

G2DERO-B Dual-Socket Motherboard (EATX Standard Motherboard)

User Manual V1.2



Preface

This manual is the product technical manual of the dual-socket motherboard G2DERO-B, which mainly introduces the parameters, configuration, installation method and basic operation of this product.

This manual is for professional system integrators and personal computer technicians to refer to and study. This product should only be installed and maintained by experienced technicians.

Manual Structure

Chapter 1 Product Introduction

This chapter provides the specifications of the motherboard and describes the main features.

Chapter 2 Hardware Installation

This chapter describes the installation method and main connectors of various main system components of the motherboard.

Chapter 3 BIOS Parameter Setting Instructions

This chapter mainly introduces the parameter settings and main functions of the system BIOS.

Chapter 4 RAID Setup Instructions

This chapter mainly introduces how to configure RAID.

Chapter 5 IPMI Deployment

This chapter mainly describes how to quickly deploy IPMI.

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Glossary:

Noun	Paraphrase
АМD ЕРҮС™ 7002	Rome series processor
M.2	The M.2 interface is a new generation interface standard tailored for Ultrabooks. It is a new interface specification introduced by Intel [®] to replace mSATA.
RJ45	Commonly known as the standard 8-bit modular interface
AST2500	Aspeed [®] BMC chip
8038 fan	Fan with dimensions 80x80x38mm
LGA4094	Land Grid Array. LGA4094 represents 4094 contacts
CR2032	It is a 3V CR2032 lithium-manganese battery, shaped like a button, referred to as button battery or lithium-manganese button battery
RS-232	One of the communication interfaces on the computer is an asynchronous transmission standard interface, called COM port
Jtag	Joint Test Action Group, mainly used for chip internal testing
NC Pin	Empty pin

Abbreviation:

Abbreviation	Original Phrase
GbE	Gigabit Ethernet
BMC	Baseboard Management Controller
IPMI	Intelligent Platform Management Interface
CPU	Central Processing Unit
SATA	Serial Advanced Technology Attachment
SAS	Serial Attached SCSI
sSATA	secondary SATA
LAN	Local Area Network
VGA	Video Graphics Array
MB	Mother Board
BP	Backplane
PCIe	Peripheral Component Interconnect Express
USB	Universal Serial Bus
FW	Firmware
TPM	Trusted Platform Module
IO	Input/Output
BIOS	Basic Input-Output System
CMOS	Complementary Metal Oxide Semiconductor
ME	Management Engine
DDR4	Double Data Rate 4 SDRAM
DIMM	Dual-Inline-Memory-Modules
RDIMM	Registered DIMM
LRDIMM	Load-Reduced DIMM
KVM	Keyboard Video Mouse
CPLD	Complex Programmable Logic Device
ECC	Error Correcting Code
CFM	Cubic Feet Per Minute
RPM	Revolution Per Minute

Convention:

Note: it is used to transmit equipment or environmental safety warning messages, if not avoided, it may lead to equipment damage, data loss, equipment performance degradation

or other unpredictable results.

- Marning: indicates a potentially hazardous situation which, if not avoided, it may result in death or serious personal injury.
- **t** Red arrow: means pointing to a certain location.
- **†** Blue arrows: means the action of pulling out or inserting at an angle.
- > Dark blue rotation arrow 1: represents the action of turning the screw clockwise or pulling it outward.
- C Dark blue rotating arrow 2: represents the action of turning the screw counterclockwise or buckling inward.
- \Rightarrow Hollow arrow: represents the next action or result.

Modification:

Version	Release date	Description
V1.0	2020-05-26	Initial release
V1.1	2021-06-10	Optimized description
V1.2	2021-08-31	Update onboard front panel pin definition

Contents

Chapter 1 Product Introduction	
1.1 Product introduction	
1.2 Product parameters	9
1.3 Product features	
1.4 Motherboard structure diagram	
1.5 Block diagram of motherboard	
Chapter 2 Hardware Installation	
2.1 Removing and installing the CPU	
2.2 Removing and installing the heat sink	
2.3 Memory installation	
2.4 Installing the M.2 SSD module	
2.5 Rear panel connectors	
2.6 Internal connectors	
Chapter 3 BIOS Parameter Setting Instructions	
3.1 Enter the BIOS Setup interface	
3.2 Setup menu parameter description	
3.2.1 Navigation key description	
3.2.2 Main menu description	
3.2.3 Advanced menu description	
3.2.4 Trusted computing	
3.2.5 PSP firmware versions	
3.2.6 Boot features	
3.2.7 NB configuration	
3.2.8 Memory configuration	
3.2.9 Socket 0/1 information	
3.2.10 ACPI settings	
3.2.11 Serial port console redirection	
3.2.12 Console redirection settings	
3.2.13 Legacy console redirection settings	
3.2.14 CPU configuration	
3.2.15 Node 0/1 configuration	
3.2.16 SIO configuration	
3.2.17 [*Active*] Serial port	
3.2.18 PCI subsystem settings	
3.2.19 USB configuration	
3.2.20 CSM configuration	
3.2.21 NVMe configuration	
3.2.22 SATA configuration	
3.2.23 Tls Auth configuration	
3.2.24 Network stack configuration	
3.2.25 iSCSI configuration	
3.2.26 Server mgmt menu	
3.2.27 System event log	
3.2.28 BMC network configuration	
3.2.29 View system event log	
3.2.30 BMC user setting	
3.2.31 Add user	
3.2.32 Delete user	
3.2.33 Change user setting	
3.2.34 Event logs	

3.2.35 Change SMBIOS event log settings	64
3.2.36 Security menu	
3.2.37 Secure boot	
3.2.38 Boot menu	
3.2.39 Save & exit menu	
3.3 User Operation Reminder	
Chapter 4 RAID Setup Instructions	70
4.1 LSI 9361-8i configuring RAID	70
4.1.1 Configuring RAID in UEFI boot mode	70
4.1.2 Configuring RAID in Legacy Boot Mode	
Chapter 5 IPMI Deployment	
5.1 Rapid deployment of IPMI process	
5.1.1 Make sure the motherboard supports the IPMI function	
5.1.2 Enter BIOS to set IPMI function	
5.1.3 IPMI interface configuration Static mode	
5.1.4 IPMI configuration Java SOL	
5.2 IPMI function quick start instructions	
5.2.1 Enter the operation interface	
5.2.2 Default username and password	
5.2.3 Contents of IPMI management system	
5.2.4 Introduction to KVM remote management	
5.2.5 KVM page introduction	
5.2.6 Remote control quick operation	
5.2.7 Introduction to SOL	
5.3 Other ways to connect to IPMI	
5.3.1 IPMI driver	
5.3.2 IPMI tools and other open source software	



Chapter 1 Product Introduction

1.1 Product introduction

Gooxi G2DERO-B is a dual-socket CPU standard E-ATX server motherboard, supports AMD EPYC 7002 (Rome series) processors, compatible with AMD EPYC 7003 (Milan series) and 7001 (Naples series), Hygon 7100, 7200 series processors. The motherboard is equipped with 16 DDR4 memory slots, 2 MiniSAS SFF-8643 connectors, 1 M.2 interface, 2 Gigabit Ethernet ports, 1 RJ45 management network port, and 10 PCIe4.0 expansion slots on board, and can be widely used in various industries such as distributed storage, artificial intelligence and other server fields.

1.2 Product parameters

Processor	Supports 2 AMD EPYC 7002 (Rome series) processors; Compatible with AMD EPYC 7003 (Milan series), AMD EPYC 7001 (Naples series), Hygon 7100, 7200 series
Memory	Support 16 DDR4 ECC RDIMM, LRDIMM, 3DS DIMM, NVDIMM-N memory. Memory frequency up to 2933MHz, maximum single memory capacity of 256GB, maximum memory capacity of 4TB
Storage controller	Onboard 2 MiniSAS SFF-8643 connectors, support 1 M.2 SSD (PCIe 4.0x4)
I/O interface	 RJ45 management network port, support link and speed LEDs; 1 GBASE-T RJ45; VGA interface, 1 VGA pin; rear USB3.0, 1 onboard USB3.0, 1 USB3.0 20PIN pin and 1 USB2.0 9Pin, 1 serial port
PCIe expansion	Support 6 PCIe x8 (in PCIex16 slot) and 4 PCIex16 (2, 6, 7, 10 slots), PCIe 3 slot is designed as x8 or no signal, PCIe 4 slot is designed as x8 or x16
BMC	ASPEED AST2500
Safety	Support TPM module
Management	Onboard iBMC management module, supports IPMI, SOL, KVM Over IP, etc.
OS	Microsoft Windows Server, Linux
Operating temperature	5°C∼35°C
Operating humidity	20%~80%
Storage	Short-term storage (≤72H): temperature -40°C~70°C/ humidity 20%~90%

non-condensing (including packaging)	
Long-term storage (>72H): temperature 20°C~28°C/ humidity 30%~70°	
	non-condensing (including packaging)
Safety certificate	CCC
RoHS	Meet the requirements

1.3 Product features

G2DERO-B motherboard features are as follows:

- 2 SP3 sockets, support AMD EPYCTM 7002 series processors;
- Single CPU supports 8 DDR4 channels, each channel supports 1 DIMM, and supports 16 DDR4 slots; The single slot capacity is 16GB, 32GB, 64GB, 128GB, 256GB, and the maximum memory capacity of the whole machine is 4TB;
- DDR4 Type: DDR4 2133/2400/2666/2933MHz ECC-RDIMM/LRDIMM/3DS LRDIMM/ NVDIMM-N;
- There are 10 sets of PCIe Riser slots on the single board, among which: support 6 PCIex8 (in PCIe x16 slot) and 4 PCIe x16 (2, 6, 7, 10 slots), PCIe 3 slots are designed as x8 or no signal, PCIe 4 slots designed as x8 or x16;
- G2DRO-B motherboard provides 1 M.2 Key M SSD slot, only supports 2280 size and PCIe4.0 X4 signal;
- 2 Gigabit Ethernet ports are integrated on the motherboard, using I350-AM2 chip;
- The BMC chip in this board adopts the AST2500 control chip of ASPEED corporation, which is used for IPMI remote management, VGA output port, and dedicated Gigabit RJ45 management network port.

