

Lab Report

SED HDD Management Using MaxView Storage Manager

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Introduction

Self-Encrypting Drives (SEDs) offer hardware-based encryption for data-at-rest, providing enhanced security with minimal impact on performance. This HDD Innovation Lab report explores the management and behaviour of Toshiba enterprise SEDs using the MaxView Storage Manager software in conjunction with the Adaptec SmartRAID Ultra 3258P-16i/e controller. The goal is to evaluate SED functionality, controller-based encryption, and drive behaviour under various security scenarios.

Methodology

All tests were conducted on a Supermicro X13DEI motherboard running Microsoft Windows Server 2025 Standard. The MaxView Storage Manager version used was 5.03.00 (27960), and the RAID/HBA controller was Adaptec SmartRAID Ultra 3258P-16i/e running firmware version 03.01.41.032. The drives were configured and managed via the controller's SED-based encryption features as documented in Microchip's official guide.



Picture 1: Supermicro server used for evaluating maxView Storage Manager software and SED functionality.



Picture 2: Toshiba MG11SCP24TE SED drive

Test Setup

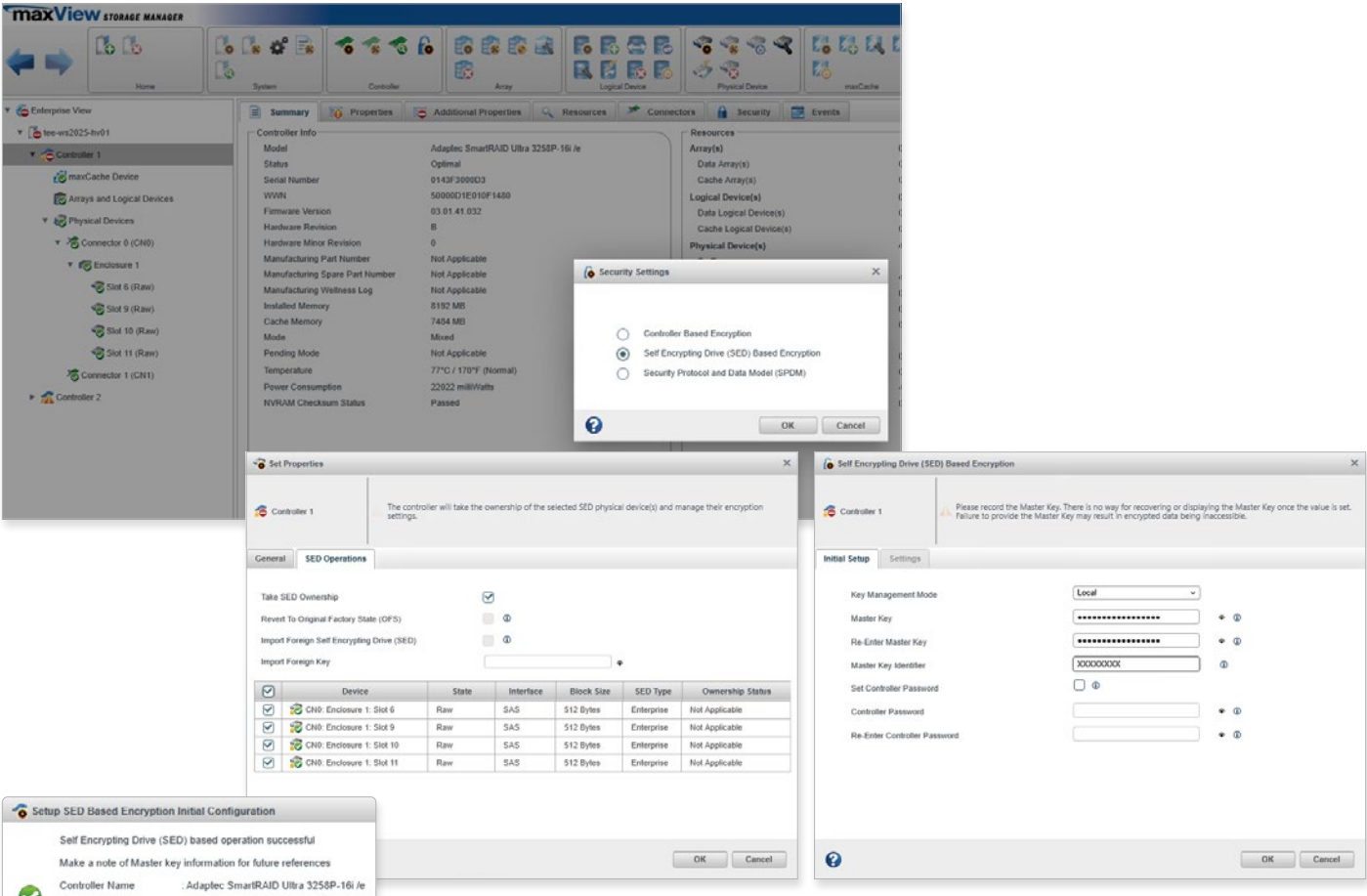
- All HDDs had the latest firmware installed.
- SED encryption was enabled on the controller.
- A master key was set for encryption management.
- Drive claiming and ownership were verified via MaxView.
- Tests included encryption setup, physical security ID (PSID) reset, drive removal, and re-enabling encryption.

