

# UDO ARCHIVE

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# EXPRESS

OPERATOR'S GUIDE



Plasmon

## Preliminaries

### Copyright statement

No part of this publication may be reproduced in any form or by any means or used to make any derivative, such as translation, transformation, or adaptation, without permission from Plasmon PLC.

### Trademarks

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### Limited warranty

Plasmon PLC makes no representation or warranties with respect to the contents or use of this user's guide, and specifically disclaims any express or implied warranties of merchantability or fitness for any particular purpose. Further, Plasmon PLC reserves the right to make revisions on this documentation without obligation to notify any person or entity of such changes.

### Changes

The material in this user manual is for information only and is subject to change without notice.

Plasmon PLC reserves the right to make changes in the product design and installation software without reservation and without notification to its users.

Additional information may be obtained from your supplier or from the contacts on the rear cover.



## Safety

This product contains a lithium battery. Please note the following:

- Danger of explosion if battery is incorrectly replaced.
- Replace with only the same or equivalent type recommended by the manufacturer.
- Dispose of batteries according to the manufacturer's instructions.

## FCC note

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions in this manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference to radio communications, in which case the user will be required to correct the interference at their own expense.

Changes or modifications not expressly approved by Plasmon could void the user's authority to operate equipment.

All SCSI and network cables connected to and used on this equipment should be shielded.

## Industry Canada Notice per ICES-003

**English:** This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the interference-causing equipment standard entitled "Digital Apparatus," ICES-003 of the Industry Canada.

**French:** Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe A prescrites dans la norme sur le matériel brouilleur: "Appareils Numériques", NMB-003 édictée par l'Industrie Canada.

## European Notice

This product is in conformity with the following directives:

- EN 55022/CISPR 22, Class A
- EN 55024
- EN 61000-3-2
- EN 61000-3-3

This library system is in conformity with the EMC directive and low-voltage directive.

## Australia/New Zealand

This equipment has been tested and complies with AS/NZS 3548.

## Japan

この装置は、情報処理装置等電波障害自主規制協議会（VCCI）の基準に基づくクラスA情報技術装置です。この装置を家庭環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

This is a Class A product based on the standard of the Voluntary Control for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may occur, in which case, the user may be required to take corrective actions.

## Product Safety Standards

This product complies with the following domestic and international product safety standards:

- UL Standard 60950-1, 1st Edition: 2003 Safety of Information Technology Equipment
- CSA Standard C22.2 No. 60950-1-03, Safety of Information Technology Equipment
- IEC 60950-1, 1st Edition: 2001

## Laser Safety Notice

This is a Class 1 Laser Product. It complies with 21 CFR 1010.10,

1040.11, and IEC 60825-1:1993+A1:1997+A2:2001 as a Class 1 Laser product.

The maximum output power and wavelength of the laser in the Plasmon UDO30 and UDO60 drive is 65mW (403-413nm).

## WARNING



Use of controls or adjustments, or performance of procedures other than those specified herein, may result in hazardous radiation exposure.

## CDRH Regulations

The Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration implemented regulations for laser products on August 2, 1976. These regulations apply to laser products manufactured from August 1, 1976. Compliance is mandatory for products marketed in the United States.

## Power Cord Set Selection

The voltage rating and the current rating of the power cord set shall be higher than the rated voltage and current of this unit. The voltage of the power cord set shall be higher than the power source.

## For the U.S. and Canada

Power cord must be UL listed and CSA labeled. Type SJT, SVT, ST, SJO or SO, 3-conductors, No. 18 AWG, rated 125v, 10A. In the US the 120 VAC power cord shipped with Plasmon libraries meets these criteria:

- The power cord must have a molded NEMA 5-15P male attachment plug on one end.

- The power cord must have a molded IEC type CEE-22 female connector on the other end.
- The power cord must be UL Listed and CSA Certified.

Outside the US contact Plasmon for country specific requirements.