1.4 Motherboard structure diagram



Figure 1-1

S/N	Module name
1	Chassis fan control 4Pin interface (8 pieces)
2	ATX 8Pin power connector
3	ATX 8Pin power connector
4	PMBUS
5	ATX 6Pin power connector
6	ATX 6Pin power connector
7	ATX 24Pin power connector
8	Mini SAS HD1/HD2 8643 connector
9	M.2 slot
10	LPC TPM/80Port 2x10Pin Header
11	FP USB3.0*2 Header
12	FP VGA Header
13	SPI TPM Header
14	BMC button
15	USB 3.0*2+IPMI LAN
16	RJ45 Gigabit Ethernet port
17	COM port and VGA
18	UID button
19	SLOT10 PCIe4.0 X16

20	SLOT9 PCIe4.0 X8
21	SLOT8 PCIe4.0 X8
22	SLOT7 PCIe4.0 X16
23	SLOT6 PCIe4.0 X16
24	SLOT5 PCIe4.0 X8
25	SLOT4 PCIe4.0 X8 or X16
26	SLOT3 PCIe4.0 X8 or null
27	SLOT2 PCIe4.0 X16
28	SLOT1 PCIe4.0 X8
29	Front panel pins
30	DDR4 memory slot
31	SP3 Socket
32	DDR4 memory slot
33	DDR4 memory slot
33	DDR4 memory slot
34	SP3 Socket
35	DDR4 memory slot

1.5 Block diagram of motherboard



Figure 1-2

Chapter 2 Hardware Installation

2.1 Removing and installing the CPU

Before starting to install the CPU, please read the following guides:

- Make sure the motherboard supports the CPU.
- Before installing the CPU, be sure to turn off the computer and unplug the power cord from the electrical outlet to prevent damage to the hardware.
- Unplug all cables from electrical outlets.
- Disconnect all communication cables from their ports.
- Place the system unit on a flat and stable surface.
- Follow the instructions to turn on the system.

Warning!

Make sure the motherboard is disconnected from the power source before handling any components of the motherboard, otherwise serious damage may result. Do not attempt the procedures described in the following sections unless you are a qualified service technician.

Follow the instructions below to install the CPU:

- 1. Loosen the 3 fixing screws fixing the CPU cover in order $(3\rightarrow 2\rightarrow 1)$.
- 2. Flip open the CPU cover.
- 3. Use the handle on the CPU tray to remove the CPU tray from the CPU rack.

4. Using the handle on the CPU tray, insert the new CPU tray with the CPU installed into the CPU rack.

Note: Make sure the CPU is installed in the correct orientation in the CPU tray, with the triangle

on the CPU aligned with the upper left corner of the CPU carrier.

- 5. Flip the CPU rack with the CPU installed into the proper position in the CPU socket.
- 6. Flip the CPU cover into place over the CPU socket.

7. Tighten the CPU cover screws in sequence $(1\rightarrow 2\rightarrow 3)$ to fix the CPU cover in place. Torque: 16.1 kgf-cm (14.0 lbf-in)

- 8. Repeat steps 1-7 for the second CPU.
- 9. To remove the CPU, perform steps 1-7 in reverse order.



Figure 2-1



Figure 2-2



Figure 2-3

2.2 Removing and installing the heat sink

Before starting to install the heat sink, please read the following guidelines:

- Turn off the computer and unplug the power cord from the electrical outlet before installing the heat sink to prevent damage to the hardware.
- Unplug all cables from electrical outlets.
- Disconnect all communication cables from their ports.
- Place the system unit on a flat and stable surface.
- Follow the instructions to turn on the system.

Mwarning!

Make sure the motherboard is disconnected from the power source before starting to work on any components of the motherboard, otherwise serious damage may result.

Note: When installing the heat sink to the CPU, use a Phillips screwdriver to tighten the 4 fixing nuts in the order of 1-4.

Follow the instructions below to disassemble and install the heat sink:

1. Lift the heat sink and align it with the 4 studs on the CPU socket.

2. Tighten the heat sink fixing screws in order $(1 \rightarrow 2 \rightarrow 3 \rightarrow 4)$ to fix them in place.

3. To remove the heat sink, perform steps 1-2 in reverse, while making sure to unscrew the fixing screws in sequence

 $(1 \rightarrow 2 \rightarrow 3 \rightarrow 4)$, as shown in the picture below.

(The pictures of the heat sink are for reference only, the actual product shall prevail)





Figure 2-4

2.3 Memory installation

The motherboard supports 8 DDR4 channels, each channel supports 1 DIMM. 2 CPUs support 16 DDR4 slots (when only one memory is inserted, the slot in the red box in the figure below is preferred).

Note: In order to make the system more stable, it is recommended to use AMD compatibility list memory.

The location is shown in the figure below:



Figure 2-5

Note that the notches on the memory line up with the notches on the DIMM slots, and snap each DIMM module vertically into place to prevent incorrect installation.







Figure 2-8

2.4 Installing the M.2 SSD module

Follow the steps below to install the M.2 SSD module on the motherboard. (Note: The motherboard only supports M.2 with 2280 specification)

Step 1: Insert the M.2 SSD module into the slot on the motherboard.

Step 2: Tighten the fixing screws to fix the M.2 SSD module in place.



2.5 Rear panel connectors



Figure 2-10

- \bigcirc Reset button: BMC reset reset.
- 2 RJ45 Gigabit Ethernet port: The dedicated IPMI management interface provided by the motherboard supports IPMI remote management.
- ③ USB ports: 2 USB ports, support USB 3.0 specification.
- (4) RJ45 Gigabit Ethernet port: The 2 network ports provided by the motherboard use RJ45 connectors stacked up and down .
- 5 COM port: serial communication port, used to connect serial mouse and communication equipment .
- **6** VGA port: used to connect a monitor.
- \heartsuit UID Button: The ID LED on the front/rear panel will light blue when system identification is active.

2.6 Internal connectors





1) FAN 1, FAN 2, FAN 3, FAN4, FAN5, FAN6, FAN7, FAN8

There are eight 4Pin fan connectors on the motherboard, which are placed on the backboard of the motherboard to connect the system fans. The fan pin signals are 1 TACH detection speed, 1 PWM control speed, 1 POWER, 1 GND.



Pin NO.	Definition
1	GND
2	+12V
3	FG
4	PWM



2/3/5/6/7) Power connector (J51/J53/J54)

2x12pin ATX power connector with 4.2mm spacing, single pin supports 6A when the wire diameter is 18AWG;
3 is 2x4 ATX power connector with 4.2mm spacing, single pin supports 7A when the wire diameter is 18AWG;
6 is 2x3 ATX power supply with 4.2mm spacing connector, single pin supports 7A when the wire diameter is 18AWG. When the motherboard is working at full load, all power supplies need to be connected.

Note: The connector connection conforms to the ATX power specification, and the ATX power can be directly used for power during the debugging stage.



Figure 2-13

4) PMBUS interface

The motherboard supports the power PMBUS management protocol

8) 2 MiniSAS SFF-8643 ports

The motherboard supports the connection of 8 SATA hard disks through 2 MiniSAS SFF-8643 interfaces.

9) M.2 slot

The motherboard supports the installation of 1* 2280 M.2 SSD, only supports PCIe protocol, and does not support SSD with SATA protocol.

10) LPC TPM expansion interface

The motherboard provides an LPC TPM expansion interface, using 2x10Pin NC Pin4 2.54mm pins, the detailed signal definition is as follows:



11) Front USB3.0 connector

Figure 2-14

The side ear USB3.0 connector is 2x10pin 2.0mm spacing with fenced pins, the detailed signal definition is as follows:





12) Front VGA connector

The motherboard provides a VGA interface that can be connected to the front panel for connecting to a VGA monitor and outputting host information.

13) SPI TPM extension interface

The motherboard provides a SPI TPM expansion interface, using 2x5Pin NC Pin4 2.54mm pins, the detailed signal definition is as follows:





14/15/16/17/18/19/20/21/22/23) PCIe SLOT

There are 10 standard X16 PCIe slots J1/J2/J3/J4/J8/J9/J10/J11/J12/J13 on the motherboard, of which 6 are PCIe 4.0 x8 (in PCIe 4.0 x16 slot) and 4 are PCIe 4.0x16 (in PCIe 4.0 x16 slot) 2, 6, 7, 10 slots). The third slot of the PCIe Switch is designed as x8 or no signal, and the fourth slot is designed as x8 or x16.

24) Front panel connector

The front panel connector is a 2x10pin 2.54mm pitch pin, and the detailed signal definition is as follows:



Figure 2-17

25/27/28/30) DDR4 memory slots

CPU DIMM_A1/B1/C1/D1/E1/F1/G1/H1 channel DDR4 memory slot 0, black.

CPU DIMM_A3/B3/C3/D3/E3/F3/G3/H3 channel DDR4 memory slot 1, black.

26/29) SP3 SOCKET

The motherboard provides 2 SP3 Sockets, supports 2 AMD EPYC 7002 (Rome series) processors, compatible with AMD EPYC 7003 (Milan series), AMD EPYC 7001 (Naples series), Hygon 7100, 7200 series .

Chapter 3 BIOS Parameter Setting Instructions

3.1 Enter the BIOS Setup interface

Steps:

- 1. Power on the motherboard of the server and connect the keyboard;
- During the POST process, pay attention to the prompt to enter the BIOS Setup interface at the bottom left of the Logo screen, "Press or <ESC> to enter setup, <F7> to enter Boot Menu.";
- 3. Press the or <ESC> key on the keyboard to enter the BIOS Setup interface;

3.2 Setup menu parameter description

3.2.1 Navigation key description

→←:	Select Screen
11:	Select Item
Enter:	Select
+/-:	Change Opt.
F1:	General Help
F2:	Previous Values
F3:	Optimized Defaults
F4:	Save & Reset
ESC:	Exit

3.2.2 Main menu description

The Main interface contains the basic information of the BIOS system, such as the BIOS version number, CPU model, memory capacity, and the system time can be set.

Aptio Setup Utility – Copyright (C) 2020 American Megatrends, Inc. Main Advanced Server Mgmt Event Logs Security Boot Save & Exit		
BIOS Information BIOS Vendor Core Version Compliancy Project Version Build Date and Time	American Megatrends 5.14 UEFI 2.7; PI 1.6 G2SER 0.01 x64 09/04/2020 10:53:34	Choose the system default language
CPLD name CPLD version Build Date and Time Access Level	G2SERO O1 O8/28/2020 Administrator	
CPU Information Processor 0 Processor 1	@ 3000MHz 11 N/A	<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt.</pre>
Memory Information Total Memory	Total Memory: 64 GB (DDR4)	F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
System Language System Date System Time	[English] [Fri 09/04/2020] [14:31:27]	ESC: Exit
Version 2.20.127	5. Copyright (C) 2020 American	Megatrends, Inc.

Figure 3-1

BIOS Information

Project Version:

Displays the version information of the board BIOS.

Build Date and Time:

Displays the compilation date and time of the board BIOS.

CPLD Name:

Displays the name information of the CPLD on the board.

CPLD Version:

Displays the version information of the CPLD on the board.

Build Date and Time:

Displays the compilation date and time of the single-board CPLD.

Access Level:

Displays the current user permission of the board.

CPU Information

Processor x:

CPU model information.

Memory information

Total Memory:

Displays the total system memory capacity.

System Language:

Select the current system language.

System Date:

Displays and sets the current system date. The format of the system date is "week month/day/year". Press "Enter" to switch between month, day and year, and you can change the value in the following ways:

- •Press "+": increase the value by 1.
- •Press "-": the value decreases by 1.
- •Press the number key: change the value directly.

System Time:

Display and set the current system time. The system time is in 24-hour format and the format is "hour:minute:second". Press "Enter" to switch between hours, minutes and seconds, and you can change the value in the following ways:

- •Press "+": increase the value by 1.
- •Press "-": the value decreases by 1.
- •Press the number key: change the value directly.

3.2.3 Advanced menu description

The Advanced interface contains advanced configuration items of the BIOS system.