HDD Models Evaluated

Toshiba HDD Model	Capacity	Interface	Firmware Status
MG10SFP22TE	22TB	SAS	Latest
MG08SCP16TE	16TB	SAS	Latest
MG11SCP24TE	24TB	SAS	Latest
MG11SCP24TE	24TB	SAS	Latest

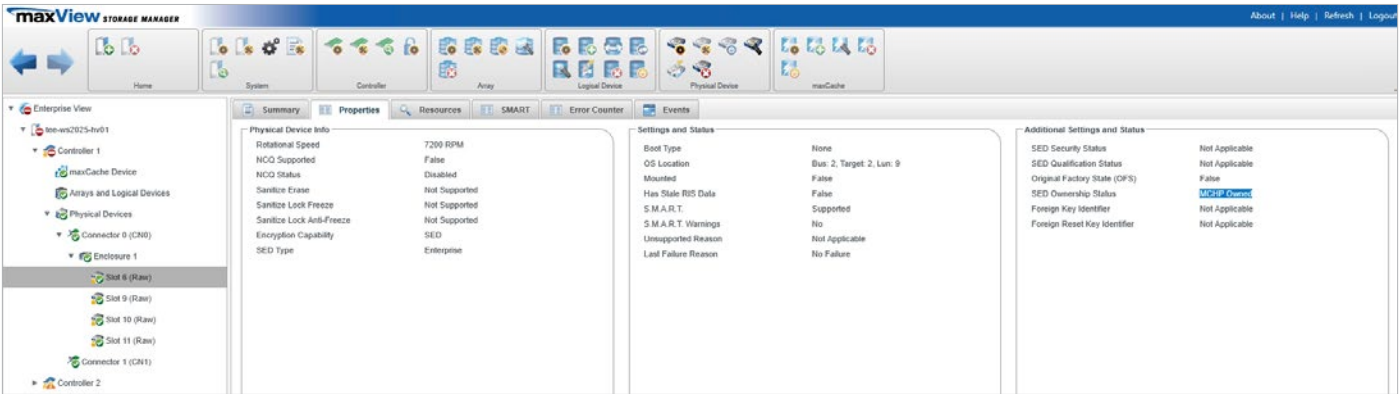
Test Results

Drive Claiming and Encryption Setup



Picture 3-6: Self Encryption Drive (SED) base encryption wizard

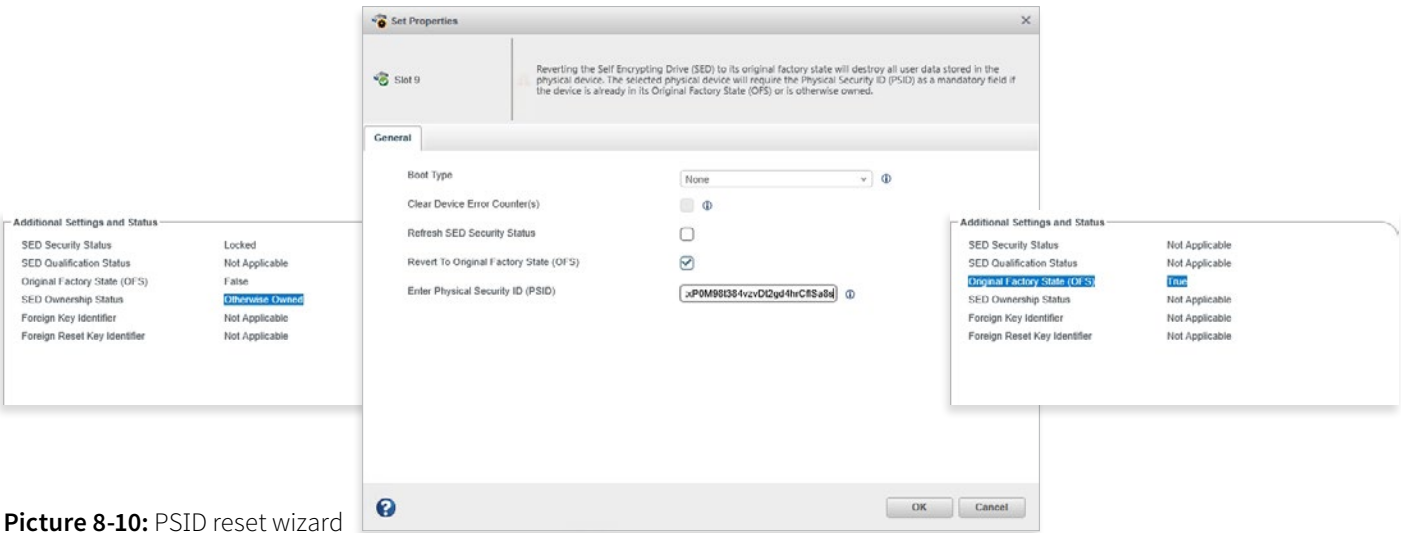
All drives were successfully claimed by the controller. SED status was correctly reported in MaxView. The master key was applied and verified.



