View boot-up status and review error codes on SG5600 controllers

StorageGRID

NetApp
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View boot-up status and reviewing error codes on SG5600 controllers

The seven-segment display on each controller shows status and error codes when the appliance powers up, while the hardware is initializing, and when the hardware fails and must back out of the initialization. If you are monitoring the progress or troubleshooting, you should watch the sequence of the codes as they appear.

About this task

The status and error codes for the E5600SG controller are not the same as those for the E2700 controller.

Steps

1. During boot-up, view the codes shown on the seven-segment displays to monitor progress.
2. To review error codes for the E5600SG controller, see the seven-segment display status and error code information.
3. To review error codes for the E2700 controller, see the E2700 controller documentation on the Support Site.

Related information

E5600SG controller seven-segment display codes

NetApp Documentation: E2700 Series

E5600SG controller seven-segment display codes

The seven-segment display on the E5600SG controller shows status and error codes while the appliance powers up and while the hardware is initializing. You can use these codes to determine status and troubleshoot errors.

When reviewing status and error codes on the E5600SG controller, you should look at the following types of codes:

- **General boot-up codes**

  Represent the standard boot-up events.

- **Normal boot-up codes**

  Represent the normal boot-up events that occur in the appliance.

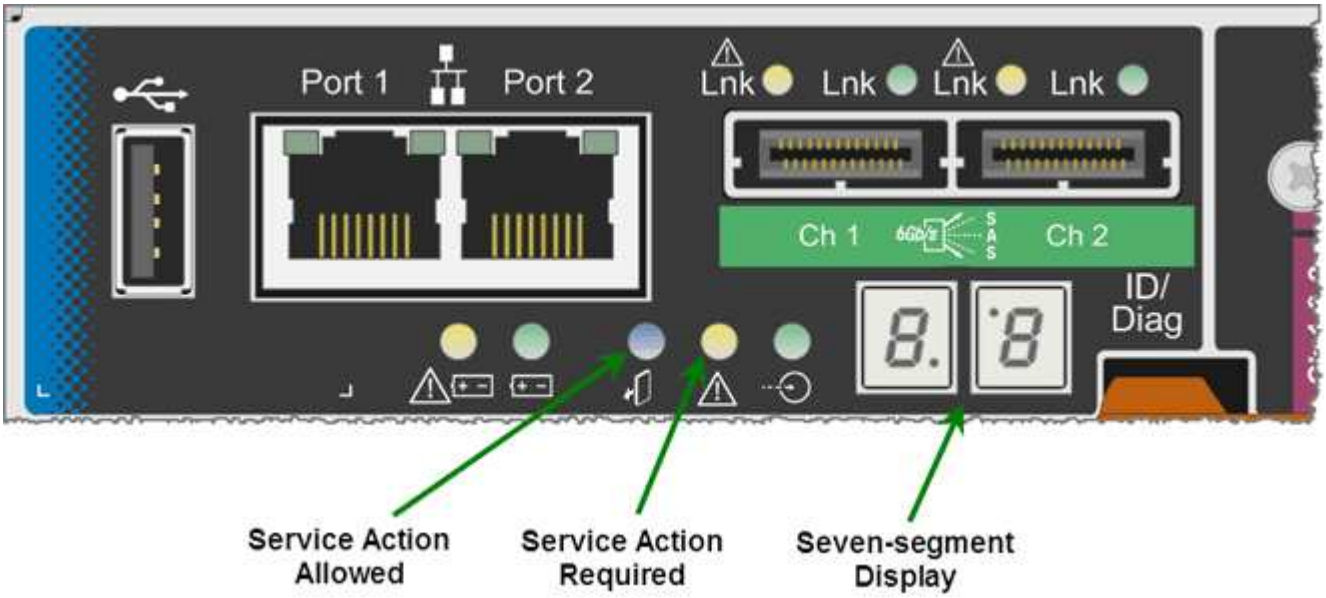
- **Error codes**

  Indicate issues during the boot-up events.

StorageGRID controls only the following LEDs on the E5600SG controller and only after the StorageGRID Appliance Installer has started:

- Service Action Allowed LED
- Service Action Required LED

- Seven-segment display



The decimal points on the seven-segment display are not used by the StorageGRID appliance:

- The upper decimal point adjacent to the least significant digit is the platform diagnostic LED.

  This is turned on during reset and initial hardware configuration. Otherwise, it is turned off.

- The lower decimal point adjacent to the most significant digit is turned off.

To diagnose other issues, you might want to look at these resources:

- To see all other hardware and environmental diagnostic information, see the E-Series operating system hardware diagnostics.

  This includes looking for hardware issues such as power, temperature, and disk drives. The appliance relies on the E-Series operating system to monitor all platform environmental statuses.

- To determine firmware and driver issues, look at the link lights on the SAS and network ports.

  For details, see the E-Series E5600 documentation.

General boot-up codes

During boot-up or after a hard reset of the hardware, the Service Action Allowed and the Service Action Required LEDs come on while the hardware is initializing. The seven-segment display shows a sequence of codes that are the same for E-Series hardware and not specific to the E5600SG controller.

During boot-up, the Field Programmable Gate Array (FPGA) controls the functions and initialization on the hardware.

Code	Indication
19	FPGA initialization.

Code	Indication
68	FPGA initialization.
…	FPGA initialization.This is a quick succession of codes.
AA	Platform BIOS booting.
FF	Bios boot-up complete.This is an intermediate state before E5600SG controller initializes and manages LEDs to indicate status.

After the AA and FF codes appear, either the normal boot-up codes appear or error codes appear. Additionally, the Service Action Allowed and the Service Action Required LEDs are turned off.

Normal boot-up codes

These codes represent the normal boot-up events that occur in the appliance, in chronological order.

Code	Indication
HI	The master boot script has started.
PP	The platform FPGA firmware is checking for updates.
HP	The host interface card (HIC) is checking for updates.
RB	After firmware updates, the system is rebooting, if necessary.
FP	The firmware update checks have been completed. Starting the process (utmagent) to communicate with and manage the E2700 controller. This process facilitates appliance provisioning.
HE	The system is synchronizing with the E-Series operating system.
HC	The StorageGRID installation is being checked.
HO	Installation management and active interfacing are occurring.
HA	The Linux operating system and StorageGRID are running.

E5600SG controller error codes

These codes represent error conditions that might be shown on the E5600SG controller as the appliance boots up. Additional two-digit hexadecimal codes are displayed if specific low-level hardware errors occur. If any of these codes persists for more than a second or two, or if you are unable to resolve the error by following one of the prescribed troubleshooting procedures, contact technical support.

Code	Indication
22	No master boot record found on any boot device.
23	No SATA drive installed.
2A, 2B	Stuck bus, unable to read DIMM SPD data.
40	Invalid DIMMs.
41	Invalid DIMMs.
42	Memory test failed.
51	SPD reading failure.
92 to 96	PCI bus initialization.
A0 to A3	SATA drive initialization.
AB	Alternate boot code.
AE	Booting OS.
EA	DDR3 training failed.
E8	No memory installed.
EU	The installation script was not found.
EP	"ManageSGA" code indicates that pregrid communication with the E2700 controller failed.

Related information

Troubleshoot hardware installation (SG5600)

NetApp Support

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