Aptio Setup Utility – Copyright (C) 2020 American Megatrends, Inc. Main <mark>Advanced</mark> Server Mgmt Event Logs Security Boot Save & Exit		
> Trusted Computing PSP Firmware Versions Boot Feature NB Configuration PCIE Port Bifurcation ACPI Settings Serial Port Console Redirection CPU Configuration SID Configuration PCI Subsystem Settings USB Configuration CSM Configuration NVMe Configuration SATA Configuration TIS Auth Configuration Setsure Status iSCSI Configuration Intel(R) I350 Gigabit Network Connection - 00:A0:C9:00:00:01	Trusted Computing Settings ++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit	
Version 2.20.1275. Copyright (C) 2020 American	Megatrends, Inc.	

Figure 3-2

•Trusted Computing

Trusted execution module configuration.

•PSP Firmware Versions



Platform security processor firmware version.

- •Boot Features
- Launch the feature configuration page.
- •NB Configuration
- PCIe Port Bifurcation
- •ACPI Settings
- •Serial Port Console Redirection
- •CPU Configuration
- •SIO Configuration
- •PCI Subsystem Settings
- •CSM Configuration
- •NVMe Configuration
- •SATA Configuration
- Network Stack Configuration
- •iSCSI Configuration
- •Intel(R) I350 Gigabit Network Connection- XX:XX:XX:XX:XX:XX

3.2.4 Trusted computing

Aptio Setup Utility Advanced	– Copyright (C) 2020 American	n Megatrends, Inc.
TPM20 Device Found Firmware Version: Vendor: Security Device Support Active PCR banks Available PCR banks SHA-1 PCR Bank SHA256 PCR Bank Pending operation Platform Hierarchy Storage Hierarchy Endorsement Hierarchy TPM2.0 UEFI Spec Version Physical Presence Spec Version TPM 20 InterfaceType Device Select	7.62 IFX [Enable] SHA-1,SHA256 SHA-1,SHA256 [Enabled] [Enabled] [Enabled] [Enabled] [Enabled] [TCG_2] [1.3] [TIS] [Auto]	Enables or Disables BIOS support for security device. O.S. will not show Security Device. TCG EFI protocol and INT1A interface will not be available. ++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.20.1275.	Copyright (C) 2020 American M	egatrends, Inc.

Figure 3-3

Display and set TCM/TPM module information, different module option settings are different, users can set according to the Setup help instructions.

3.2.5 **PSP firmware versions**

Aptio Setup Utility - Advanced	Copyright (C) 2020 Americar	n Megatrends, Inc.
PSP Firmware Versions		
PSP Directory Level 1 (Fixed) PSP Recovery BL Ver SMU FW Version ABL Version	FF.C.0.79 0.36.100.0 10072013	
PSP Directory Level 2 (Updateable) PSP BootLoader Version SMU FW Version ABL Version	0.C.0.79 0.36.100.0 10072013	
		<pre>++: Select Screen f↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults</pre>
		F4: Save & Exit ESC: Exit
Version 2.20.1275. C	opyright (C) 2020American ⊧	legatrends, Inc.

Figure 3-4

Display the PSP firmware version and related information.

2

3.2.6 Boot features

Aptio Setup Uti Advanced	lity – Copyright (C) 2020 Am	erican Megatrends, Inc.
Quiet Boot Option ROM Messages Bootup NumLock State INT19 Trap Response Ac Loss Control	[Enabled] [Force BIOS] [On] [Immediate] [Always On]	Enables or disables Quiet Boot option
		<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.20.1	275. Copyright (C) 2020 Amer	ican Megatrends, Inc.

Figure 3-5

Quiet Boot

Turn on and off the Quiet Boot function, the menu options are:

•Disabled: Close Quiet Boot, and POST information will be displayed at this time

•Enabled: Turn on Quiet Boot, and the OEM Logo will be displayed at this time

Default value: Enabled

Option ROM Messages

Use this function to set the Option ROM display mode, the menu options are:

•Force BIOS: Option ROM display mode is set by BIOS

•Keep Current: Option ROM display mode is set by current ROM

Default: Force BIOS

Bootup Numlock State

During the startup process, the keyboard Numlock indicator status switch setting, the menu options are: •On

•OFF

Default value: On

INT19 Trap Response

Interrupt and capture signal response settings, the menu options are:

•Immediate: Respond immediately

•Postponed: Delayed response Default: Immediate

3.2.7 NB configuration

Aptio Setup Utility Advanced	– Copyright (C) 202	0 American Megatrends, Inc.
cTDP Control IOMMU ACS Enable Package Power Limit Control APBDIS DF Cstates 4-link xGMI max speed Preferred ID Memory Configuration	[Auto] [Auto] [Auto] [Auto] [Auto] [Auto] [Auto] [Auto]	Auto = Use the fused TDP Manual = User can set customized TDP ****TDP is used to define the RC thermal model only*** **: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2 20 1275	Converight (C) 2020	American Medatrands The

Figure 3-6

cTDP Control Set cTDP control, menu options: •Manual •Auto

Default: Auto

IOMMU

IOMMU switch, menu options:

- •Enabled
- •Disabled
- •Auto

Default: Auto

ACS Enable

- ACS switch, menu options:
- •Enabled



- Disabled
- •Auto
- Default: Auto

Package Power Limit Control

- Manual
- •Auto

Default: Auto

APBDIS

Set APBDIS, menu options:

- •0
- •1
- ●Auto

Default: Auto

DF Cstates

- •Disabled
- •Enabled
- •Auto
- Default: Auto

4-link xGMI max speed

- •10.667Gbps
- ●13Gbps
- •16Gbps
- •18Gbps
- •Auto

Default: Auto

Preferred IO

- Manual
- ●Auto
- Default: Auto
- Memory Configuration

3.2.8 Memory configuration

Aptio Setup Advanced	Utility – Copyright (C) 2020 (American Megatrends, Inc.
<pre>Memory interleaving Memory interleaving size Chipselect Interleaving BankGroupSwap DRAM scrub time ▶ Socket 0 Information ▶ Socket 1 Information</pre>	[Auto] [Auto] [Auto] [Auto] [Auto]	Allows for disabling memory interleaving. Note that NUMA nodes per socket will be honored regardless of this setting.
		<pre>++: Select Screen 1↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.2	0.1275. Copyright (C) 2020 Ame	erican Megatrends, Inc.

Figure 3-7

Memory interleaving

- Disabled
- ●Auto

Default: Auto

Memory interleaving size

- •256 Bytes
- •512 Bytes
- •1 KB
- •2 KB
- •Auto

Default: Auto

Chipselect interleaving

Set the interleaved memory block on the DRAM chip of control node 0, menu option:

- Disabled
- ●Auto

Default: Auto

BankGroupSwap

- •Enabled
- Disabled



●Auto

Default: Auto

DRAM scrub time

Set the time to scrub memory, menu options:

- •Disabled
- •1 hour
- •4 hours
- •8 hours
- •16 hours
- •24 hours
- •48 hours
- •Autoc

Default: Auto

•Socket 0 Information

3.2.9 Socket 0/1 information

Aptio Setup Utility — Copyright (C) 2020 American Advanced	Megatrends, Inc.
Socket O Information	
DIMM A0: Not Present DIMM A1: Not Present DIMM B0: Not Present DIMM B1: Not Present DIMM C0: Not Present DIMM C1: Not Present DIMM D0: Not Present DIMM D1: Not Present DIMM E0: Not Present DIMM F0: Not Present DIMM F1: Not Present DIMM G0: Not Present DIMM G1: Not Present DIMM H1: Ramaxel Technology, Size 16 GB, Speed 2400 MT/s	<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.20.1275. Copyright (C) 2020 American Me	gatrends, Inc.

Figure 3-8

Display information about system memory

3.2.10 ACPI settings

Aptio Setup Utility - C Advanced	opyright (C) 2020 American	Megatrends, Inc.
ACPI Settings Enable AER Cap NUMA nodes per socket ACPI SRAT L3 Cache As NUMA Domain	[Auto] [Auto] [Auto]	Enables Advanced Error Reporting Capability
		<pre>++: Select Screen 1↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.20.1275. Cop	yright (C) 2020 American M	egatrends, Inc.

Figure 3-9

Enable AER Cap

- Disabled
- •Enabled
- •Auto

Default: Auto

NUMA Nodes Per Socket

This function specifies the desired number of NUMA nodes per slot.

- •NPS0
- •NPS1
- •NPS2
- •NPS4
- •Auto
- Default: Auto

ACPI SRAT L3 Cache As NUMA Domain

Use this option to enable or disable ACPI SRAT L3 Cache as NUMA domain.

- •Disabled
- •Enabled
- ●Auto
- Default: Auto
3.2.11 Serial port console redirection

Aptio Setup Utility – Copyright (C) 2020 American Advanced	Megatrends, Inc.
COMO Console Redirection [Disabled] Console Redirection Settings Legacy Console Redirection Legacy Console Redirection Settings Serial Port for Out-of-Band Management/ Windows Emergency Management Services (EMS)	Console Redirection Enable or Disable.
 Console Redirection Settings Console Redirection Settings 	<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.20.1275. Copyright (C) 2020 American Me	egatrends, Inc.

Figure 3-9

Console Redirection

The console redirection function switch redirects the information output from the console (such as a graphics card) to the monitor to the serial port.

- •Disabled: Turn off the redirection function.
- •Enabled: Enable redirection function.
- •Default value: Disabled
- •Console Redirection Settings
- •Legacy Console Redirection Settings

Serial port for out-of-band management/Windows Emergency Management Services (EMS).

Console Redirection

The console redirection function switch redirects the information output from the console (such as a graphics card) to the monitor to the serial port.

- •Disabled: Turn off the redirection function.
- •Enabled: Enable redirection function.

Default value: Disabled

•Console Redirection Settings

3.2.12 Console redirection settings

Aptio Setup Utility Advanced	– Copyright (C) 2020) American Megatrends, Inc.
COMO Console Redirection Settings Terminal Type Bits per second Data Bits Parity Stop Bits Flow Control VT-UTF8 Combo Key Support Recorder Mode Resolution 100x31 Putty KeyPad	[VT100+] [115200] [8] [None] [1] [None] [Enabled] [Disabled] [Disabled] [VT100]	Emulation: ANSI: Extended ASCII char set. VT100: ASCII char set. VT100+: Extends VT100 to support color, function Keys, etc. VT-UTF8: Uses UTF8 encoding to map Unicode chars onto 1 or more bytes.
Version 2.20.1275.	Copyright (C) 2020 A	american Megatrends, Inc.

Figure 3-10

Terminal Type

This option allows you to select the emulation type, the BIOS emulation type must match the mode selected in the terminal program. The menu options are:

- •VT100
- •VT100+
- •VT-UTF8
- •ANSI

Default: VT100+

Bits per second Serial port redirection rate, the value range is 9600 ~ 115200 Default: 115200

Data Bits Serial port redirection data bit length, the menu options are:

- •8
- •7

Default: 8

Parity

Serial port redirection verification switch, the menu options are:

• None

- •Even
- ●Odd
- •Mark: check digit is always 1
- •Space: check digit is always 0

Default: None

Mark and Space checks are not allowed for error detection.

