

StorNext AEL500 Mini Archive Essentials Guide

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Introduction

StorNext AEL Archives are purpose-built for Big Data, offering highperformance, highly scalable data management solutions that are also costeffective and easy to manage. When added to a StorNext file system deployment, StorNext AEL Archives provide nearline archiving with built-in data protection and self-healing capabilities to ensure that valuable Big Data is protected and accessible over time.

The *StorNext AEL500 Mini Archive Essentials Guide* provides an overview of the steps required to unpack, set up, and install the StorNext AEL500 Mini Archive.The StorNext AEL500 Mini Archive is a unified archiving solution for StorNext file systems, combining archive software and hardware. The StorNext AEL500 Mini Archive hardware is a 5U Scalar i500 which supports an optional EDLM Hardware Add-On Kit, to provide EDLM functionality, and StorNext AEL500 Mini Archive EDLM Hardware Add-On Kit on page 11 and Install the Storage Expansion Licenses on page 14.

The StorNext AEL500 Mini Archive contains the following components:

- 20 licensed storage slots in the Scalar i500
- 1 License for 20 StorNext Storage Manager Slots
- 1 EDLM license

For detailed information on configuring and running your archive, adding, removing, replacing parts, and Scalar i500 software, see http://www.quantum.com/ServiceandSupport/SoftwareandDocumentationDownloads/SI500/Index.aspx

For detailed information on your using your StorNext system and software, see http://www.quantum.com/ServiceandSupport/SoftwareandDocumentationDownloads/SNMS/Index.aspx

Release Notes are also available for this product. The Release Notes describe changes to your system or firmware since the last release, provide compatibility information, and discuss any known issues. The Release Notes can be found at http://www.quantum.com/ServiceandSupport/

 $\underline{Software and Documentation Downloads/AEL500/Index.aspx}$

Note: In this document, the term "archive" is synonymous with "library".

Note: Before operating this product, read all instructions and warnings in this document and in the *System, Safety, and Regulatory Information Guide*. In addition, be sure to use this document in conjunction with the *Scalar i500 User's Guide*.

WARNING:	Without tape drives, tape cartridges, or power supplies, a 5U StorNext AEL500 Mini Archive weighs approximately 58 lbs (26.3 kg). A 9U EDLM Hardware Add-On Kit, without tape drives, tape cartridges, or power supplies, exceeds 65 lbs (29.5 kg). To avoid serious injury, two people are required to safely lift the modules into position.
WARNING:	The power outlet must be available near the archive and must be easily accessible.
WARNING:	If installing the archive in a rack, a main protective earthing (grounding) terminal must be provided, and power must be supplied via an industrial plug and socket-outlet and/or an appliance coupler complying with IEC 60309 (or an equivalent national standard) and having a protective earth (ground) conductor with a cross sectional area of at least 14 AWG (1.5 mm ²).
	To ensure proper airflow and access space, allow 24 inches (60 cm) in the front and back of the archive.
WARNING:	Under no circumstances should a rack be moved while loaded with one or more archive modules.

Install the Archive

Installing the StorNext AEL500 Mini Archive requires a series of steps, as outlined in the table below. Basic instructions are provided in this guide; please refer to the referenced sections in the referenced Scalar i500 and StorNext documentation for more information.

Note: In the Scalar i500 documentation, the 5U StorNext AEL500 Mini Archive is called a control module (CM), and the StorNext AEL500 Archive 9U Expansion Module is called an expansion module (EM).

Note: In the Scalar i500 documentation, the term "host" is synonymous with Metadata Controller (MDC).

To perform this step:	See the following documentation:	
1 Obtain the StorNext Storage Manager license via the web form at <u>http://</u> <u>www.quantum.com/</u> <u>ServiceandSupport/License/StorNext/</u> <u>Index.aspx</u> .	 <u>Request Licenses</u> on page 5. <i>StorNext Licensing Guide.</i> 	
 2 Install the archive: Plan the installation. Unpack the archive. Install the archive in a rack (optional). 	 Installing the Archive on page 6. "Installing a Stand-Alone 5U Control Module" in the Scalar i500 User's Guide. 	
3 Cable the archive.	 <u>Connecting the Archive Cables</u> on page 7. "Cabling Libraries With Fibre Channel Tape Drives Connected Directly to a Host or Switch" in the <i>Scalar i500 User's Guide</i>. 	
4 Use the Setup Wizard to configure the archive.	 <u>Use the Setup Wizard to Configure the Archive</u> on page 8. "Automatically Creating Partitions" in the <i>Scalar i500 User's Guide</i>. "Manually Creating Partitions" in the <i>Scalar i500 User's Guide</i>. 	
5 Install the StorNext Storage Manager License Key on the StorNext Metadata Controller (MDC).	 Install the StorNext Storage Manager License Key on page 9. "Step 2: Licenses" in the <i>StorNext User's Guide</i> and related sections of the <i>StorNext Online Help.</i> 	
6 Install SNAPI server.	 Install SNAPI Server on the StorNext Metadata Controller on page 10. "Installing the APIs on the Storage Manager Host" in the SNAPI User Guide. "Installing the APIs on the Storage Manager Host" in the Storage Manager API Guide. 	
7 Add the archive to the StorNext system.	 <u>Adding the Archive to StorNext</u> on page 10. "Step 6: Storage Destinations" in the <i>StorNext User's Guide</i>. 	

