

Problem determination and troubleshooting

How to perform problem determination actions on the ST45 V3

Lenovo

Problem determination and troubleshooting overview

Perform the following actions to determine the cause of problems on the ST45 V3:

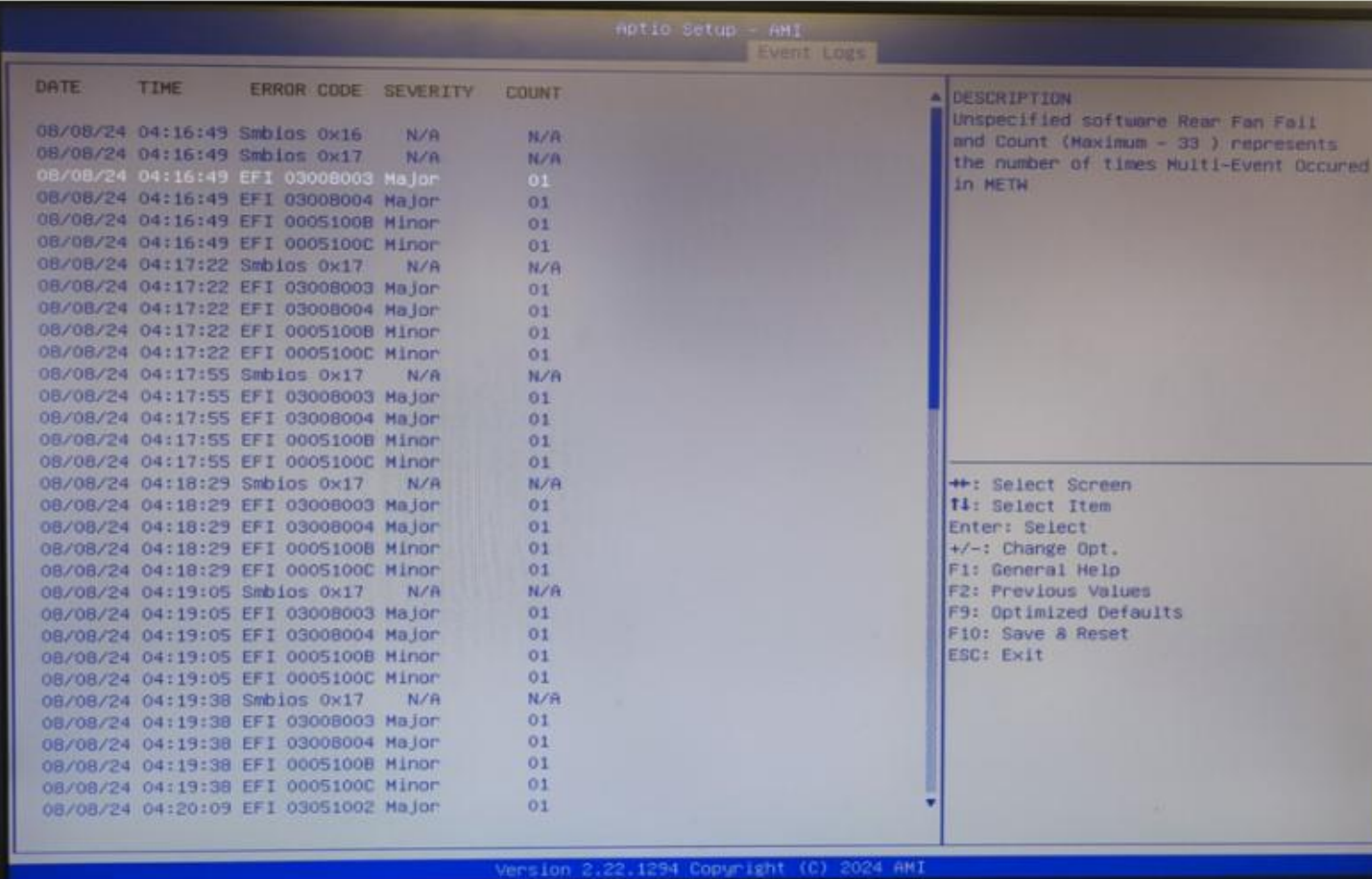
- Check the event log in UEFI
- Check the LEDs on the system
- Use LXPM Lite to collect RAID-related logs for escalation

Note:

- The ST45 V3 does not support XClarity Controller or OneCLI. Unlike on other ThinkSystem V3 servers, these tools cannot be used to collect service data.
- The ST45 V3 does not support either the integrated or external LCD diagnostics panels.

Event logs in UEFI

ST45 V3 event logs are available in the BIOS setup. Go to F1 BIOS setup utility → **Event Log** → **Smbios Event Log** page to check the event log list for possible part failure messages. Click [HERE](#) to see the list of failure error codes for ST45 V3 parts.