Stop Bits

Serial data packet end flag, the menu options are:

- •1
- •2

Default: 1

Flow Control

Serial port redirection control flow selection switch, the menu options are:

- None: Close the serial port redirection control flow
- Hardware RTS/CTS: Request to send/clear to send

Default: None

VT-UTF8 Combo key support

ANSI/VT100 terminal VT-UTF8 key combination support switch, the menu options are:

•Disabled: Disable ANSI/VT100 terminal VT-UTF8 key combination support

•Enabled: Enable ANSI/VT100 terminal VT-UTF8 key combination support

Default value: Enabled

Recorder Mode

Record mode switch, turn on this function, only text information will be sent, the menu options are:

- •Enabled
- Disabled

Default value: Disabled

3.2.13 Legacy console redirection settings



Figure 3-11

Redirection COM Port

Select Redirect COM Port, the menu options are:

•COM0

Default: COM0

Resolution

Resolution, the menu options are:

- •80x24
- •80x25

Default: 80x24

Redirect After POST

Redirect after POST, the menu options are:

- •Always Enable
- •BootLoader

Default value: Always Enable

3.2.14 CPU configuration

Aptio Setup Ut: Advanced	ility — Copyright (C) 2020 A	merican Megatrends, Inc.
CPU Configuration SMT Control Core Performance Boost Global C-state Control L1 Stream HW Prefetcher L2 Stream HW Prefetcher SVM Mode SMEE Node 0 Information	[Auto] [Auto] [Auto] [Auto] [Auto] [Enabled] [Enabled]	Can be used to disable symmetric multithreading. To re-enable SMT, a POMER CYCLE is needed after selecting the 'Auto' option. WARNING - S3 is NOT SUPPORTED on systems where SMT is disabled.
		++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.20.1	1275. Copyright (C) 2020 Ame	rican Megatrends, Inc.

Figure 3-12

SMT Control

Symmetrical multi-threading switch, changing this option will perform a power cycle to ensure that the settings take effect, menu options:

- Disabled
- •Auto

Default: Auto

Core Performance Boost

- •Disabled
- ●Auto

Default: Auto

Global C-state Control

- Disabled
- •Enabled
- •Auto
- Default: Auto

L1 Stream, HW Prefetcher

- •Enabled
- •Disabled
- •Auto

Default: Auto

L2 Stream HW Prefetcher

Version: V1.2



L2 stream HW prefetch switch, menu options:

- •Enabled
- •Disabled
- ●Auto

Default: Auto

SVM ModeCPU virtualization switch.DisabledEnabledDefault value: Enabled

SMEESecure memory encryption control switch.DisabledEnabledDefault value: Enabled

•Node 0/1 Configuration

3.2.15 Node 0/1 configuration

Aptio Setup Utility – Copyright Advanced	(C) 2020 American Megatrends, Inc.
Node 0 Information AMD EPYC 7452 32-Core Processor 32 Cores 64 Threads Running @ 2213 MHz 1100 mV Processor Family: 17h Processor Model: 30h-3Fh Microcode Patch Level: 8301038 Cache per Core L1 Instruction Cache: 32 KB/8-way L1 Data Cache: 32 KB/8-way L2 Cache: 512 KB/8-way L3 Cache per Socket: 128 MB/16-way	++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.20.1275. Copyright (C) 2020 American Megatrends, Inc.

Figure 3-13

Display some detailed information about the CPU detected by the motherboard.

3.2.16 SIO configuration



Figure 3-14

3.2.17 [*Active*] Serial port



Figure 3-15

Use This Device

- •Enabled
- •Disabled

Default value: Enabled

Possible

Select the optimal setting for the serial port according to the requirements, the menu options are:

- •Use Automatic Settings
- •IO=3F8h; IRQ=4; DMA;
- •IO=3F8h; IRQ=3,4,5,7,9,10,11,12; DMA;
- •IO=2F8h; IRQ=3,4,5,7,9,10,11,12; DMA;
- •IO=3E8h; IRQ=3,4,5,7,9,10,11,12; DMA;
- •IO=2E8h; IRQ=3,4,5,7,9,10,11,12; DMA;

Default: Use Automatic Settings

3.2.18 PCI subsystem settings

Aptio Setup l Advanced	Jtility – Copyright (C) 2020 American	Megatrends, Inc.
AMI PCI Driver Version : PCI Settings Common for al. Above 4G Decoding SR-IOV Support BME DMA Mitigation Hot-Plug Support OnBrd/Ext VGA Select Shore Settings of the Sel	A5.01.19 I Devices: [Enabled] [Disabled] [Enabled] [Enabled] [Onboard]	Globally Enables or Disables 64bit capable Devices to be Decoded in Above 4G Address Space (Only if System Supports 64 bit PCI Decoding).
 Slot # 1 Empty [FROM BR0 Slot # 4 Empty [FROM BR0 Slot # 5 Empty [FROM BR0 Slot # 6 Empty [FROM BR0 Slot # 7 Empty [FROM BR0 Slot # 7 Empty [FROM BR0 Slot # 8 Empty [FROM BR0 Slot # 9 Empty [FROM BR0 Slot # 10 Empty [FROM BR0 Slot #11 Empty [FROM BR0 Slot #12 Empty [FROM BR0 Slot #13 Empty [FROM BR0 Slot #14 Empty [FROM BR0 Slot #15 Empty [FROM BR0 Slot #16 Empty [FROM BR0 Slot #17 Empty [FROM BR0 	<pre>county PCT Devices: a (NoT FOUND)] a (NOT FOUND)] b (NOT FOUND)] b (NOT FOUND)] b (NOT FOUND)] b (NOT FOUND)]</pre>	<pre> ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.20).1275. Copyright (C) 2020 American M	egatrends, Inc.

Figure 3-16

Above 4G Decoding

- Enabled
- •Disabled
- Default value: Enabled

SR-IOV Support

- •Enabled
- •Disabled

Default value: Enabled

BME DMA Mitigation

Re-enable the bus control property of the PCI bridge that is closed during PCI enumeration after SMM is locked, the menu options are:

- •Enabled
- •Disabled

Default value: Disabled

Hot-Plug Support

Global hot-swap switch. When the system has hot-swap slots and this option is enabled, a setting interface will be provided to select the reserved PCI resources for hot-swap. The menu options are:

- •Enabled
- Disabled



Default value: Enabled

OnBrd/Ext VGA Select

Select the VGA output port, the menu options are:

ullet Onboard

•External

Default: Onboard

•Slot #X...

Modify onboard PCI device or PCI slot settings.

3.2.19 USB configuration



Figure 3-17

Display USB controller and USB device information.

Legacy USB Support

- ●Enabled
- Disabled

Default value: Enabled

XHCI Hand-off

Change the XHCI control switch. This function is valid for operating systems that do not support changing XHCI control rights. Generally driven by XHCI to change the control of XHCI.

- Enabled
- •Disabled

Default value: Enabled



USB Mass Storage Driver Support

- •Enabled
- •Disabled
- Default value: Enabled

Port 60/64 Emulation •Enabled •Disabled Default value: Enabled

3.2.20 CSM configuration

Aptic Setup Utility - Advanced	Copyright (C) 2020 American	Megatrends, Inc.
Compatibility Support Module Configu	ration	Enable/Disable CSM Support.
CSM Support	[Enabled]	
CSM16 Module Version	07.83	
GateA20 Active HDD Connection Order	[Upon Request] [Adjust]	
Boot option filter	[UEFI and Legacy]	
Option ROM execution		
Network Storage Video Other PCI devices	(UEFI) (UEFI) (Legacy) (UEFI)	<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.20.1275. Co	pyright (C) 2020 American M	egatrends, Inc.

Figure 3-18

CSM Support

Enable or disable compatible support modules, the menu options are:

- •Disabled
- •Enabled

Default value: Enabled

Gate A20 Active

The control mode setting of A20 address line, the menu options are:

- •Upon Request
- $\bullet Always$



Default value: Upon Request

Boot option filter Startup option class control switch, the menu options are:

- •UEFI and Legacy
- •UEFI only
- •Legacy only

Default: UEFI and Legacy

Option ROM execution

Network

- UEFI
- •Legacy

Default: UEFI

Storage

- UEFI
- •Legacy

Default: UEFI

Video

- •UEFI
- •Legacy

Default: Legacy

Other PCI devices

- •UEFI
- •Legacy

Default: UEFI

3.2.21 NVMe configuration

Aptio Advanced	Setup Utility -	· Copyright (C) 202	0 American	Megatrends, Inc.
NVMe Configuration				
▶ TOSHIBA-RC100				<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Versi	on 2.20.1275. C	opyright (C) 2020	American Me	egatrends, Inc.
		Figure 3-19		
Advanced	Setup utility -	- copyright (c) 20.	2V American	Megatrends, Inc.
Seg:Bus:Dev:Func Model Number Total Size Vendor ID Device ID Namespace: 1		00:01:00:00 TOSHIBA-RC100 120.0 GB 1179 0113 Size: 120.0 GB		++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit

Figure 3-20

Displays detailed information about NVMe hard disks.

3.2.22 SATA configuration

SATA Configuration		Disable or enable OnChip SATA
SATA Enable		controller
SATA Controller (S:00 B:83	D:00 F:00)	
Port O	Not Present	
Port 1	Not Present	
Port 2	Not Present	
Port 3	Not Present	
Port 5	Not Present	
Port 6	Not Present	
Part 7	Not Present	
		++: Select Screen
		14: Select Item
		Enter: Select
		+/-: Change Opt.
		F1: General Help
		F2: Previous values
		E4: Save & Evit
		ESC: Exit
		Loor Lour

Figure 3-21

Display the current system SATA related information.

SATA Enable

The SATA controller switch inside the chip, the menu options are:

- •Disabled
- •Enabled
- •Auto
- Default: Auto

3.2.23 Tls Auth configuration



Figure 3-22

Tls authentication configuration

3.2.24 Network stack configuration

Aptio Setup Utility Advanced	– Copyright (C) 2020 American	n Megatrends, Inc.
Network Stack Ipv4 PXE Support Ipv4 HTTP Support Ipv6 PXE Support Ipv6 HTTP Support IPSEC Certificate PXE boot wait time Media detect count	[Enabled] [Disabled] [Disabled] [Disabled] [Disabled] [Enabled] 0 1	Enable/Disable UEFI Network Stack
		++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.20.1275.	Copyright (C) 2020 American H	legatrends, Inc.

Figure 3-23

Network Stack

- •Enabled
- •Disabled
- Default value: Disabled

Ipv4 PXE Support

- •Enabled
- •Disabled

Default value: Disabled

Ipv4 HTTP Support

- •Enabled
- •Disabled

Default value: Disabled

Ipv6 PXE Support

- •Enabled
- •Disabled

Default value: Disabled

Ipv6 HTTP Support •Enabled •Disabled Default value: Disabled

PXE boot wait time

PXE boot waiting time, the user can input the PXE boot waiting time, the waiting process can press "ESC" to give up the PXE boot, the default is 0.

Media detect count

Device presence detection times, the user can enter the device network card device detection times, the default is 1.