### For Germany and continental Europe

STROMANFNAHME: 100-240 VAC, 50/60 Hz, 10A. Für eine 230VAnwendung, ist eine harmonisierte <HAR> konfektionierte Leitungsschnur, Typ H05vvf3G1.00, die für 250V/10A oder die Gleichwertigkeit geeignet ist, zu benutzen.

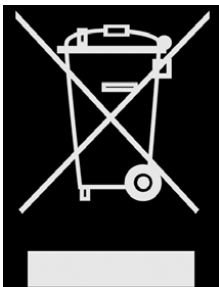
### Power Supply

The AA Express power supply is certified for China Compulsory Product Certification (CCC).

This certification does not apply to the AAE Desktop.

### WEEE Compliance

Plasmon products with the Waste Electrical and Electronic Equipment Directive (WEEE) label, shown below, can be shipped back to Plasmon for proper disposal of hazardous components. Please contact Plasmon Technical Support at the locations listed inside the back cover of this manual for the proper procedure.



## How to use this guide

This guide describes how to use the Plasmon UDO Archive Appliance Express and is aimed at system operators.

You should first have read and followed the instructions in the [AA Express Quick Start Guide](#) to install the product.

## Related documentation

Please refer to the following documents for further information:

- [Plasmon UDO AA Express Quick Start Guide](#) – Describes the installation of the AA Express and how to get started.
- [Plasmon UDO AA Express Administrators Guide](#) – Describes the interface and functionality of the AA Express in detail.







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# **UDO** **ARCHIVE** **EXPRESS** **APPLIANCE**

## ***Chapter 1*** ***Introduction***

## Appliance concept

The Plasmon UDO Archive Appliance Express (hereafter referred to as the AA Express) provides low cost tiered archival storage. It combines the performance and simplicity of network-attached RAID with the longevity and authenticity of UDO (Ultra Density Optical). Data files are stored on and retrieved from the AA Express over a TCP/IP connection. As the low cost offering in the Archive Appliance family, the AA Express utilizes manual off-line management of UDO media. The web interface is common across the Archive Appliance family allowing operators to easily transfer their knowledge as archive storage requirements change.

### UDO technology

UDO™ (Ultra Density Optical), based on blue laser technology, is the underlying foundation to Plasmon's archive solution portfolio, including the AA Express. It's the first storage technology specifically designed for long-term professional data archive requirements. UDO provides absolute data authenticity for any application where archived information must remain accurate and permanently unchanged. UDO has been designed and proven to deliver over a 50-year media life.



Blue lasers achieve far greater data densities, resulting in dramatically higher media capacities. First and second generation UDO products (UDO and UDO 2) have a storage capacity of 30GB and 60 GB respectively, with capacity expected to reach 120GB by the third generation.

## AA Express hardware

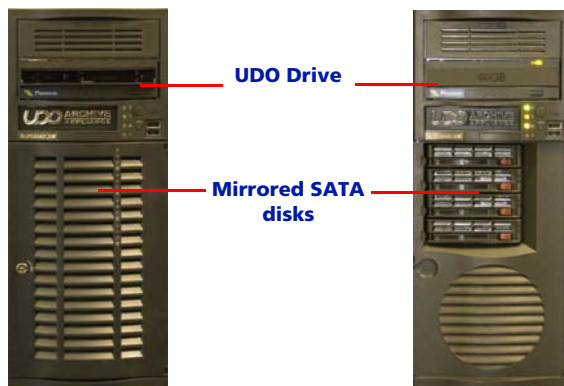
The AA Express consists of:

- A server housed in a 2U rack mountable enclosure.
- A rackmount kit.
- 2-4 SATA disks (see below for supported RAID configurations).
- Integrated UDO drive



The AAE Desktop consists of:

- A server housed in a desktop form factor enclosure.
- 2-4 SATA disks (see below for supported RAID configurations).
- Integrated UDO drive



## AA Express supported RAID configurations

The AA Express can be configured with 2, 3 or 4 SATA disks in the following configurations:

- 2 SATA disks in a RAID 1 (mirrored pair) configuration.
- 2 SATA disks in a RAID 1 (mirrored pair) configuration with a third SATA disk configured as a Hot Spare.
- 4 SATA Disks in a RAID 5 configuration.