Picture 7: Drive in MCHP Owned state

PSID Reset

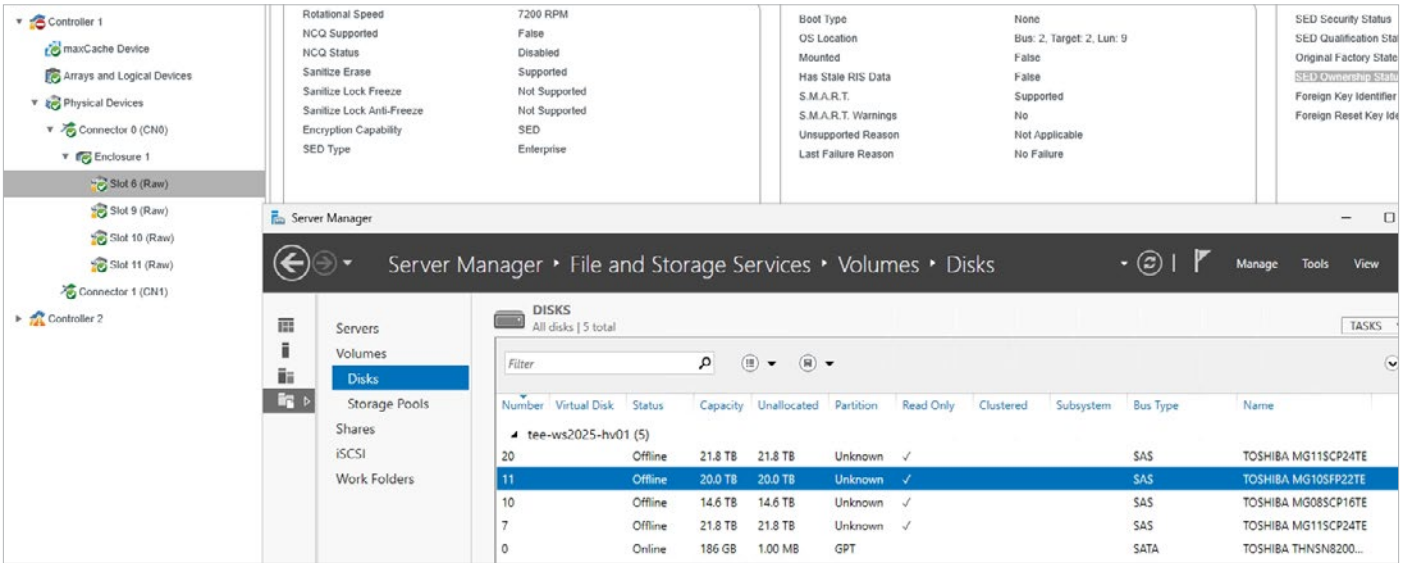
The MG10SFP22TE drive was reset using the PSID. Post-reset, the drive returned to its original factory state (OFS). The drive was then successfully re-integrated into the controller with encryption enabled.



Picture 8-10: PSID reset wizard

Drive Removal and Re-insertion

All four drives were encrypted and exposed to the Windows Server host.