The screenshot shows the 'Event Logs' screen in the Aptio Setup - AMI BIOS. The screen displays a table of event logs with columns for DATE, TIME, ERROR CODE, SEVERITY, and COUNT. The events are listed in chronological order, starting from 08/08/24 04:16:49. The events include Smbios 0x16, Smbios 0x17, and EFI 03008003, 03008004, 0005100B, and 0005100C. The severity levels are N/A, Major, and Minor. The counts are N/A or 01. A description on the right side of the screen explains that the count represents the number of times the multi-event occurred in METW. A legend at the bottom right lists navigation keys: ++ for Select Screen, F1 for Select Item, Enter for Select, +/- for Change Opt., F1 for General Help, F2 for Previous Values, F9 for Optimized Defaults, F10 for Save & Reset, and ESC for Exit. The version number 2.22.1294 and copyright (C) 2024 AMI are displayed at the bottom.

DATE	TIME	ERROR CODE	SEVERITY	COUNT	DESCRIPTION
08/08/24	04:16:49	Smbios 0x16	N/A	N/A	Unspecified software Rear Fan Fail and Count (Maximum - 33) represents the number of times Multi-Event Occurred in METW
08/08/24	04:16:49	Smbios 0x17	N/A	N/A	
08/08/24	04:16:49	EFI 03008003	Major	01	
08/08/24	04:16:49	EFI 03008004	Major	01	
08/08/24	04:16:49	EFI 0005100B	Minor	01	
08/08/24	04:16:49	EFI 0005100C	Minor	01	
08/08/24	04:17:22	Smbios 0x17	N/A	N/A	
08/08/24	04:17:22	EFI 03008003	Major	01	
08/08/24	04:17:22	EFI 03008004	Major	01	
08/08/24	04:17:22	EFI 0005100B	Minor	01	
08/08/24	04:17:22	EFI 0005100C	Minor	01	
08/08/24	04:17:55	Smbios 0x17	N/A	N/A	
08/08/24	04:17:55	EFI 03008003	Major	01	
08/08/24	04:17:55	EFI 03008004	Major	01	
08/08/24	04:17:55	EFI 0005100B	Minor	01	
08/08/24	04:17:55	EFI 0005100C	Minor	01	
08/08/24	04:18:29	Smbios 0x17	N/A	N/A	
08/08/24	04:18:29	EFI 03008003	Major	01	
08/08/24	04:18:29	EFI 03008004	Major	01	
08/08/24	04:18:29	EFI 0005100B	Minor	01	
08/08/24	04:18:29	EFI 0005100C	Minor	01	
08/08/24	04:19:05	Smbios 0x17	N/A	N/A	
08/08/24	04:19:05	EFI 03008003	Major	01	
08/08/24	04:19:05	EFI 03008004	Major	01	
08/08/24	04:19:05	EFI 0005100B	Minor	01	
08/08/24	04:19:05	EFI 0005100C	Minor	01	
08/08/24	04:19:38	Smbios 0x17	N/A	N/A	
08/08/24	04:19:38	EFI 03008003	Major	01	
08/08/24	04:19:38	EFI 03008004	Major	01	
08/08/24	04:19:38	EFI 0005100B	Minor	01	
08/08/24	04:19:38	EFI 0005100C	Minor	01	
08/08/24	04:20:09	EFI 03051002	Major	01	

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Failure error codes in the event logs



Error code	Event description
03008000	Memory size changed
03008001	Password retry count
03008002	CPU fan fail
03008003	Rear fan fail
03008004	Front fan fail
0005100B	Unqualified DIMM 1
0005100C	Unqualified DIMM 2

Unexpected power shut down problem

If there is an unexpected power shut down, perform the following problem determination steps:

1. Power off the system and open the server cover to check if there are any loose screws in the system – a loose screw might cause a short circuit issue.
2. Remove the adapters and disconnect all the cables and power cords to all internal and external devices until the server is at the minimum configuration required for the server to start.

The minimum configuration is:

- One processor and its fan and heat sink module
 - One 16 GB ECC UDIMM in DIMM slot 1
 - Power supply unit
 - One 3.5-inch ATA drive in the drive bay 0
 - System fans
3. Reconnect the AC power cord and power on the server. If the server starts successfully, reinstall the adapters or other devices one at a time until the problem has been isolated.

Lenovo Provisioning Manager Lite

The ST45 V3 supports Lenovo Provisioning Manager Lite (LXPM Lite). To check the memory or drive health status, users can go to the LXPM Lite **Diagnostics** page to run **Memory Test** or **HDD Test**. Use the RAID Log option to collect RAID adapter logs for RAID adapter problem escalation. For more information about LXPM Lite diagnostic features, refer to the *Diagnostics* section of the *LXMP Lite User Guide* on [Lenovo Support](#).