# **UDO** **ARCHIVE** APPLIANCE **E X P R E S S**

## *Chapter 2* *Using the AA Express*

## Media labelling

Each piece of UDO Media used in the AA Express is identified by a sequence number. Media must be labeled and numbered prior to use.

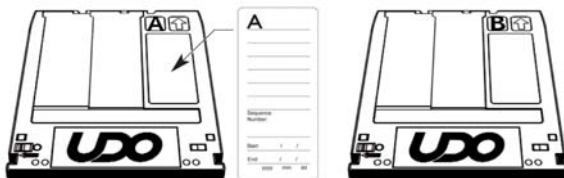
When new media is requested by the AA Express:

1. Remove the UDO media from the packaging.
2. Attach the supplied label to side A of the media.

---

*Note: Sides A and B of the media are identified by the letters embossed on the casing.*

---



3. Write the sequence number indicated by the media request (see "Action requests" on page 14) on the media label.

---

*Note: When not in use, UDO media should be kept in the protective sleeve supplied.*

---

## Media handling

### Inserting media

---

*Note: AA express models equipped with a UDO 2 drive feature a drive door to protect against dust ingress. Press the drive button to open the door before inserting media into UDO 2 drives.*

---

Hold the media at the rear of the cartridge and insert in the direction of the arrow (media shutter forward) as shown:



---

*Important: The shutter on the media should not be opened manually as this exposes the media to potential contaminants.*

---

### Correct media side

To load side A of the media for reading or writing, insert the media with the embossed "A" on the cartridge facing upwards and the "A" mark on the barcode label to the left.

To load side B, insert the media with the embossed "B" on the cartridge facing upwards with the "B" mark on the barcode label to the left.

## Ejecting media

Media is ejected automatically from the UDO drive only when a side or the complete media is full. For all other operations, media must be ejected manually.

---

*Note: Media cannot be ejected during read/write operations.*

---

To eject media from the UDO drive, press the drive button as shown:



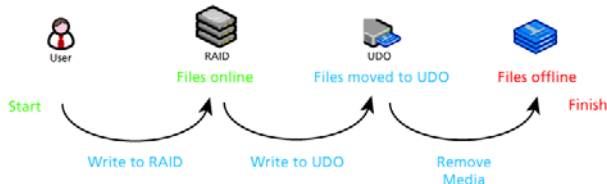
## Cleaning media

During normal operation, dust and other particles may contaminate the surface of the media causing read/write failure. In this case, the media should be cleaned - see "Organization and storage of offline media" on page 26

## Basic Operation

### Writing to UDO media

Files written to the AA Express via network shares are initially stored on the RAID storage volume. Files are then moved to UDO media. The AA Express records the sequence number of the UDO media containing the file so that it can be located when requested for reading.



### Writing files to the AA Express

The AA Express tracks only one piece of UDO media that is open for file writing at any one time. Under normal operation, once the media is full the AA Express marks the media as closed. The media can then be stored appropriately until requested for file reading.

### Blank media insertion

If a new blank piece of media is inserted into the UDO drive when a piece of open media already exists, the AA Express will mark the currently open media as closed even though it may not be full. Any remaining storage space on that media will be lost.

The AA Express issues an alert notification and displays the following in the **System - Status** section of the status page:



The AA Express will mark the inserted blank media as being the currently open one, assign it a new sequence number and begin writing files to it.

***Important:** Insert blank media into the AA Express only when requested.*

## Reading from UDO media

When users attempt to read files, the AA Express determines the sequence number of the UDO media that the file has been written to. If the media is not in the drive, the AA Express will issue a request to the operator that it be inserted. Once the media has been inserted into the drive, the files are copied back to the RAID storage volume and can be read by the user.