3.2.25 iSCSI configuration



Figure 3-24

iSCSI configuration

3.2.26 Server mgmt menu

Aptio Setup Utility – Main Advanced Server Mgmt Event	Copyright (C) 2020 American Logs Security Boot Save	n Megatrends, Inc. & Exit
BMC Self Test Status BMC Device ID BMC Device Revision BMC Firmware Revision IPMI Version BMC Interface(s) BMC Support Wait For BMC > System Event Log	FAILED 32 1 1.00 2.0 KCS, USB [Enabled] [Disabled]	Enable/Disable interfaces to communicate with BMC
 Bmc self test log BMC network configuration View System Event Log BMC User Settings BMC Warm Reset 		++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.20.1275. Copyright (C) 2020 American Megatrends, Inc.		

Figure 3-25

Display BMC self-test status, device ID, device version, BMC software version, and support IPMI specification version.

BMC Support

•Enabled

•Disabled

Default value: Enabled

Wait For BMC

•Enabled

•Disabled

Default value: Disabled

- •System Event Log menu
- •BMC network configuration menu
- •View System Event Log menu
- •BMC User Settings menu
- •BMC Warm Reset

3.2.27 System event log

Aptio Setup Utility –	Copyright (C) 2020 American	Megatrends, Inc. Server Mgmt
Enabling/Disabling Options SEL Components	[Enabled]	Change this to enable or disable event logging for
Erasing Settings Erase SEL	[Nn]	boot.
When SEL is Full	[Do Nothing]	
Custom EFI Logging Options Log EFI Status Codes	[Ennon code]	
NOTE: All values changed here do not effect until computer is resta	take wrted.	
		<pre>++: Select Screen f↓: Select Item</pre>
		Enter: Select +/−: Change Opt.
		F1: General Help F2: Previous Values F3: Optimized Defaults
		F4: Save & Exit ESC: Exit
Version 2.20.1275. Co	pyright (C) 2020 American M	egatrends, Inc.

Figure 3-26

- SEL Components
- •Enabled
- •Disabled
- Default value: Enabled

Erase SEL

●No

- •Yes, On next reset
- •Yes, On every reset

Default: No

When SEL is Full

- •Do Nothing
- •Erase Immediately

Default: Do Nothing

Log EFI Status Codes

- •Disabled
- •Both
- •Error code
- •Progress code
- Default value: Error code

3.2.28 BMC network configuration

Aptio Setup Utility –	Copyright (C) 2020 Americ	can Megatrends, Inc. Server Mgmt
BMC network configuration жножножножножножножно Configure IPV4 support жножножножножножножножно		 Select to configure LAN channel parameters statically or dynamically(by BIOS or BMC). Unspecified option will pot modify any BMC petwork
BMC Sharelink Management channel Configuration Address source Current Configuration Address sour Station IP address Subnet mask Station MAC address Router IP address	[Unspecified] DynamicAddressBmcDhcp 0.0.0.0 0.0.0.0 00-24-EC-F2-7D-DD 0.0.0.0	parameters during BIOS phase
Router MAC address BMC Dedicated Management channel Configuration Address source Current Configuration Address sour Station IP address Subnet mask Station MAC address Router IP address Router MAC address	00-00-00-00-00 [Unspecified] DynamicAddressBmcDhcp 192.168.1.210 255.255.255.0 00-24-EC-F2-7D-DE 192.168.1.1 9C-A6-15-57-5B-D9	++: Select Screen f4: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
жжжжжжжжжжжжжж Configure IPV6 support		•

Figure 3-27

Aptio Setup Utility -	Copyright (C) 2020 Americ	an Megatrends, Inc. Server Mgmt
BMC Dedicated Management channel Configuration Address source Current Configuration Address sour Station IP address Subnet mask Station MAC address Router IP address Router MAC address	[Unspecified] DynamicAddressBmcDhcp 192.168.1.210 255.255.255.0 00-24-EC-F2-7D-DE 192.168.1.1 9C-A6-15-57-5B-D9	▲ Select to configure LAN channel parameters statically or dynamically(by BIOS or BMC). Unspecified option will not modify any BMC network parameters during BIOS phase
жжжжжжжжжжжжжжжжжж Configure IPV6 support жжжжжжжжжжжжжжжж		
BMC Sharelink Management channel		++: Select Screen ↑↓: Select Item
IPV6 Support	[Enabled]	Enter: Select
Configuration Address source Current Configuration Address sour Station IPV6 address FEB0::224:ECFF:FEF2:7DDD	[Unspecified] DynamicAddressBmcDhcp	F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Prefix Length 64		
Version 2.20.1275. Co	ppyright (C) 2020 American	Megatrends, Inc.

Figure 3-28

Aptio Setup Utility —	Copyright (C) 2020 American	n Megatrends, Inc. Server Mgmt
IPV6 Router1 IP Address ::		Select to configure LAN channel parameters statically or dynamically(by BIOS or BMC). Unspecified option will
IPV6 address status IPV6 DHCP Algorithm	Active SLAAC	not modify any BMC network parameters during BIOS phase
BMC Dedicated Management channel		
IPV6 Support	[Enabled]	
Configuration Address source Current Configuration Address sour	[Unspecified] DynamicAddressBmcDhcp	
Station IPV6 address FE80::224:ECFF:FEF2:7DDE		<pre>++: Select Screen 1↓: Select Item Enter: Select +/-: Change Ont</pre>
Prefix Length 64		F1: General Help F2: Previous Values F3: Optimized Defaulto
IPV6 Router1 IP Address ::		F4: Save & Exit ESC: Exit
IPV6 address status IPV6 DHCP Algorithm	Active SLAAC	
Version 2.20.1275. Co	opyright (C) 2020 American ⊧	Megatrends, Inc.

Figure 3-29

Configure IPV4 support

BMC sharelink Management Channel

Configuration Address source

Configure the BMC IP address allocation mode, the menu options are:

- Unspecified
- •Static
- •DynamicBmcDhcp
- •DynamicBmcNonDhcp

Default: Unspecified

Luspecified is changed to other parameters. After saving and restarting, the option will restore the value of Unspecified, and there is no need to configure BMC IP every time it starts.

When the Configuration Address source option is Unspecified, it will display the network parameter information (IPV4) of the system shared network port, the current IP configuration mode, BMC IP, subnet mask, MAC address, routing IP, routing MAC;

BMC Dedicated Management Channel

Configuration Address source

Configure the BMC IP address allocation mode, the menu options are:

- •Unspecified
- •Static
- •DynamicBmcDhcp
- •DynamicBmcNonDhcp

Default: Unspecified

Change from Unspecified to other parameters, save and restart the execution, the option will restore the value of Unspecified, no need to configure BMC IP every time the startup process.

When the Configuration Address source option is Unspecified, it will display the network parameter information (IPV4) of the system dedicated network port, the current IP configuration mode, BMC IP, subnet mask, MAC address, routing IP, routing MAC;

Configure IPV6 support BMC Sharelink Management Channel IPV6 Support Choose whether to support IPV6, the menu options are: •Enabled •Disabled Default: Enabled

Change from Unspecified to other parameters, save and restart the execution, the option will restore the value of Unspecified, no need to configure BMC IP every time the startup process.

When the Configuration Address source option is Unspecified, the network parameter information (IPV6) of the system shared network port will be displayed;

BMC Dedicated Management ChannelIPV6 SupportChoose whether to support IPV6, the menu options are:EnabledDisabled

Default: Enabled



Change from Unspecified to other parameters, save and restart the execution, the option will restore the value of Unspecified, no need to configure BMC IP every time the startup process.

When the Configuration Address source option is Unspecified, the network parameter information (IPV6) of the system dedicated network port will be displayed.

3.2.29 View system event log

Aptio	Setup Utility – Copyright (C) 2020 American Megatrends, Inc. Server Mgmt
No. of log entries i	in SEL : 1364	▲ HEX: ■ 48 00 02 35 4D A8
DATE TIME	SENSOR TYPE	5E 20 00 04 14 32 0A 02 FF FF
04/28/20 15:35:17	Button/Switch	Generator ID: BMC – LUN #0
04/28/20 15:35:22	Button/Switch	(Channel #0)
04/28/20 15:35:32	System Event	Sensor Number: 0x32 SCSI
04/28/20 15:35:32	System Event	Bus(Parallel)
01/11/18 05:27:46	System Event	Event Description: Record
01/11/18 05:27:46	System Event	Type-0x02. Assertion Event.
01/11/18 05:28:31	OS Boot	
01/11/18 05:28:31	OEM Record DC	
01/11/18 05:41:12	OS Stop/Shutdown	
01/11/18 05:41:12	OEM Record DD	++: Select Screen
01/11/18 05:41:14	Voltage	↑↓: Select Item
01/11/18 05:41:14	Voltage	Enter: Select
01/11/18 05:41:14	Voltage	+/-: Change Opt.
01/11/18 05:41:14	Voltage	F1: General Help
04/15/75 16:12:16	Processor	F2: Previous Values
04/15/75 16:12:16	Button/Switch	F3: Optimized Defaults
04/15/75 16:12:39	System Event	F4: Save & Exit
04/15/75 16:12:39	System Event	ESC: Exit
01/11/18 05:46:17	System Event	
01/11/18 05:46:17	System Event	
01/11/18 05:47:00	Button/Switch	
Vene	ion 2 20 1275 Conuniabt (C)	2020 American Madataende Inc
VERSI	ton 2.20.1275. copyright (c)	2020 American Megatrenus, Inc.

Figure 3-30

View system event log information.

Note that to enter this menu, the BIOS needs to read the SEL data, and it needs to wait for a while.

3.2.30 BMC user setting



Figure 3-31

- •Add User
- •Delete User
- •Change User Setting

3.2.31 Add user

Aptio Setup Utility – (Copyright (C) 2020 American	Megatrends, Inc. Server Mgmt
BMC Add User Details User Name User Password User Access Channel No User Privilege Limit	[Disable] O [Reserved]	Enter BMC User Name ++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.20.1275. Co	oyright (C) 2020 American M	egatrends, Inc.

Figure 3-32

User Name: User name setting, up to 16 characters are supported.

User Password: User password setting, password characters must contain uppercase and lowercase letters, special characters and numbers, minimum 8 characters, maximum 20 characters.

Channel No: BMC channel setting, input 1 or 8

User Privilege Limit

- •Reserved
- \bullet Callback
- •User
- •Operator
- Administrator

After the setting is successful, it will prompt "Set User Access Command Passed", and BMC User will take effect immediately.

3.2.32 Delete user



Figure 3-33

User Name : Enter the name of the user to be deleted.

User Password: Enter the password of the user to be deleted. After entering the correct password, a prompt "User Delete!!!" will pop up. The deleted user will take effect immediately in the BMC, and the user will not be able to log in to the BMC Web interface.

3.2.33 Change user setting

Aptio Setup Ut	ility – Copyright (C) 2020 Ame	erican Megatrends, Inc. Server Mgmt
BMC Change User Settings User Name User Password Change User Password User Access Channel No User Privilege Limit	[Disable] O [Reserved]	<pre>ther BMC User Name ther BMC User Name ther Select Screen ther Select Item Enter: Select ther Sele</pre>
Version 2.20.	1275. Copyright (C) 2020 Amer	ican Megatrends, Inc.

