

# ARX<sup>®</sup>–1500/2500 Hard Drive FRU

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This is a Class A product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

### FCC Compliance

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This unit generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user, at his own expense, will be required to take whatever measures may be required to correct the interference.

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Any modifications to this device, unless expressly approved by the manufacturer, can void the user's authority to operate this equipment under part 15 of the FCC rules.

### **Canadian Regulatory Compliance**

This Class A digital apparatus complies with Canadian ICES-003.

### **Standards Compliance**

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### **Revision History**

September 2012 — First printing for hardware release.



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# About Replacing Hard Drives

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This document describes how to remove and insert the ARX-1500 and ARX-2500 replaceable hard disk drives.

## Before You Begin

When returning a disk drive, power supply, or the entire ARX, you must include the serial number for the chassis. In some cases, you also need to include the base MAC address for the chassis.

Use the **show chassis** command to obtain the serial number. If you cannot reach the CLI, read the serial number on the front, righthand side of the chassis (under the cooling holes).

See the following example output for the **show chassis** command.

```
canbyA# show chassis
```

```
Identification:
Hostname                               UUID
-----
canbyA                                 64a6417e-cc3d-11df-80ca-a73fbeb72ef8

Chassis:
Chassis Type  Model Number                Serial Number
-----
ARX-1500      ARX1500LE-F5                            XX-ABCD-0509

Chassis Environment:
Base MAC Address  Power          Fan(setting)  System Temp.  CPU Temp.
-----
00:0a:49:75:5d:00  Online        Online (high)  Normal 30 C   51 C
```

```
Power Details:
Supply  State
-----  -----
A       Online
B       Online
```

The disk drives are accessible from the front of the chassis, as called out in [Figure 1.1](#).

As a general rule, perform all replacements on the secondary (also called *backup* or *junior*) device. In particular, perform disk drive replacements on the secondary device.

**◆ WARNING**

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*Static electricity can damage device components. Be sure to wear antistatic straps before handling hardware modules and disk drives.*

## Replacing the Disk Drives

Replacing disk drives on the ARX-1500 / ARX-2500 platforms is a hot-swap procedure and does not require powering down the device nor does it involve a loss of service.

If you do not replace a failed drive, the system continues to run, in a degraded state, with the disk missing from the RAID set. Best practices dictate that you replace failed disk drives. To achieve maximum performance and avoid service interruptions, replace disk drives on the secondary (backup) device only. If necessary, fail over the device before starting the replacement process.

Simply replacing a failed disk does not incorporate the newly-installed replacement disk into the RAID set nor does it initiate the process of rebuilding the RAID set. After replacing a disk, be sure to rebuild the RAID set. For instructions, see [Rebuilding the RAID Set](#), on page 1-4.

As shown in the following figure, the ARX-1500 contains two hot-swap, hard disk drives. The disk drives are in the same location on the ARX-2500.

**Figure 1.1** ARX-1500 disk drive location



The bays are clearly labeled on the device and designated in the CLI as Bay 1 (top drive) and Bay 2 (bottom drive).

Note that each disk drive includes 2 LEDs. The LED on the left indicates power and the LED on the right indicates drive activity.

The system notifies you of an internal disk failure (or potential failure) through the CLI or an SNMP trap. If you receive an email notification of an internal disk failure, consult the *ARX SNMP Reference* in the section *Disks (Internal to the ARX)*.

**◆ Important**

*Before replacing a drive, verify that the bay number (of the drive you are about to replace) matches the bay number of the failed drive (from the CLI or the SNMP trap).*

**To replace a disk drive:**

1. From the CLI, ensure that the primary device is fully functional by entering the **show redundancy** command.
2. From the CLI, enter the **show chassis diskuse** command to determine the bay number of the offline or failed drive.

For example, the following ARX-1500 output from the **show chassis diskuse** command shows two disks installed and the disk in bay 2 as **Failed**:

```
canbyA# show chassis diskuse
```

```
Logical Disk Details:
```

Disk	Status	Verification Mode	Verification Rate
1	Optimal	Automatic	10 %

```
Disk Details:
```

Disk	Size	State	Transfer Rate	Model
Bay 1	136.91G	Online	3.0Gb/sec	HUC103014CSS600
Bay 2	136.91G	Failed	3.0Gb/sec	HUC103014CSS600

```
RAID Controller Details:
```

Rebuild Rate	Max Transfer Rate	Firmware	RAID Alarm
90 %	3.0Gb/sec	5.2-0[17945]	Enabled

Disk Usage:	Total MB	Used MB	Free MB	Used%
Name				
-----	-----	-----	-----	-----
System	3173	1720	1291	58%
Releases	6345	3395	2628	57%
Logs	52838	330	49823	1%
Cores; DiagInfo; Lists	21133	116	19943	1%
Scripts	3172	58	2952	2%
Reports	8458	34	7994	1%
...				

3. Slide the latch (silver button, left side of the drive carrier) to the left to release the drive lever.
4. Grasp the lever and gently slide the drive out of the slot.
5. Insert the replacement drive into the slot.
6. Press the replacement drive gently to lock the lever and fully seat the drive.

## Silencing the RAID Alarm

If an audible alarm goes off after you remove a drive, you can silence it with the **raid silence** command entered from the CLI (priv-exec mode).

For example, the following command sequence logs into a device at address 10.1.33.105, enters **enable** to go to priv-exec mode, and silences the RAID alarm:

```
$ telnet 10.1.33.105
Trying 10.1.33.105...
Connected to 10.1.33.105.
Escape character is '^]'.
Username: admin
Password: password
canbyA> enable
canbyA# raid silence
canbyA# ...
```

## Rebuilding the RAID Set

Simply replacing a failed disk does not incorporate the newly-installed disk into the RAID set nor does it initiate the process of rebuilding the RAID set.

To enable the newly-installed disk to join the RAID set, issue the **raid rebuild** command from the CLI priv-exec mode:

```
canbyA# raid rebuild {disk1 | disk2}
```

where disk1 | disk2 specifies the disk to rebuild. (The disk in bay 1 is disk1.)

For example, the following command rebuilds the disk in bay 2:

```
canbyA# raid rebuild disk2
canbyA# ...
```



Rebuilding the RAID set places a load on the disk subsystem. In particular, the ARX-1500 and ARX-2500 write their metalog data to the RAID set, and managed-volume performance is affected if these writes are slowed.

The ARX-1500 and ARX-2500 write all of their metalog data both to the active peer and the backup peer at the same time, so a **raid rebuild** on the backup peer still affects managed-volume processing on the active peer.

Thus, to achieve maximum performance on the active device during the rebuilding process and to avoid service interruptions, we recommend performing the rebuild on the secondary (backup) device and during off hours only.

## Monitoring the RAID Set Rebuild

A disk rebuild can take more than an hour. To monitor the progress of the rebuild, you can issue the **show chassis diskuse** command to see a percentage-complete meter. For more information, see *RAID Management* in the *ARX CLI Reference*.