Reading files from the AA Express

## Media request queuing

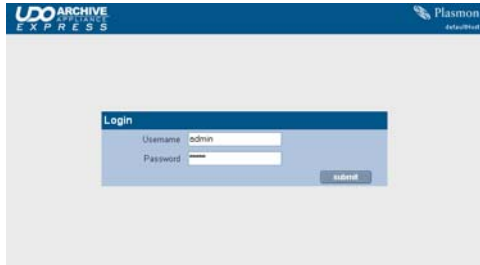
If the appropriate media is not loaded into the UDO drive, the AA Express “queues” read/write operations and their associated media requests. Queued operations are completed and their associated requests cleared automatically when the correct media and media side is loaded into the UDO drive.

## Starting the web interface

1. On a LAN-attached client, start a web browser (such as Microsoft Internet Explorer).
2. In the URL field, enter the IP address or hostname of the AA Express to configure. For example:

<http://192.168.0.1>


The Web interface log-in page loads:



3. Enter a valid AA Express Administrator User Name and Password.
  - This is not the same as a Windows Domain Administrator.
  - The default administrator username and password is **admin**. It is recommended that this is changed on first login (See the Administrator's Guid).
  - The default administrator can be used to add or remove additional administrator accounts.
4. Click **OK**.
5. The Web Interface **System - Status** page is displayed.

## System - Status page

The **System - Status** page gives an overview of the current status of the AA Express. The page also displays any actions that the AA Express requires the operator to perform.

System - Status		
<b>Activity</b>		
	Last Backup:	2007/10/04 02:01:56
	Last Migration:	0 migration completed in the last 24 hours
	Last Recall:	0 recall completed in the last 24 hours
	Last Replication:	No archives scheduled to be replicated
<b>Hardware</b>		
	Environmental: <b>OK</b>	 RAID(s): <b>OK</b>
<b>Media Management</b>		
	Drive empty	
	No action required	

### Status

The system status section displays alert messages relating to writing files to and reading files from UDO media.

### Activity

The activity section displays the date and time of the last file write and read operations performed by the system.


### Hardware

The hardware section displays information on the status of the RAID and the current environmental condition of the AA Express (temperature, fan speed etc.).

### Media management

The media management section displays information for the currently loaded media and indicates what operator action is required by the AA Express.

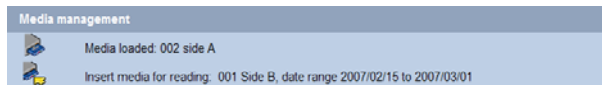
## Interface Refresh

The status page refreshes automatically every 20 seconds. To see status changes immediately, refresh the page using the browser refresh icon or click the  icon on the top right of the **System - Status** page.



## Action request notification

If the AA Express requires the operator to perform an action, it is displayed on the status page in the **Media Management** section.



The upper line of the Media Management section displays the media identification information. It indicates if the drive is empty or, if there is media in the drive, displays the sequence number and which side of the media is currently loaded. The lower line displays operator action requests - see "Action requests" on page 14.

The AA Express can also be configured to send action requests by email - see the **Plasmon Archive Appliance Express Administrator Guide**. If an action request is received, it should be performed promptly to ensure that the AA Express continues to operate correctly.

### Drive icons

The drive and media status icons used in the web interface are detailed below.



Drive Empty.



Insert media.



Media OK.



Media loaded.



Media write.



Media read.



Turn media over.



Remove media.



Find media.



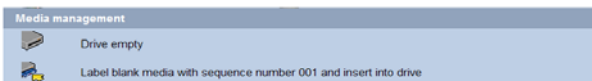
Incorrect or unrecognised media.

## Action requests

Please refer to this section to determine the action that must be taken by the operator in order for the AA Express to successfully write to or read from UDO media.

### New blank media required

If the status page displays:



the AA Express requires blank media in order to write files.