Request Licenses

In order for your StorNext system to recognize the capacity in the StorNext AEL500 Mini Archive, you must request StorNext licenses per the steps in the "Obtaining Licenses" section of the *StorNext Licensing Guide*.

An EDLM license is pre-installed on the StorNext AEL500 Mini Archive, making it EDLM Ready. Using EDLM requires the addition of the optional StorNext AEL500 Mini Archive EDLM Hardware Add-On Kit, which includes an EDLM drive. (See Install the StorNext AEL500 Mini Archive EDLM Hardware Add-On Kit on page 11.)

Installing the Archive	See "Installing a Stand-Alone 5U Control Module" in the <i>Scalar i500 User's Guide.</i>
	Note: See also "Step 1: Unpack the Library" in the <i>Scalar i500 Getting Started Guide.</i>
	Caution: Save all packaging materials and the orange robot restraint assembly in case you need to move or ship the archive in the future.
	1 Choose an optimal location for the archive. To avoid damage, the archive must be positioned in a stable location. See the <i>System, Safety, and Regulatory Information Guide</i> for more information on finding an optimal location for your archive.
	WARNING: The power outlet must be available near the archive and must be easily accessible.
	 Make sure a power source (only of the type marked on the product label) is available. For power requirements, see the <i>Scalar i500 User's</i> <i>Guide</i>.
	 Route any cables to avoid walking on them or pinching them with items placed on or against them. Pay particular attention to the cord at the wall receptacle and the point where the cord exits from the archive.
	 Make sure that objects will not fall and liquids will not spill into the archive's chassis through openings.
	2 Following the unpacking instructions that came with the archive, remove the archive exterior packaging but leave the archive in the bottom packaging tray.
	3 Check the contents of the package against the packing slip.
	4 Remove the interior packaging.
	Caution: Be sure to remove the orange robot restraint assembly that secures the robot to the floor of the archive and the yellow strip in the I/E station.
	WARNING: Without tape drives, tape cartridges, or power supplies, a 5U StorNext AEL500 Mini Archive weighs approximately 58 lbs (26.3 kg). A 9U EDLM Hardware Add-On Kit, without tape drives, tape cartridges, or power supplies, exceeds 65 lbs (29.5 kg). To avoid serious injury, two people are required to safely lift the modules into position.
	drives, tape cartridges, or power supplies, exceeds 65 lbs (29.5 kg). To avoid serious injury, two people are required to safely lift the modules into position.

Installing the Archive in the Rack

Note: See also "Installing the Library in a Rack" in the *Scalar i500 User's Guide.*

If desired, the StorNext AEL500 Mini Archive may be installed in a rack. (All StorNext AEL 500 Archive configurations taller than 14U must be installed in a rack.) The rack secures the base module, and all other modules (ordered separately) are then secured to the base module. Installing the modules into the rack requires at least two people. For instructions, see the *Scalar i500 User's Guide*.

- 1 Remove the power supply from the archive. For information about removing tape drives and power supplies, see the *Scalar i500 User's Guide*.
- 2 Open the archive's I/E station door and access door.
- 3 Lift the StorNext AEL500 Mini Archive and place it in the desired location.
- **4** Use the rack ears to help secure the StorNext AEL500 Mini Archive to the rack. For instructions, see the *Scalar i500 User's Guide*.
- **5** Re-install the power supply. See "Adding, Removing, and Replacing Power Supplies" in the *Scalar i500 User's Guide.*
- **6** Install any purchased tape drives. Up to two LTO-5 or LTO-6 drives may be added to the Mini Archive:
 - See <u>Archive Upgrades</u> on page 10.
 - See "Adding, Removing, and Replacing Tape Drives" in the *Scalar i500 User's Guide.*

Connecting the Archive Cables	Note: See also "Cabling Libraries With Fibre Channel Tape Drives Connected Directly to a Host or Switch" in the <i>Scalar i500 User's Guide.</i>
	 Remove the protective plastic caps covering the archive module connectors on the archive.
	2 Connect the archive module terminators.
	Caution: The module terminator is not the same as a SCSI terminator. Using a SCSI terminator instead of a module terminator can damage the archive. The module terminators are packaged in plastic and tied to the back of the StorNext AEL500 Mini Archive.
	3 Connect the archive Ethernet cable for archive management.
	Connect an Ethernet cable to the top Gigabit Ethernet port on the library control blade (LCB) for remote access to the archive via the web client. (Ethernet cable not supplied.)
	4 Connect the power cords.
	At least one power supply is required for each archive that contains tape drives.