Figure 3-34

User Name : Enter the user name to be modified.

User Password: Enter the user password to be modified. The following options can be modified only if the name and password are entered correctly.

User

User permission switch setting, the menu options are:

•Enabled

•Disabled

Default value: Disabled

Change User Password: Change the user password. The input password characters must contain uppercase and lowercase letters, special characters and numbers, with a minimum of 8 characters and a maximum of 20 characters.

Channel NO : BMC channel setting, input 1 or 8.

User Privilege Limit

Modify user permission settings, the menu options are:

- •Reserved
- Callback
- •User
- Operator

Version: V1.2

Administrator

3.2.34 Event logs



Figure 3-35

•Change SMBIOS Event Log Settings

•View SMBIOS Event Log

3.2.35 Change SMBIOS event log settings

Aptio Setup Utility – (Copyright (C) 2020 American	Megatrends, Inc. Event Logs
Enabling/Disabling Options Smbios Event Log	[Enabled]	Change this to enable or disable all features of Smbios Event Logging during boot.
Erasing Settings Erase Event Log When Log is Full	[No] [Do Nothing]	
Smbios Event Log Standard Settings Log System Boot Event MECI METW	[Enabled] 1 60	
Custom Options Log EFI Status Code Convert EFI Status Codes to Standard Smbios Type	[Enabled] [Disabled]	<pre>++: Select Screen 1↓: Select Item Enter: Select +/-: Change Opt.</pre>
NOTE: All values changed here do not effect until computer is resta	take rted.	F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.20.1275. Co	oyright (C) 2020 American M	egatrends, Inc.

Figure 3-36

Smbios Event Log

- •Enabled
- •Disabled
- Default value: Enabled

Erase SEL

•No

- •Yes, On next reset
- •Yes, On every reset

Default: No

When SEL is Full

- •Do Nothing
- •Erase Immediately
- Default: Do Nothing

Log System Boot Event

- Disabled
- •Enabled

Default value: Enabled

MECI

Enter incremented values for multiple event counters. Enter a number between 1 and 255. Default setting is 1.

METW

This entry is used to determine how long (in minutes) multiple event counters should wait before generating a new event log. Enter a number between 0 and 99. The default setting is 60.

3.2.36 Security menu

Aptio Setup Utili Main Advanced Server Mgmt E	ty – Copyright (C) 2020 America vent Logs <mark>Security</mark> Boot Sava	an Megatrends, Inc. 2 & Exit
Password Description		Set Administrator Password
If ONLY the Administrator's pass then this only limits access to only asked for when entering Se If ONLY the User's password is is a power on password and must boot or enter Setup. In Setup th have Administrator rights. The password length must be in the following range:	sword is set, Setup and is tup. set, then this be entered to ne User will	
Minimum length	3	
Maximum length Administrator Password User Password	20	<pre>++: Select Screen f↓: Select Item Enter: Select +/-: Change Opt. F1: General Help</pre>
▶ Secure Boot		F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit
Version 2.20.127	5. Copyright (C) 2020 American	Megatrends, Inc.

Figure 3-37

Administrator Password

Select this option to set an administrator password;

User Password

Select this option to set the user password;

Administrator Password

Display the administrator password status, if there is an administrator password in the system, it will display Installed, if there is no administrator password, it will display Not Installed;

User Password

Display user password status, if there is a user password in the system, it will display Installed, if there is no user password, it will display Not Installed;

•Secure Boot

3.2.37 Secure boot



Figure 3-38

Secure Boot

Safe boot switch, the menu options are:

- •Enabled
- Disabled

Default value: Disabled

Secure Boot Mode

Safe boot mode, the menu options are:

- Standard
- Custom

Default value: Custom

- •Restore Factory Keys
- •Key Management

3.2.38 Boot menu



Figure 3-39

Setup Prompt Timeout: Setup prompt timeout setting, set the time to wait for the Setup activation key, the maximum value is 65535 seconds, and the default value is 1.

Boot Option Priorities

A list of startup options. This list is dynamically displayed and determined by the number of startup options in the system. If there is no startup item, it will not be displayed.

XXXX Driver BBS Priorities

3.2.39 Save & exit menu

Aptio Setup Utility — Copyright (C) 2 Main Advanced Server Mgmt Event Logs Security	020 American Megatrends, Inc. Boot Save & Exit
Save Options Save Changes and Exit Discard Changes and Exit Save Changes and Reset Discard Changes and Reset Save Changes Discard Changes	Exit system setup after saving the changes.
Default Options Restore Defaults Save as User Defaults Restore User Defaults Boot Override UEFI: SanDisk, Partition 1 (SanDisk) AMI Virtual CDROM0 1.00 AMI Virtual CDROM1 1.00 AMI Virtual CDROM1 1.00 AMI Virtual CDROM3 1.00 SanDisk AMI Virtual HDisk0 1.00 AMI Virtual HDisk1 1.00 AMI Virtual HDisk2 1.00	<pre>**: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.20.1275. Copyright (C) 202	0 American Megatrends, Inc.

Figure 3-40

Save Changes and Exit

Discard Changes and Exit

Save Changes and Reset

Discard Changes and Reset

Save Changes

Discard Changes

Restore Defaults

Save as user Defaults

Restore user Defaults

Boot Override

3.3 User Operation Reminder

With options, when users need to operate, they need to understand the operating specifications in detail.
 When operating the options, please combine the operation manual and the description of the options on the BIOS Setup interface to understand the meaning of the options.

Chapter 4 RAID Setup Instructions

4.1 LSI 9361-8i configuring RAID

4.1.1 Configuring RAID in UEFI boot mode

- > Enter the RAID card configuration interface
- a) During server startup, press Delete/Esc as prompted to enter the BIOS Setup interface.
- b) Select Advanced>AVAGO MegaRAID<AVAGO MegaRAID SAS 91311-8i>Configuration Utility and press Enter.
- c) Enter the interface shown in Figure 4-1, and five types of configuration tasks are displayed on the interface (see Table 1-33 for related descriptions).

Aptio Setup Advanced	Utility – Copyright	(C) 2017 American	Megatrends, Inc.
 Configuration Management Controller Management Virtual Drive Management Drive Management Hardware Components 			Displays configuration options. Some options appear only if the controller supports them. As an example, create virtual drive, create CacheCade virtual drive, make JBOD, make Unconfigured Good, clear configuration, manage foreign configuration, view drive group properties and view global hot spare drives.
Version 2.	19.1268.Copyright ((C) 2017 American M	egatrends, Inc. <mark>84</mark>

Figure 4-1

♦ Table 1-33 Parameter description

Options	Summary
Configuration Management	Select Configuration Management to perform tasks such as creating logical disks, viewing disk group properties, viewing hot spare information, and clearing configurations.
Controller Management	Select Controller Management to view and manage controller properties and perform tasks such as clearing controller events, scheduling and running controller events, and running patrol reads.
Virtual Drive Management	Select Logical Disk Management to perform tasks such as viewing logical disk properties, locating logical disks, and running consistency checks.
Drive Management	Select Disk Management to view physical disk properties and perform



Options	Summary
	tasks such as locating a disk, initializing a disk, and rebuilding after a
	failed disk.
Handwara Commonanta	Select a hardware component to view supercap properties, manage
	supercapacitors and manage peripheral components.

Table 1-33

Common tasks

Switch disk mode:

The RAID card supports switching between the following three disk modes.

- 1. Unconfigured Good: Indicates that the physical disk is normal and can be used to configure RAID or hot spare disk.
- 2. Unconfigured Bad: Indicates that there is residual RAID information on the physical disk and needs to be cleared manually.
- 3. JBOD: Just a Bunch Of Disks, which only connects disks together for capacity expansion, but does not have the RAID function.

Here is an example of switching from Unconfigured Good mode to Unconfigured Bad mode.

a) As shown in Figure 4-2, select Drive Management on the RAID card configuration interface and press Enter.



Figure 4-2

b) Enter the interface shown in Figure 4-3, select the disk to be configured, and press Enter.
Aptio Setup Utility – Copyright (C) 2017 America Advanced	an Megatrends, Inc.
Drive Port 4 - 7:01:04: SAS, 5586B, (Foreign)Unconfigure Drive Port 4 - 7:01:05: SAS, 5586B, (Foreign)Unconfigure Drive Port 4 - 7:01:06: SAS, 5586B, (Foreign)Unconfigure Drive Port 4 - 7:01:07: SAS, 5586B, (Foreign)Unconfigure	Displays the properties of a specific drive. You can perform several operations (such as Rebuild, Initialize drive), view basic properties of the drive and also click Advanced to view additional properties. ++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit
Version 2.19.1268. Copyright (C) 2017 American	Megatrends, Inc.

Figure 4-3

c) Enter the interface shown in Figure 4-4, select Operation, press Enter, then select Make Unconfigured Bad in the displayed dialog box, and press Enter.

Aptio Setup Util: Advanced	ity – Copyright (C) 2017 America	an Megatrends, Inc.
Operation BASIC PROPERTIES: Drive ID Status Size Type Model Hardware Vendor Advanced	[Select operation] Port 4 - 7:01:04 [Unconfigured Good] 558 GB [Disk] HUC101860CSS200 HGST Operation Select operation Start Locate Stop Locate Initialize Drive Drive Erase Make Unconfigured Bad	Lists the operations that you can perform on a drive. ++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit
Version 2.19.126	58. Copyright (C) 2017 American	Megatrends, Inc.

Figure 4-4

d) Enter the interface shown in Figure 4-5, select Go, and press Enter.

Aptio Setup Utility - Advanced	Copyright (C) 2017 Americar	Megatrends, Inc.
Operation Go BASIC PROPERTIES: Drive ID Status Size Type Model Hardware Vendor Advanced	[Make Unconfigured Bad] Port 4 – 7:01:04 [Unconfigured Good] 558 GB [Disk] HUC101860CSS200 HGST	Starts the selected operation or opens another form. ++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit
Version 2.19.1268. C	opyright (C) 2017American ⊨	legatrends, Inc. B4

Figure 4-5

e) Enter the interface shown in Figure 4-6 to complete the operation of switching the disk mode.



Figure 4-6

Create RAID:

a) As shown in Figure 4-7, select Configuration Management on the RAID card configuration interface and press Enter.

Aptio Setup Advanced	Utility – Copyright (C) 2017 American Megatr	ends, Inc.
 Configuration Management Controller Management Virtual Drive Management Drive Management Hardware Components 		Displa option only i suppor create CacheC JBOD, clear foreig drive view g ++: Se t1: Se Enter: +/-: C F1: Ge F2: Pr F3: Op F4: Sa ESC: E	ys configuration s. Some options appear f the controller ts them. As an example, virtual drive, create ade virtual drive, make make Unconfigured Good, configuration, manage n configuration, manage n configuration, view group properties and lobal hot spare drives.
Version 2.1	9.1268. Copyright (C)	2017 American Megatren	ds, Inc. B4

Figure 4-7

b) Enter the interface shown in Figure 4-8, select Create Virtual Drive, and press Enter.