1. Label a piece of blank UDO media with the sequence number indicated (see "Media labelling" on page 6) and insert into the UDO drive ensuring side A is loaded (see "Inserting media" on page 7).
2. The AA Express initializes the media and displays:



3. Files can now be written to the media.

### Side A full

If the status page displays:



side A of the media is full and the media has been ejected.

1. Turn the media over and re-insert so that side B is loaded (see "Inserting media" on page 7).
2. The AA Express checks the media and displays:



3. Files can now be written to the media.

## Media full

If the status page displays:



both sides of the currently loaded media are full and the media has been ejected. The AA Express requires blank media in order to write files.

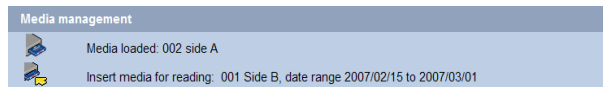
1. Remove the full media from the drive and enter the indicated date range on the media label. The media should then be stored appropriately - see "Organization and storage of offline media" on page 26.
2. Label a piece of blank UDO media with the indicated new sequence number (see "Media labelling" on page 6) and insert into the UDO drive ensuring side A is loaded.
3. The AA Express checks the media and displays:



4. Files can now be written to the media.

## Media required for reading files

If the status page displays:



the AA Express requires the insertion of a closed media to read files requested by a user.

1. Eject and remove the currently loaded media (see "Ejecting media" on page 8) noting which side (A or B) is facing upwards, to ensure correct orientation during re-insertion.
2. Locate the media with the requested sequence number and date range and insert into the UDO drive ensuring the correct media side is loaded.

3. The status page displays:



4. Files can now be read from the media

## Media required for writing files

If the AA Express displays:



the currently open media is required for writing files.

1. Insert the indicated currently open media ensuring the correct side is loaded.

---

*Important: Insert the already open media only. Inserting blank media into the AA Express when open media exists will result in wasted storage space.*

---

2. The AA Express checks the media and displays:



3. The AA Express can continue writing files to the media.

## Turn media over

If the status page displays:



the AA Express requires the media to be turned over in order to write or read files.

1. If required, eject and remove the media - see "Ejecting media" on page 8.
2. Turn media over and re-insert so that the requested media side is loaded.

### 3. The AA Express checks the media and displays:



## Data Protection

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*Note: Data protection in this context refers to the protection of AA Express system and configuration data. It does not refer to the protection of user data files.*

---

### Backup

Backup is initiated automatically when RW UDO media is inserted into the drive and protects system and file information for all closed media.

---

*Note: A backup accelerates the recovery process. Plasmon recommends a backup is performed each time media is closed.*

---

1. Insert RW UDO Media side A.
2. The AA Express will eject the media once the backup is complete, or when side A is full. If side B is required the **System - Status** page displays the message **flip backup media**. The administrator is also notified by SNMP / E-mail (if configured).  
Media cannot be manually ejected during a backup.
3. Store the backup media appropriately.

---

*Note: The AA Express does not provide Offline Media Management for backup media, and only the details of the most recent backup are retained and displayed.*

---

For full details of backup and recovery operations, see the [Archive Appliance Express Administrator's Guide](#).

## Troubleshooting

### Files cannot be written to UDO media

If files are not being written or the **Activity - Last write** section on the status page displays:


System – Status		
Activity		
	Last Write	0 writes in the last 24 hours

consult **Media Management** on the status page. File write failure may be caused by one or more of the following:

- Incorrect media or media side loaded, see:
  - [Media required for writing files](#) on page 16,
  - [New blank media required](#) on page 14,
  - [Media full](#) on page 15,
  - [Turn media over](#) on page 16.
- Media initialization failure - see:
  - [Initialization failure](#) on page 20.
- Drive or media failure - see:
  - [Open media read/write failure](#) on page 21.