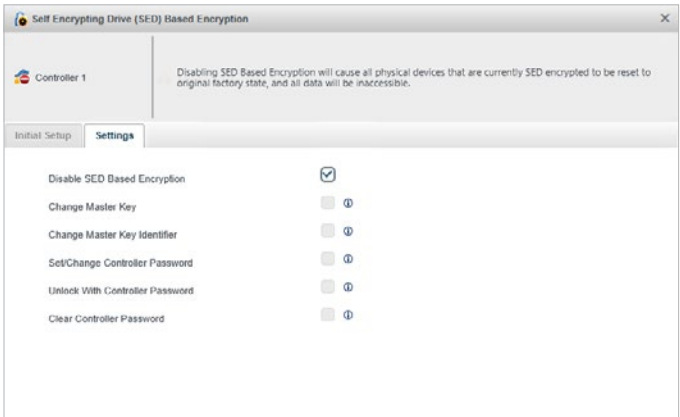


Picture 11: Drive unlocked

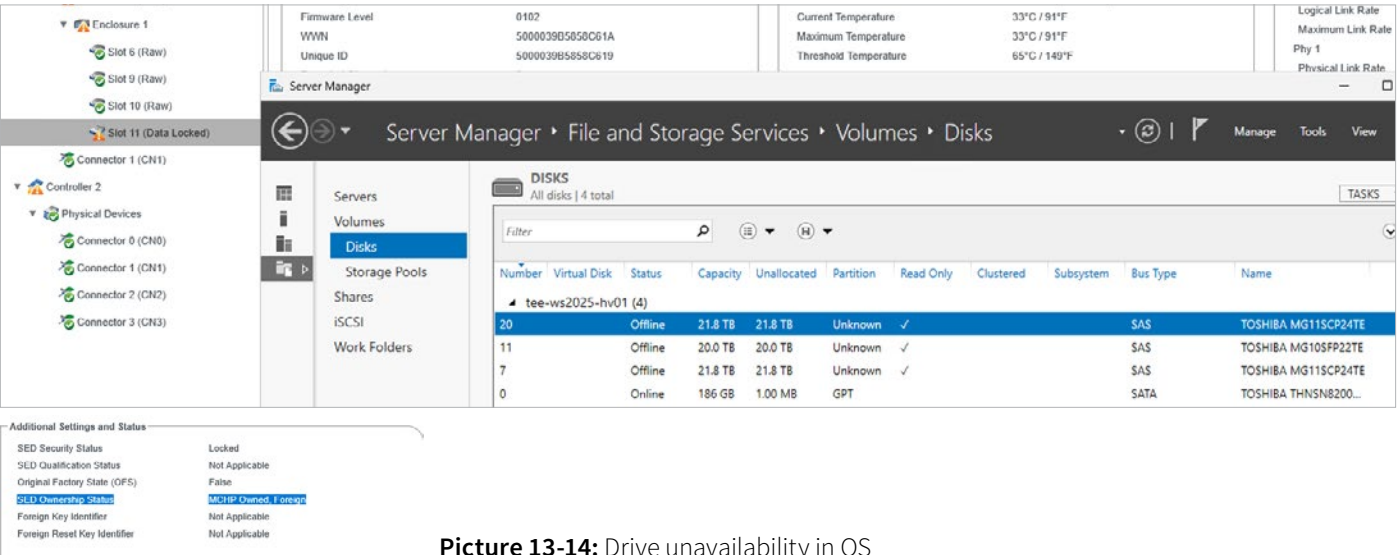
The MG08SCP16TE drive was removed while SED was active. SED was disabled on the controller.

Upon re-insertion with SED disabled, the drive (in “MCHP Owned, Foreign” SED Ownership Status), was no longer exposed to the OS.

Re-enabling SED with the same master key restored access, confirming encryption integrity.



Picture 12: SED Encryption disabled



Picture 13-14: Drive unavailability in OS

Functionality Evaluation

Feature	Result	Notes
SED Detection	✔ Successful	All drives detected as SED-capable
Controller-Based Encryption	✔ Functional	Master key applied and verified
PSID Reset	✔ Successful	Drive returned to OFS
Drive Lockout on SED Disable	✔ Verified	Data inaccessible without master key
Re-encryption with Master Key	✔ Successful	Drive access restored

Summary

Toshiba’s HDD Innovation Lab confirmed the robust functionality of Toshiba SED HDDs when managed via MaxView Storage Manager and the Adaptec SmartRAID Ultra 3258P-16i/e controller. Key findings include:

- Reliable SED detection and encryption setup.
- Effective PSID reset and reclaiming of previously owned drives.
- Secure lockout behaviour when SED is disabled.
- Seamless restoration of access upon re-enabling encryption with the correct master key.

These results validate the use of Adaptec controller-based SED management for secure enterprise storage deployments.

Further reading:

[An introduction to SEDs](#)

[Working with SED based encryption](#)

[Managed SED drives on Adaptec controllers](#)

[Passive SED on Adaptec controllers](#)

Note of thanks to our partners

“Critical to the success of this lab report has been the collaboration. I would like to thank our partner Microchip for the support on this project, as they contributed the Adaptec SmartRAID Ultra 3258P-16i/e controller and valuable support and advice. Together with our Toshiba SED Hard Disk Drive models, we were able to prove all SED functionality in a real-life storage system.”

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Interested in performing a test in
our lab yourself or planning a visit?
We'd be happy to support you.



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