For each power supply, connect one end of the power cord to the power supply. Then connect the other end to a nearby grounded AC power source (of the type marked on the product label).

When you have completed this procedure, your archive should be cabled as shown:



- 1 Power on the archive.
 - a Turn on the rear power switch of each of the power supplies.
 - **b** Press the power switch on the front of the archive once.

Note: The only time that you do not need to log in to the library is when the Setup Wizard appears on the operator panel for the first time.

2 Configure the archive.

Note: You may skip initial configuration, or exit partway through. If you do this, the settings you do not configure will be assigned the following default settings until you change them: - DCHP enabled

- Six I/E station slots
- Zero cleaning cartridge slots
- The archive creates a single partition and assigns available archive resources proportionately.
- **Note:** The operator panel Setup Wizard only appears once, the first time you turn the archive on. You cannot log on to the web client until you configure the network settings on the operator panel. If you exit the operator panel Setup Wizard before configuring network settings, you must configure the network settings on the operator panel (Setup > Network Mgmt) before logging on to the web client.

When you first power on the archive, the operator panel displays the Setup Wizard. The Setup Wizard helps you to configure network settings, set the date and time, create user accounts, configure I/E slots, and perform other tasks that allow you to begin using the archive. You should start using the Setup Wizard on the operator panel. After performing initial configuration from the local operator panel, you can then continue to use the Setup Wizard on the web client.

The recommended procedure for using the Setup Wizard for the initial configuration is as follows:

- **a** The Setup Wizard prompts you to enter the network settings that allow the web client to access the archive. *Be sure to complete this step.*
- **b** Open the web client using the archive's IP address. To view archive's IP address, select **Setup > Network Mgmt** from the operator panel.
- **c** Log in to the web client using the default administrative account as follows:
 - User Name: admin
 - Password: password
- **d** Complete the Setup Wizard screens on the web client.

Note: It is highly recommended that you configure the archive for a single partition, which is the default configuration for the StorNext AEL500 Mini Archive.

The final Setup Wizard screen will prompt you to apply your settings.

When you have completed the Setup Wizard, the Library Configuration report appears on the web client. The Library Configuration report provides information on the archive's tape drives, partitions, I/E stations, storage slots, cleaning slots, and loaded media.

- **3** If not already automatically configured, configure a single archive partition. For more information, see "Manually Creating Partitions" in the *Scalar i500 User's Guide*.
- 4 Load tape cartridges into the archive.

For instructions on importing and bulk loading tape cartridges, see "Importing Media" and "Bulk Loading" in the *Scalar i500 User's Guide*.

5 Register the archive (from the web client, select Setup > Register Library).

Install the StorNext Storage Manager License Key To recognize the StorNext AEL500 Mini Archive, StorNext requires the Storage Manager License Key to be installed.

• See "Step 2: Licenses" in the *StorNext User's Guide* and related sections of the *StorNext Online Help.*