### Files cannot be read from UDO media

If files cannot be read by a user or the **Activity - Last read** section on the status page displays:

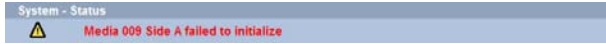
System – Status		
Activity		
	Last Read	0 reads in the last 24 hours

consult **Media Management** on the status page. File read failure may be caused by one or more of the following:

- Incorrect media or media side loaded, see:
  - [Media required for reading files](#) on page 15.
  - [Turn media over](#) on page 16.
- Drive or media failure - see:
  - [Open media read/write failure](#) on page 21
  - [Closed media read failure](#) on page 22

## Initialization failure

If the status page displays:

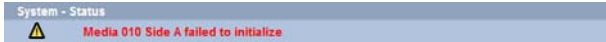


and

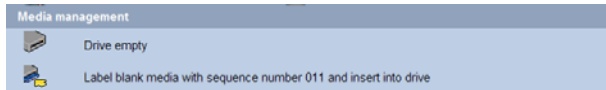


the inserted blank media has failed to initialize, the sequence number (009) is no longer usable.

1. Eject and remove the media from the drive.
2. Clean the media (see page 28) and place a blank media label over the existing one and write the indicated new sequence number (010) on to the label.
3. Re-insert the media in to the UDO drive.
4. If the media fails to initialise again, the status page displays:



and



5. Determine the cause of the initialization failure by inserting a different piece of media labeled with the indicated new sequence number (011). If this media fails then it can be assumed that the failure is caused by a drive error.
6. Follow the instructions included with the supplied cleaning cartridge to clean the UDO drive.
7. Place a blank media label over the existing one and write the indicated new sequence number (012) on to the label.
8. If the media fails again. The drive may be damaged. Contact technical support. All three media can be retained for future use.



*Note: The sequence numbers (009, 010, 011 and 012) are now unusable. Blank media labels should be attached to all three media to ensure that the sequence numbers are not used in the future.*

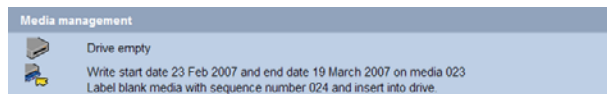
- If the second (011) or third media (012) initialize correctly, it can be assumed that the original media is damaged. Damaged media should be retained to indicate that the sequence number is unusable.

## Open media read/write failure

If the status page displays:



and



the AA Express has failed to read data from, or write data to, the currently open media. The media has been closed automatically and no further files will be written to it.

- Eject and remove the media from the drive and enter the indicated date range on the media label.
- Determine the cause of the read/write failure by inserting a different piece of media labeled with the indicated new sequence number (024). If a subsequent read/write failure occurs with the new media then it can be assumed that the failure is caused by a drive error.
- Follow the instructions included with the supplied cleaning cartridge to clean the UDO drive.
- Place a blank media label over the existing one and write the indicated new sequence number (025) on to the label.
- If the media fails again. The drive may be damaged, contact technical support. Both media can be retained for future use.

*Note: The sequence numbers (024 and 025) are now unusable. A blank media label should be attached to both media to ensure that the sequence numbers are not used in the future.*

- If no subsequent read/write error occurs, it can be assumed that the original media is damaged. The media may still be used for file reading and should be stored appropriately.

### Closed media read failure

If the status page displays:



The AA Express has failed to read from the UDO media. This may indicate a media or drive error. Contact technical support. The AA Express will continue to attempt to complete any queued reading tasks. If a subsequent read is successful the alert status message will be cleared.

### Media label missing

UDO media with missing labels can be identified by inserting the media into the UDO drive and consulting the web interface.

