing. Once your certificate has been issued, choose Import certificate from the Server certificate card.

Renew certificate - Create a new private key and certificate signing request to renew your certificate.

Renew certificate



- 1 Create new private key
- 2 Fill in information
- 3 Download CSR



The existing private key and certificate will be deleted, and a new private key will be created.

Click NEXT if you would like to proceed.

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1. The existing private key and certificate will be deleted, and a new private key will be created. Click NEXT if you would like to proceed.
2. Fill in information as described in **Create certificate signing request**.
3. Download CSR

Once a certificate is in place, https can be enabled at *Networking settings*.

Warning: Since a self-signed certificate is not provided by a trusted certificate authority, client workstations have no means for automatic trust verification and will need an exclusion added for trusting the self-signed certificate.

18.9.3.2 Import certificate

Import certificate



☒ **Import signed CSR**
Import a certificate generated from a previously created certificate signing request.

☐ **Import certificate**
Import a certificate, private key, and intermediate certificate.

CANCEL

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Import signed CSR - Use this to import a self-signed certificate following EVO creation of a certificate signing request.

Import certificate - This option allows for import of an existing certificate and private key.

Warning: Until a certificate is in place, HTTP will be used for upload, so ensure your connection is isolated.

Import certificate



Certificate

Drag & drop certificate file here

CHOOSE FILE

Private key

Drag & drop private key here

CHOOSE FILE

Intermediate certificate

Drag & drop intermediate certificate here

CHOOSE FILE

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IMPORT

Drag & drop the files or click Choose File and browse to upload each. The certificate format may be .pem or .crt, and the key may be .pem or .key format.

18.9.3.3 Export certificate

Click **Export certificate** to download EVO's server certificate (evo-web.crt) for import to another device's trusted certificates (such as macOS Keychain or Windows Trusted Root Certification Authorities).

18.9.4 Restrict EVO UI access

By default, EVO's administrative interface is available via any of its Ethernet ports, or any device with a network path to EVO. It's additionally possible to restrict administrative access to a single Ethernet port, which may be isolated from the rest of the local network.

Restrict EVO UI access - Disabled by default. Enable to restrict interface access to a single Ethernet port.

Allowed interface - Choose the Ethernet port you'd like to reserve for administrative access.

18.9.5 Secondary administrators

While the Primary EVO administrator has access to all interface functionality, it may be useful to protect these credentials and create one or more secondary administrators with limited additional permissions for common administrative tasks, such as the ability to create a new share, without permission to delete one.

Click the pencil to manage the list of secondary administrators.

Add an administrator - Enter or choose a name from the list.

18.9.6 Display language

EVO offers localization options. Select English or Simplified Chinese from the drop-down menu to change the interface language. Contact SNS if you're interested in adding support for another language.

18.9.7 Long-lived tokens

If multiple EVOs are configured (federated), long-lived tokens can assist with automatic reconnection in the event of interrupted communication (reboot, for example). If a token expires, federation may require reconfiguration.

18.10 Firewall

Firewall rules may be added directly to EVO to restrict port access by client IP according to inclusion and/or exclusion rules. Logic for multiple rules and policies can be implemented by changing the order in which the rules are applied.

Protocol - Select TCP or UDP. Some communication methods expect both transport types, requiring an additional rule.

Ports - Select All, specify a port or comma-separated list of ports, or define a port range