Install SNAPI Server on The SNAPI Server application needs to be installed on the StorNext Metadata the StorNext Metadata Controller. The steps to download the SNAPI Server application are in the download media kit included in the accessory kit. The version of SNAPI Server Controller application to install depends on your version of StorNext: SNAPI 2.0.2 for StorNext 4.2. SNAPI 2.0.3 for StorNext 4.3 and later. Note: If you are using an older version of StorNext, contact Quantum Support. 1 Download the appropriate SNAPI server application by following the instructions on the SNAPI Download Certificate included with the media kit. 2 Install the SNAPI server application on StorNext. See "Installing the APIs on the Storage Manager Host" in the SNAPI 2.0.2 User's Guide and "Installing the APIs on the Storage Manager Host" in the SNAPI 2.0.3 Storage Manager API Guide for instructions and more information. Adding the Archive to 1 Connect to the StorNext Metadata Controller (MDC). **StorNext** Once the partition and drive fibre channel connections are established to the StorNext Metadata Controller system, perform the following steps: a Power up the StorNext MDC system. **b** Verify communication with the media changer devices and tape drives. 2 After the archive is configured, you can add it to your StorNext system. You can add a library through the Configuration Wizard. See "Chapter 3 The Configuration Wizard" in the StorNext User's Guide for information on the Configuration Wizard. See "Step 6: Storage Destinations" in the StorNext User's Guide for specific instructions on adding the library to your StorNext system. **Archive Upgrades** The StorNext AEL500 Mini Archive can be upgraded for additional slots, additional drives and to add EDLM support. Optional upgrade items include: • StorNext AEL500 Mini Archive 21-slot upgrade. • LTO-5 or LTO-6 drives. StorNext AEL500 Archive 9U Expansion Module. StorNext AEL500 Mini Archive EDLM Hardware Add-on Kit. Additional Drives: • Up to two LTO-5 or LTO-6 drives may be added to the Mini Archive. Adding more than two drives requires a StorNext AEL500 Archive 9U Expansion Module to house any additional drives. We recommend that customers who want more than two drives at time-of-sale INSTEAD PURCHASE the StorNext AEL500 Archive with 41

active slots, which includes three drives, an EDLM drive, and the required 9U expansion module.

Additional Slots:

- The StorNext AEL500 Mini Archive 21-slot upgrade increases capacity to 41 slots
- StorNext AEL500 46-slot Capacity Upgrades and StorNext AEL500 Archive 9U Expansion Modules can be added to further scale the StorNext AEL500 Mini Archive up to a the maximum number of 409 activated slots in 41U.
- We recommend that customers who want more than two drives at time-of-sale INSTEAD PURCHASE the StorNext AEL500 Archive with 41 active slots, which includes three drives, an EDLM drive, and the required 9U expansion module.

EDLM Support:

- The StorNext AEL500 Mini Archive is EDLM Ready. Customers who want EDLM may purchase a StorNext AEL500 Mini Archive EDLM Hardware Add-on Kit, which requires purchase of a 9U expansion module to house the hardware.
- We recommend that customers who want EDLM support at time-of-sale INSTEAD PURCHASE a StorNext AEL500 Archive with 41 active slots, which includes three drives, an EDLM drive, and the required 9U expansion module.

Install the StorNext AEL500 Mini Archive EDLM Hardware Add-On Kit

StorNext AEL500 is EDLM Ready. An EDLM license is included with the StorNext AEL500 Mini Archive, but to make use of it, the system requires an EDLM Scanning Drive and an extra LTO drive provided by the StorNext AEL500 Mini Archive EDLM Hardware Add-On Kit. The EDLM scanning drive is used to scan for suspect tapes, and the additional LTO drive insures an LTO drive is available for restore requests if the two tape drives of the base StorNext AEL500 Mini Archive are in use. For more information on EDLM drives and scanning, see "About EDLM" in the *Scalar i500 User's Guide.*

The StorNext AEL500 Mini Archive EDLM Hardware Add-On Kit is available in LTO-5 and LTO-6. Always use a EDLM Hardware Add-On Kit with the same drive technology as other drives in the system.

The EDLM Hardware Add-On Kit contains the following components:

- 1 LTO-5 or LTO-6 drive
- 1 LTO-5 EDLM or LTO-6 EDLM drive
- 1 FC I/O blade
- 1 FC I/O fan blade

Note: The EDLM Hardware Add-On Kit requires a StorNext AEL500 Archive 9U Expansion Module (LSNDB-AXEM-900A), sold separately.

Installing the EDLM Hardware Add-On Kit requires a series of steps, as outlined in the table below:

Note: In the Scalar i500 documentation, the 5U StorNext AEL500 Mini Archive is called a control module (CM), and the StorNext AEL500 Archive 9U Expansion Module is called an expansion module (EM).

Note: In the Scalar i500 documentation, the term "host" is synonymous with Metadata Controller (MDC).