- Insert media with side A loaded.
- The AA Express checks the media and displays:



- Navigate to the **Storage - Offline Media** page of the web interface:

Media	Start	End	Status	Time ejected
001	01/02/07	10/02/07	Open	2006/12/08 04:26
002	10/02/07	19/02/07	Closed	2006/12/08 04:26
003	19/02/07	28/02/07	Closed	2006/12/08 04:26
004	28/02/07	09/03/07	Closed	2006/12/08 04:26
005	09/03/07	18/03/07	Closed	2006/12/08 04:26
006	18/03/07	27/03/07	Closed	2006/12/08 04:26
007	27/03/07	05/04/07	Closed	2006/12/08 04:26
008	05/04/07	14/04/07	Closed	2006/12/08 04:26
009	14/04/07	23/04/07	Closed	2006/12/08 04:26
010	23/04/07	02/05/07	Closed	2006/12/08 04:26
011	02/05/07	11/05/07	Closed	2006/12/08 04:26

Media 1 - 11 of 11

- Note the date range for the media (002)

5. Eject and remove the media.
6. Attach a new UDO media label (see [Media labelling](#) on page 6) and enter the sequence number and date range from the web interface.
7. The media should be stored appropriately.

---

*Warning: Inserting blank media into the AA Express when open media exists will result in wasted storage space.*

---

### Backup failure

If backup media has been ejected but the **Last Backup** time on the **System - Status** page has not been updated, the backup has failed due to a media fault. If configured, the AA Express will also send a notification to the administrator.

Replace the backup media.

---

*Note: If replacement backup media also fail, contact Plasmon Support.*

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***Chapter 3***  
***Media Management***

## Organization and storage of offline media

UDO Media used by the AA Express are identified by the media sequence number. Cataloging of offline media can be achieved by one of the three methods detailed below:

### By sequence number


Offline media is stored by sequence number. If required, the correct media can be further verified by referencing the date range requested by the AA Express with that entered on the media label.

### By date range

Offline media is stored chronologically by end date (date media was closed). If required, the media can be then further verified by referencing the sequence number requested by the AA Express with that entered on the media label.

### By barcode

Offline media is organised according to barcode. In order to determine which media is required, it is necessary to create a spreadsheet or table similar to the example below to reference the sequence number of the media and/or the date range of the media against the barcode. A template is provided on the system software CD supplied with your AA Express.

			Offline UDO media log	
AA Express Unit Name:				
Sequence number	Start date	End date	Barcode	Location
001				
002				
003				
004				
005				
006				
007				
008				
009				
010				

At the storage location, media should be organized using the last three characters of the barcode label in ascending alphanumeric order.

---

*Note: Barcode labels use an additional color coding system to act as a visual aid in locating media. The Plasmon AA Express barcode label number associated with a piece of media is unique.*

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## Storage and care recommendations

When media is not in the Appliance it can become contaminated due to the ingress of dust particles and is also susceptible to adverse temperature and relative humidity. It must therefore be stored appropriately to prevent damage or degradation.

---

*Note: The shutter on the media should not be opened manually as this exposes the media to potential contaminants.*

---

In the event that media becomes dirty, media cleaning kits are available from Plasmon.

Plasmon recommends that the media be stored in the plastic sleeve in which it was supplied and in accordance with the following temperature and humidity limits:

*Table 1: . UDO operating and storage conditions*

Parameter	Value/range
Maximum Temperature Range	5°C to 55 °C/41°F to 131 °F (stable temperature)
Ideal Temperature Range	10°C to 25°C/50°F to 77 °F
Maximum Humidity Range	3% to 90% RH (non-condensing)
Ideal Humidity Range	20% to 80% RH

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*Note: Plasmon recommend the use of a media rack, such as those produced by Engineered Data Products ([www.edp-usa.com](http://www.edp-usa.com) or [www.edpeurope.com](http://www.edpeurope.com)), for the long term storage of offline media.*

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# **UDO** **ARCHIVE** **EXPRESS** **APPLIANCE**

## *Chapter 4* *Glossary*

## Glossary of terms

The glossary below describes the meaning of some common terms used throughout the AA Express Operator's guide.