Figure 4-8

c) Enter the interface shown in Figure 4-9, select Select RAID Level, set the RAID level, and press Enter.

Aptio Setup Utility Advanced	– Copyright (C) 2017 America	h Megatrends, Inc.
 Save Configuration Select RAID Level Protect Virtual Drive Select Drives From Select Drives CONFIGURE VIRTUAL DRIVE PARAMETERS Virtual Drive Name Virtual Drive Size Virtual Drive Size Unit Strip Size Read Policy Write Policy I/O Policy Access Policy Drive Cache Disable Background Initialization Default Initialization Save Configuration 	[RAIDO] [Disabled] [Unconfigured Capacity] S: 0 Select RAID Level RAIDO RAID1 RAID5 RAID6 RAID10 [NO]	Selects the desired RAID level. The RAID levels that can be configured are 0, 1, 5, 6 (if supported), 10, 50, and 60 (if supported). RAID 0 uses drive striping to provide high data throughput, especially for large files in an environment that requires no data redundancy. ++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit
Version 2.19.1268.	Copyright (C) 2017 American	Megatrends, Inc.

Figure 4-9

- d) Enter the interface shown in Figure 4-10, select Select Drives From, set the RAID disk capacity source, and press Enter.
- ☆ [Unconfigured Capacity] indicates that the capacity comes from the remaining capacity of the RAID-configured disk.
- \diamond [Free Capacity] indicates that the capacity comes from an empty disk.



Figure 4-10

e) Enter the interface shown in Figure 4-11, select Select Drives, and press Enter.

Aptio Setup Utility – Advanced	Copyright (C) 2017 Americar) Megatrends, Inc.
 Save Configuration Select RAID Level Protect Virtual Drive Select Drives From Select Drives 	[RAIDO] [Disabled] [Unconfigured Capacity]	Dynamically updates to display as Select Drives or Select Drive Group based on the selection made in Select Drives From.
CONFIGURE VIRTUAL DRIVE PARAMETERS: Virtual Drive Name Virtual Drive Size Virtual Drive Size Unit Strip Size Read Policy Write Policy I/O Policy Access Policy Drive Cache Disable Background Initialization Default Initialization Save Configuration	0 [GB] [256 KB] [Read Ahead] [Write Back] [Direct] [Read/Write] [Unchanged] [No] [No]	++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit
Version 2.19.1268. Cc	pyright (C) 2017 American ⊦	legatrends, Inc.

Figure 4-11

f) Enter the interface shown in Figure 4-12, select the disk to be used to configure RAID, [Enabled] means selected, then select Apply Changes, and press Enter. If the status of the disk is JBOD or Unconfigured Bad, it cannot be selected.



Figure 4-12

g) Enter the interface shown in Figure 4-13, and make corresponding settings (see Table 1-34 for parameter descriptions), select Save Configuration, and press Enter.

Aptio Setup Utility - Advanced	Copyright (C) 2017 American	Megatrends, Inc.
 Save Configuration Select RAID Level Protect Virtual Drive Select Drives From Select Drives 	[RAIDO] [Disabled] [Unconfigured Capacity]	Assigns a name to identify the virtual drive.
CONFIGURE VIRTUAL DRIVE PARAMETERS: Virtual Drive Name Virtual Drive Size Virtual Drive Size Unit Strip Size Read Policy Write Policy I/O Policy Access Policy Drive Cache Disable Background Initialization Default Initialization Save Configuration	1116 [GB] [256 KB] [Read Ahead] [Write Back] [Direct] [Read/Write] [Unchanged] [No] [No]	<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit</pre>
Version 2.19.1268. Co	pyright (C) 2017 American M	egatrends, Inc.

Figure 4-13

♦ Parameter Description

Parameter	Description
Virtual Drive Name	RAID name, only letters, numbers and underscores are supported, not case sensitive
Virtual Drive Size	RAID capacity
Virtual Drive Size Unit	RAID capacity unit
Stripe Size	Stripe size, the size of stripe data blocks written on each disk
Read Policy	Read cache strategy, divided into Read Ahead (open read cache) and No Read Ahead (close read cache)
Write Policy	Write cache strategy, divided into Write Through (write-through mode), Always Write Back (write-back mode 1) and Write Back (write-back mode 2)
I/O Policy	I/O strategy, divided into Cached (cache mode) and Direct (direct read and write mode)
Access Policy	Read and write strategies, divided into Read/Write (read/write), Read Only (read-only) and Blocked (operation prohibited)
Drive Cache	Disk cache policy, divided into Enable (open), Disable (close) and Unchanged (automatic)
Default Initialization	Default initialization method
Save Configuration	Save the configuration created by the wizard

Table 1-34



- \diamond Do not use special characters as the RAID name.
- ☆ Compared with No Read Ahead, Write Through, and Direct, Read Ahead, Write Back, and Cached have improved performance, but data consistency cannot be guaranteed.
- If the supercapacitor is abnormal, when the write cache policy selects "Write Back", the firmware writes data to implement "Write Through"; if the write cache policy selects "Always Write Back", the firmware writes data to implement "Write Back".
- h) Enter the interface shown in Figure 4-14, select Confirm to make it Enabled, select Yes, and press Enter.





i) Enter the interface shown in Figure 4-15, complete the RAID configuration operation, select OK, and return to the RAID card configuration interface.



Figure 4-15

j) As shown in Figure 4-16, select Virtual Drive Management on the RAID card configuration interface and press Enter.



Figure 4-16

k) Enter the interface shown in Figure 4-17, you can see the created RAID, select the RAID to be viewed, and press Enter.

Aptio Setup Utility – Copyright (C) 2017 American Advanced	Megatrends, Inc.
▶ Virtual Drive O: RAIDO, 1116GB, Optimal	Displays the properties of a specific virtual drive. You can perform operations (such as Start Locate, Stop Locate, Consistency Check), view basic properties and click Advanced for viewing additional properties.
	<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit</pre>
Version 2.19.1268. Copyright (C) 2017 American Me	gatrends, Inc.

Figure 4-17

1) Enter the interface shown in Figure 4-18, select View Associated Drives, and press Enter to view the detailed information of the RAID (including the RAID name, level, and disk information).

Aptio Setup Utility – Copyright (C) 2017 American Megatrends, Inc. Advanced		
Operation BASIC PROPERTIES: Name Raid Level Status Size View Associated Drives Advanced	[Select operation] [RAIDO] [Optimal] 1116 GB	Lists the operations that you can perform on a virtual drive.
		<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit</pre>
Version 2.19.126	8. Copyright (C) 2017 Americ	an Megatrends, Inc.

Configure hot spare:

After RAID is configured, a hot spare disk is generally configured to improve data security. A global hot spare disk or a dedicated hot spare disk can be configured as required.



- ♦ The hot spare disk is only used for RAID levels with redundancy.
- ☆ The capacity of the hot spare disk is larger than the capacity of a single member disk of the RAID to contribute to the RAID.
- ♦ Only disks whose configuration mode is Unconfigured Good can be used as hot spare disks.
- ♦ Configuring a Global Hot Spare Disk
 - a) As shown in Figure 4-19, select Drive Management on the RAID card configuration interface and press Enter.



Figure 4-1

b) Enter the interface shown in Figure 4-20, select the disk to be configured as the global hot spare disk, and press Enter.



Figure 4-20

c) Enter the interface shown in Figure 4-21, select Operation, press Enter, then select Assign Dedicated Hot Spare Drive, and press Enter.





d) Enter the interface shown in Figure 4-22, select Go, and press Enter.

Aptio Setup Utility - Advanced	Copyright (C) 2017 American) Megatrends, Inc.
Operation ▶ Go BASIC PROPERTIES: Drive ID Status	[Assign Global Hot S] Port 0 – 3:01:02 [Unconfigured Good]	Starts the selected operation or opens another form.
Size Type Model Hardware Vendor	558 GB [Disk] HUC101860CSS200 HGST	
▶ Advanced		
		<pre>++: Select Screen f↓: Select Item Enter: Select +/-: Change Opt. F1: General Help E2: Previous Values</pre>
		F3: Optimized Defaults F4: Save & Reset ESC: Exit
Version 2.19.1268. C	opyright (C) 2017 American M	legatrends, Inc.

Figure 4-22

e) Enter the interface shown in Figure 4-23, select Confirm to make it Enabled, select Yes, and press Enter.



Figure 4-23

f) Enter the interface shown in Figure 4-24 to complete the operation of configuring the global hot spare disk.



Figure 4-24

Delete RAID:

a) As shown in Figure 4-25, select Virtual Drive Management on the RAID card configuration interface and press Enter.



b) Enter the interface shown in Figure 4-26, select the logical disk to be deleted, and press Enter.



Figure 4-26

c) Enter the interface shown in Figure 4-27, select Operation, press Enter, then select Delete Virtual Drive in the displayed dialog box, and press Enter.



Figure 4-27

d) Enter the interface shown in Figure 4-28, select Go, and press Enter.

Aptio Setup Utility – Copyright (C) 2017 American Megatrends, Inc. Advanced		
Operation > Co BASIC PROPERTIES: Name	[Delete Virtual Drive]	Starts the selected operation or opens another form.
Raid Level Status Size	[RAIDO] [Optimal] 1116 GB	
 View Associated Drives Advanced 		
		++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit
Vencion 2 19 1952	Copupidat (C) 2017 Amonicop b	
VELSIUN 2.19.1200. 1	sopgright (6) 2017 Hildriddi P	legati chus, inc.

Figure 4-28

e) Enter the interface shown in Figure 4-29, select Confirm to make it Enabled, select Yes, and press Enter.



Figure 4-29

f) Enter the interface shown in Figure 4-30, and complete the RAID deletion operation.



Figure 4-30

Locating the disk location:

- 1. Locate physical disk
- a) As shown in Figure 4-31, select Drive Management on the RAID card configuration interface and press Enter.



b) Enter the interface shown in Figure 4-32, select the disk to be located, and press Enter.



Figure 4-32

c) Enter the interface shown in Figure 4-33, select Operation, press Enter, and then select Start Locate in the displayed dialog box, and press Enter.



Figure 4-33

d) Enter the interface shown in Figure 4-34, select Go, and press Enter.

Aptio Setup Utility Advanced	– Copyright (C) 2017 American	n Megatrends, Inc.
Operation ≻ Go BASIC PROPERTIES:	[Start Locate]	Starts the selected operation or opens another form.
Drive ID Status Size	Port 0 – 3:01:00 [Unconfigured Good] 558 GB	
Type Model Hardware Vendor	[Disk] HUC101860CSS200 HGST	
Advanced		
		<pre>++: Select Screen t↓: Select Item Enter: Select</pre>
		+/-: Change Opt. F1: General Help F2: Previous Values
		F3: Optimized Defaults F4: Save & Reset ESC: Exit
Version 2.19.1268.	Copyright (C) 2017 American (Megatrends, Inc.

Figure 4-34

e) Enter the interface in Figure 4-35 to complete the operation of locating the physical disk location.



Figure 4-35

- 2. Locate all disks in a logical disk
- a) As shown in Figure 4-36, select Virtual Drive Management on the RAID card configuration interface and press Enter.

