M-Series
Statement of Volatility

Version 1.0

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TrueNAS® M-Series Storage Appliance: Statement of Volatility

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The iXsystems TrueNAS® M-Series Storage Appliance contains both volatile and non-volatile (NV) components. Volatile components lose stored data after power is removed. NV components can retain sensitive user or administrative data even after power is removed. For example, a TrueNAS® SATADOM stores the M-Series Storage Appliance configuration details and a SLOG device can retain write records for data stored on the M-Series Storage Appliance.

This document provides descriptions and data clearing procedures for the non-volatile components that can retain sensitive data in a TrueNAS® M-Series Storage Appliance. Components that do not store sensitive data on volatile or NV memory are not discussed.

Non-Volatile (NV) Components: Administration Data

These components store data related to managing the TrueNAS® appliance. This can include passwords, network information, and system logs.

Component	Description	Size	How to Clear Data
BIOS Password	Password to change BIOS settings	64 MiB	Power down the system and unplug the power cord from the power outlet. Remove one TrueNAS controller, and remove the coin cell battery from it. Short the CMOS pads (**JBT1**) for at least four seconds using a screwdriver or other small metal object. Re-install the battery and TrueNAS controller. Power on the system and verify the previous BIOS password is no longer valid. Repeat for all TrueNAS controllers.
BMC	Server management and management port network information	128 MiB	Reset the BMC to the factory defaults: Log in to the M-Series Storage Appliance IPMI web interface. Open the *Maintenance* drop-down menu and click *Factory Default*. Click *Restore* to erase all custom settings and reset the device to the original factory configuration.

Continued on next page

Table 1 – continued from previous page

Component	Description	Size	How to Clear Data
SATADOM	Operating system boot device. Stores system logs and configuration data.	32 GiB	There are two SATADOMs used in a mirrored configuration. To clear a SATADOM, see procedures #2 or #3 in *Clearing Disks* (page 3).

Non-Volatile (NV) Components: User Data

These components can store data that has been uploaded or otherwise created by the system users.

Component	Description	Size	How to Clear Data
L2ARC	Read cache extension	Varies	Not every TrueNAS® M-Series Storage Appliance is configured with L2ARC devices. A single system reboot is typically sufficient to render the L2ARC device information unusable. L2ARC disks can be wiped to ensure data is cleared. See *Clearing Disks* (page 3) for different wipe procedures.
SLOG	Write cache extension	Varies	Not every TrueNAS® M-Series Storage Appliance uses SLOG devices. Removing user data requires wiping the SLOG disks. See *Clearing Disks* (page 3) for different wipe procedures.

Clearing Disks

Removal of non-volatile data from disks can be done in several ways. Local security policies should be consulted to verify which methods are acceptable for any given disk.

1. Disks can be erased in the TrueNAS® system by detaching them from the pool, then erasing with the TrueNAS® Disk/Wipe/Full with Zeros method. This writes zeros to the entire disk.
2. Disks can be erased with utilities like dd (https://www.freebsd.org/cgi/man.cgi?query=dd), DBAN (https://dban.org/), or other disk erasure tools. This might require connecting the disk to a computer running a different operating system.
3. Disks can be physically removed and sanitized in accordance with security best practices (https://www.nsa.gov/Portals/70/documents/resources/everyone/media-destruction/PM9-12.pdf?ver=2019-05-16-075903-503).

For questions or further information about this Statement of Volatility, contact iXsystems Product Management (product-truenas@iXsystems.com)

For more information about iXsystems storage products, please visit https://www.ixsystems.com/storage/ or contact iXsystems Sales (sales@iXsystems.com).