To perform this step:	See the following documentation:
 Install the EDLM Hardware Add-On Kit: Unpack the EDLM Hardware Add-On Kit. Install the EDLM Hardware Add-On Kit. Install the power supplies. Install the user drive in the lower-most slot. Install the EDLM drive in the upper-most slot. Install the FC I/O blade. Install the FC I/O fan blade. 	 "Adding Expansion Modules to an Existing Library" in the <i>Scalar i500 User's Guide</i>. "Installing a New Multi-Module Library Configuration" in the <i>Scalar i500 User's Guide</i>. "Installing the Library in a Rack" in the <i>Scalar i500 User's Guide</i>. "Adding, Removing, and Replacing Power Supplies" in the <i>Scalar i500 User's Guide</i>. "Adding, Removing, and Replacing Tape Drives" in the <i>Scalar i500 User's Guide</i>. "Adding, Removing, and Replacing Tape Drives" in the <i>Scalar i500 User's Guide</i>. "Adding, Removing, and Replacing FC I/O Blades" in the <i>Scalar i500 User's Guide</i>. "Adding, Removing, and Replacing FC I/O Blades" in the <i>Scalar i500 User's Guide</i>. Caution: Do not connect the FC I/O blade to the StorNext Metadata Controller (MDC). "Adding, Removing, and Replacing the FC I/O Fan Blade" in the <i>Scalar i500 User's Guide</i>. Note: The EDLM Hardware Add-On Kit requires a StorNext AEL500 Archive 9U Expansion Module (LSNDB-AXEM-900A), sold separately.
2 Cable the user drive to the StorNext Metadata Controller (MDC).	 "Cabling Libraries With Fibre Channel Tape Drives Connected Directly to a Host or Switch" in the <i>Scalar</i> <i>i500 User's Guide.</i> See <u>Figure 1</u> on page 13.



To perform this step:	See the following documentation:
5 Configure the archive to add the new user drive to the existing StorNext partition.	• "Setting Tape Drive Parameters" in the <i>Scalar i500 User's Guide.</i>
6 Configure the EDLM partition (drive).	 "About EDLM" in the <i>Scalar i500 User's Guide.</i> "Configuring EDLM" in the <i>Scalar i500 User's Guide.</i>

Install the Storage Expansion Licenses

Note: Your archive must be at i8.2 or later to upgrade following these instructions. If you are at an earlier code release, please contact Quantum Support.

Note: In the Scalar i500 documentation, the term "host" is synonymous with Metadata Controller (MDC).

Storage capacity for the StorNext AEL500 Mini Archive can be increased as your storage needs grow. An initial upgrade of 21 slots is available, and can be upgraded further in 46-slot increments to a maximum of 409 slots in the 41U archive configuration. Capacity must be purchased with the StorNext AEL500 21-slot Capacity Upgrade, and/or StorNext AEL500 46-slot Capacity Upgrade. However, separate license keys are obtained and installed on the StorNext Metadata Controller and archive.

The first capacity upgrade license must be a StorNext AEL500 Mini Archive 21slot Capacity Upgrade, growing the system to 41 slots. Thereafter, all capacity increases must be with the StorNext AEL500 Archive 46-slot Capacity Upgrade. As the system grows, additional StorNext AEL500 9U Expansion Modules (EMs) may be required.

To have	Add
41 slots	1x 21 slot upgrade
87 slots	1x 21 slot upgrade + 1x 46 slot upgrade + 1 EM
133 slots	1x 21 slot upgrade + 2x 46 slot upgrade + 1 EM
179 slots	1x 21 slot upgrade + 3x 46 slot upgrade + 2 EM
225 slots	1x 21 slot upgrade + 4x 46 slot upgrade + 2 EM
271 slots	1x 21 slot upgrade + 5x 46 slot upgrade + 3 EM
317 slots	1x 21 slot upgrade + 6x 46 slot upgrade + 3 EM
363 slots	1x 21 slot upgrade + 7x 46 slot upgrade + 4 EM
409 slots	1x 21 slot upgrade + 8x 46 slot upgrade + 4 EM

Installing the Capacity Upgrade and Storage Manager license upgrades requires a series of steps, as outlined in the table below:

To perform this step:	See the following documentation:
1 Obtain the StorNext Storage Manager license via the web form at <u>http://</u> <u>www.quantum.com/ServiceandSupport/</u> <u>License/StorNext/Index.aspx</u> .	• StorNext Licensing Guide.
2 Obtain the StorNext AEL500 Mini Archive Capacity Upgrade license key from <u>http://</u> www.quantum.com/licensekeys.	 "Capacity on Demand" in the Scalar i500 User's Guide. "About License Keys" in the Scalar i500 User's Guide. "Obtaining a License Key" in the Scalar i500 User's Guide. Note: In the Scalar i500 documentation, the Capacity Upgrade license unit adds 46 slots; be aware that the StorNext AEL500 Archive Capacity Upgrade 21 Slot License will create a total of 41 slots on the AEL500 Archive.
3 Install the StorNext Storage Manager License Key on the StorNext Metadata Controller (MDC).	• "Step 2: Licenses" in the <i>StorNext User's Guide</i> and related sections of the <i>StorNext Online Help</i> .
4 Install the Capacity Upgrade License Key on the StorNext AEL500 Mini Archive.	• "Applying a License Key" in the <i>Scalar i500 User's Guide.</i>

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