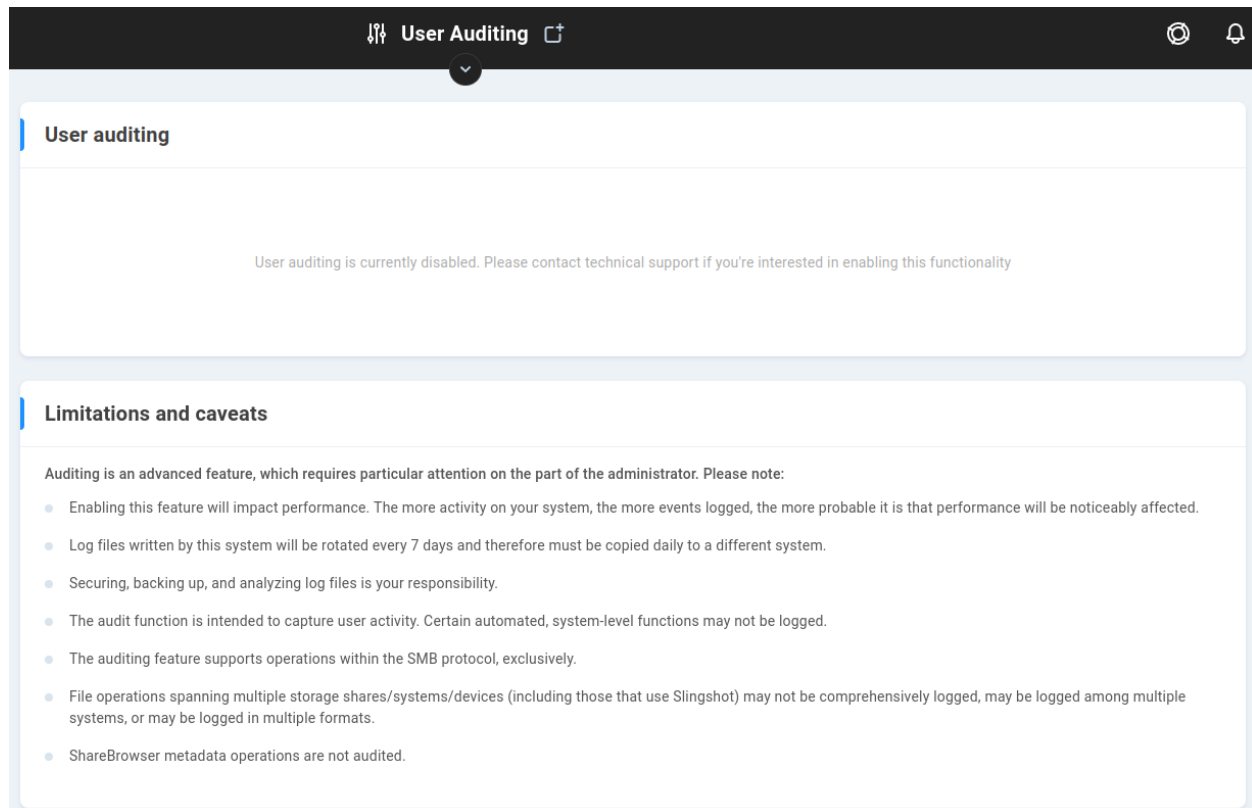
Address - Select All to apply to all client IP addresses, single host by IP or hostname, or define a subnet using CIDR notation

Policy - Select Allow or Deny to specify whether packets that meet the defined conditions should be accepted or dropped.

Warning: It is possible to inadvertently add a rule that blocks all access to the interface. As a protection, saving an added rule applies it for five minutes, after which changes will be automatically rolled back. This allows for rules to be fully tested before committing them. Once functionality for the added rule(s) is confirmed, click commit to apply the rule set.

18.11 User Auditing

SMB User Auditing may be enabled to track operations on the file system by users.



User auditing - displays current auditing status, disabled by default. Contact technical support if you're interested in enabling this functionality.

Limitations and caveats - Auditing is an advanced feature, which requires particular attention on the part of the administrator. Please note:

Enabling this feature will impact performance. The more activity on your system, the more events logged, the more probable it is that performance will be noticeably affected. Log files written by this system will be rotated every 7 days and therefore must be copied daily to a different system. Securing, backing up, and analyzing log files is your responsibility. The audit function is intended to capture user activity. Certain automated, system-level functions may not be logged. The auditing feature supports operations within the SMB protocol, exclusively. File operations spanning multiple storage shares/systems/devices (including those that use Slingshot) may not be comprehensively logged, may be logged among multiple systems, or may be logged in multiple formats. ShareBrowser metadata operations are not audited.

Note: User Auditing is available for the SMB protocol exclusively. File modifications by other means are not tracked by the User Auditing feature.

18.12 Cloud VPN -

See *Cloud VPN*.

19 | Plugins

Some optional functionality may be available in the form of plugins that can be added to the EVO operating system. [Join our mailing list](#) to ensure you're kept up to date with the latest features and functionality.

This section redirects to the [OS Data](#) page. See [Installed plug-ins](#) for more information.