*Table 4-1: Glossary*

<b>Term</b>	<b>Meaning</b>
Archive	An archive is a set of system resources allocated for the storage of data.
Cartridge	The plastic housing that contains and protects the UDO media.
CIFS	Common Internet File System - the network protocol used by the Archive Appliance to allow access by windows clients.
Degraded	A RAID becomes degraded when one of a it's member disks fail.
DHCP	Dynamic Host Configuration Protocol - a method by which IP information is dynamically assigned to a client computer.
Directory	A file system entity which contains a group of files and/or other directories.
DNS	Domain Name Service - Translates meaningful domain names into IP addresses for network communication.
Ethernet	A standard for sending data packets across networks.
FSC	File System Catalog.

Table 4-1: Glossary

Term	Meaning
FTP	File Transfer Protocol - a protocol used for transferring data files across a TCP/IP network.
FQDN	Fully Qualified Domain Name - A fully qualified domain name is an unambiguous domain name that specifies the a computer's position in the DNS tree hierarchy absolutely.
GUI	Graphical User Interface - A program which allows a user to interact with computer systems without typing commands directly.
Host	A computer attached to a network.
Hostname	A name by which a host is known to other hosts on a network.
Hot spare	A Hot spare disk is used to replace a failed or removed SATA drive in a RAID configuration.
HTML	HyperText Markup Language - The text-based language used to transmit web pages for interpretation by browser programs.
IP	Internet protocol - a data-oriented protocol used for communicating data across a network.
IP Address	Internet Protocol Address uniquely identifies the Appliance on the TCP/IP network.
LAN	A Local Area Network is a computer network covering a small geographic area.

Table 4-1: Glossary

<b>Term</b>	<b>Meaning</b>
Migration	Moving files from the Appliance's RAID storage volume to UDO media.
NAS	Network Attached Storage - dedicated data storage technology which can be connected directly to a computer network to provide centralized data access and storage to heterogeneous network clients.
Network Shares	A network share is a location on an Archive appliance accessible via any of the configured network protocols.
NFS	Network File System - the network protocol used by the Appliance to allow access by Unix and Linux clients.
Operating system	A program that manages system resources and provides a user interface and an application interface, making it possible for programs to run.
Partition	An area of hard disk (or RAID) reserved for a particular operating system or application.
RAID	Redundant Array of Inexpensive Disks - a data storage scheme using multiple SATA disks to share or replicate data among the disks for the purposes of data protection.
Recall	Copying files that have been migrated to UDO media back to the RAID storage volume.

Table 4-1: Glossary

Term	Meaning
Resynch	Following a single disk RAID failure, data on the remaining operational disk(s) is used to rebuild the data set on a replacement disk.
SATA	Serial Advanced Technology Attachment - a computer bus technology designed for transfer of data to and from hard disks and optical drives.
SCSI	Small Computer System Interface - a set of standards for physically connecting and transferring data between computers and peripheral devices.
Server	A program which responds to clients requests, which are generally transmitted over a network.
Sequence Number	The AA Express assigns a unique sequence number to each piece of UDO media during initialization.
Shutter	Spring-loaded door protecting the surface of the UDO media.
SMTP	Simple mail transfer protocol - The defacto standard for e-mail transmissions across the Internet.
SNMP	Simple Network Management Protocol - Used by network management systems to monitor network-attached devices for conditions that warrant administrative attention.

Table 4-1: Glossary

<b>Term</b>	<b>Meaning</b>
SSH	Secure SHell, a protocol that allows data to be transferred securely between two hosts.
Storage Volume	Dedicated storage area on the AA Express RAID where user files are stored before being moved to UDO media for permanent storage.
TCP	Transmission Control Protocol - one of the core protocols of the Internet protocol suite and allows applications on networked hosts to create connections to one another, over which they can exchange streams of data.
UPS	Uninterruptible Power Supply - A device which maintains a continuous supply of electric power to the Archive Appliance by supplying power from a separate source (usually a battery) when mains power is not available.
UDO	Ultra Density Optical - Plasmon's optical disk format designed for high-density data storage.
WORM	Write-once, read many - storage media that can only be written to once, but read from multiple times.



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