Aptio Setup Utility – Copyright (C) 20 Advanced	17 American Megatrends, Inc.
 Configuration Management Controller Management Virtual Drive Management Drive Management Hardware Components 	Manages the virtual drive properties and enables you to view the basic virtual drive properties and perform operations such as background initialization, consistency check. You can also view additional properties using the Advanced link.
	<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit</pre>
Version 2.19.1268. Copyright (C) 2017	American Megatrends, Inc.

Figure 4-36

b) Enter the interface shown in Figure 4-37, select the logical disk to be located, and press Enter.



c) Enter the interface shown in Figure 4-38, select Operation, press Enter, select Start Locate in the displayed dialog box, and press Enter.

Aptio Setup Uti Advanced	lity – Copyright (C) 2017 Amer	rican Megatrends, Inc.
Operation Go BASIC PROPERTIES: Name Raid Level Status Size View Associated Drives Advanced	[Start Locate] 111 [RAIDO] [Optimal] 1116 GB Operation Start Locate Stop Locate Delete Virtual Drive Reconfigure Virtual Drive Fast Initialization Slow Initialization Virtual Drive Erase	Lists the operations that you can perform on a virtual drive.
Version 2.19.1	.268. Copyright (C) 2017 Americ	F4: Save & Reset ESC: Exit can Megatrends, Inc.

Figure 4-38

d) Enter the interface shown in Figure 4-39, select Go, and press Enter.

Aptio Setup Utility – Copyright (C) 2017 American Megatrends, Inc. Advanced		
Operation ▶ Go BASIC PROPERTIES:	[Start Locate]	Starts the selected operation or opens another form.
Name Raid Level Status	111 [RAIDO] [Ontimal]	
Size ▶ View Associated Drives ▶ Advanced	1116 GB	
		<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit</pre>
Version 2.19	.1268. Copyright (C) 2017 Amer	ican Megatrends, Inc.

e) Enter the interface shown in Figure 4-40 to complete the operation of locating all disks in the logical disk.



Figure 4-40

Initialize the logical disk:

This function is used to initialize the internal data space of the logical disk so that it can be recognized and used by the operating system.

a) As shown in Figure 4-41, select Virtual Drive Management on the RAID card configuration interface and press Enter.





Figure 4-41

b) Enter the interface shown in Figure 4-42, select the logical disk to be initialized, and press Enter.





c) Enter the interface shown in Figure 4-43, select Operation, press Enter, then select Fast/Slow Initialization in the displayed dialog box, and press Enter.



Figure 4-43

E The difference between Fast Initialization and Slow Initialization is that the former can write data immediately,

while the latter needs to wait for the disk space to be fully initialized before writing data

d) Enter the interface shown in Figure 4-44, select Go, and press Enter.

Aptio Setup Utility – Copyright (C) 2017 American Megatrends, Inc. Advanced		
Operation Go BASIC PROPERTIES: Name Raid Level Status Size View Associated Drives Advanced	[Fast Initialization] 111 [RAIDO] [Optimal] 1116 GB	Starts the selected operation or opens another form.
		<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit</pre>
Version 2.19.1268. Copyright (C) 2017 American Megatrends, Inc.		

Figure 4-44

e) Enter the interface shown in Figure 4-45, select Confirm to make it Enabled, select Yes, and press Enter.

Aptio Setup Utility Advanced	– Copyright (C) 2017 American	Megatrends, Inc.
Initializing a Virtual Drive will Confirm Yes ▶ No	[Enabled]	<pre>**: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit</pre>
Version 2.19.1268.	Copyright (C) 2017 American M	egatrends, Inc.

Figure 4-45

f) Enter the interface shown in Figure 4-46, and complete the operation of initializing the logical disk.





Initialize the physical disk:

a) As shown in Figure 4-47, select Drive Management on the RAID card configuration interface and press Enter.



Figure 4-47

b) Enter the interface shown in Figure 4-48, select the disk to be initialized, and press Enter.

Aptio Setup Utility – Copyright (C) 2017 American Advanced	Megatrends, Inc.
 Drive Port 0 - 3:01:00: SAS, 5586B, Online, (512B) Drive Port 0 - 3:01:01: SAS, 5586B, Online, (512B) Drive Port 0 - 3:01:02: SAS, 5586B, Unconfigured Good, (Drive Port 0 - 3:01:03: SAS, 5586B, Unconfigured Good, (Displays the properties of a specific drive. You can perform several operations (such as Rebuild, Initialize drive), view basic properties of the drive and also click Advanced to view additional properties. ++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit
Version 2.19.1268. Copyright (C) 2017 American M	egatrends, Inc.



c) Enter the interface shown in Figure 4-49, select Operation, press Enter, select Initialize Drive in the displayed dialog box, and press Enter.

Aptio Setup Util Advanced	ity – Copyright (C) 2017 Americar	h Megatrends, Inc.
Operation BASIC PROPERTIES: Drive ID Status Size Type Model Hardware Vendor Advanced	[Select operation] Port 0 - 3:01:02 [Unconfigured Good] S58 GB [Disk] HUC101860CSS200 HGST Operation Select operation Start Locate Stop Locate Initialize Drive Drive Erase Make Unconfigured Bad Assign Global Hot Spare Drive	Lists the operations that you can perform on a drive.
Version 2.19.12	68. Copyright (C) 2017 American ⊧	Wegatrends, Inc.

Figure 4-49

d) Enter the interface shown in Figure 4-50, select Go, and press Enter.

Aptio Setup Uti Advanced	lity – Copyright (C) 2017 Americ	can Megatrends, Inc.
Operation ▶ Go BASIC PROPERTIES:	[Initialize Drive]	Starts the selected operation or opens another form.
Drive ID Status Size	Port 0 – 3:01:02 [Unconfigured Good] 558 GB	
Type Model Hardware Vendor	[Disk] HUC101860CSS200 HGST	
▶ Advanced		
		++: Select Screen ↑↓: Select Item
		Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values
		F3: Optimized Defaults F4: Save & Reset ESC: Exit
Version 2.19.1	268. Copyright (C) 2017 American	n Megatrends, Inc.

Figure 4-50

e) Enter the interface shown in Figure 4-51, select Confirm to make it Enabled, select Yes, and press Enter.

Advanced	
Initializing a Drive may result in Confirm [Enabled] Yes • No	++: Select Screen 11: Select Item Enter: Select
	+/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit

Figure 4-51

f) Enter the interface shown in Figure 4-52 to complete the operation of initializing the physical disk.



Figure 4-52

Wipe disk data:

This function is used to delete the internal data of the disk, including erasing physical disk data and logical disk data.

- 1. Erase physical disk data
- a) As shown in Figure 4-53, select Drive Management on the RAID card configuration interface and press Enter.

Aptio Setup Utility – Copyright (C) 2017 American Advanced	Megatrends, Inc.
Configuration Management Controller Management Virtual Drive Management Drive Management Hardware Components	Displays the basic drive properties and performs operations such as assign/unassign a hot spare drive, locate drives, Place Drive offline/online, and rebuild drive. You can also view additional properties using the Advanced link. ++: Select Screen 14 : Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit
Version 2.19.1268. Copyright (C) 2017 American Me	egatrends, Inc.

Figure 4-53

b) Enter the interface shown in Figure 4-54, select the disk whose data is to be erased, and press Enter.



c) Enter the interface shown in Figure 4-55, select Operation, press Enter, then select Drive Erase in the displayed dialog box, and press Enter.



Figure 4-55

d) Enter the interface shown in Figure 4-56, press Enter, and then select the erasing mode in the displayed dialog box (it is recommended to use the default mode: Simple).





e) Enter the interface shown in Figure 4-57, select Go, and press Enter.

Aptio Setup Advanced	Utility – Copyright (C) 2017 Ameri	can Megatrends, Inc.
Operation Erase Mode > Go BASIC PROPERTIES:	[Drive Erase] [Simple]	Starts the selected operation or opens another form.
Drive ID Status Size Type Model Hardware Vendor ► Advanced	Port 0 - 3:01:02 [Unconfigured Good] 558 GB [Disk] HUC101860CSS200 HGST	
		++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit
Version 2.1	9.1268. Copyright (C) 2017 America	n Megatrends, Inc.

Figure 4-57

f) Enter the interface shown in Figure 4-58, select Confirm to make it Enabled, select Yes, and press Enter.



Figure 4-58

g) Enter the interface shown in Figure 4-59 to complete the operation of erasing data on the physical disk.



Figure 4-59

To avoid disk failure, do not perform other operations while erasing data on the physical disk.

- 2. Erase logical disk data
- a) As shown in Figure 4-60, select Virtual Drive Management on the RAID card configuration interface and press Enter.

Aptio Setup Utility – Copyright (C) 2017 American Advanced	Megatrends, Inc.	
 Configuration Management Controller Management Virtual Drive Management Drive Management Hardware Components 	Manages the virtual drive properties and enables you to view the basic virtual drive properties and perform operations such as background initialization, consistency check. You can also view additional properties using the Advanced link.	
	<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit</pre>	
Version 2.19.1268. Copyright (C) 2017 American Megatrends, Inc.		

Figure 4-60

b) Enter the interface shown in Figure 4-61, select the logical disk whose data is to be erased, and press Enter.

Aptio Setup Utility – Copyright (C) 2017 American Megatrends, Inc. Advanced		
▶ Virtual Drive 0: 111, RAIDO, 1116GB, Optimal	Displays the properties of a specific virtual drive. You can perform operations (such as Start Locate, Stop Locate, Consistency Check), view basic properties and click Advanced for viewing additional properties.	
	<pre>++: Select Screen fl: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit</pre>	
Version 2.19.1268. Copyright (C) 2017 American Megatrends, Inc.		

c) Enter the interface shown in Figure 4-62, select Operation, press Enter, select Virtual Drive Erase in the displayed dialog box, and press Enter.

Aptio Setup Util Advanced	ity – Copyright (C) 2017 Ameri	ican Megatrends, Inc.
Operation BASIC PROPERTIES: Name Raid Level Status Size View Associated Drives Advanced	[Select operation] 111 [RAIDO] [Optimal] 1116 GB Operation Start Locate Stop Locate Delete Virtual Drive Reconfigure Virtual Drives Fast Initialization Slow Initialization Virtual Drive Erase	Lists the operations that you can perform on a virtual drive.
Version 2.19.12	68. Copyright (C) 2017 America	an Megatrends, Inc.



d) Enter the interface shown in Figure 4-63, press Enter, and then select the erasing mode in the displayed dialog box (it is recommended to use the default mode: Simple).



e) Enter the interface shown in Figure 4-65, select Go, and press Enter.



Figure 4-65

f) Enter the interface shown in Figure 4-66, select Confirm to make it Enabled, select Yes, and press Enter.



Figure 4-66

g) Enter the interface shown in Figure 4-67 to complete the operation of erasing logical disk data.



Figure 4-67

Migrating RAID levels:

This function is used to modify the RAID level to meet the configuration requirements without affecting the integrity of the current data.

a) As shown in Figure 4-68, select Virtual Drive Management on the RAID card configuration interface and press Enter.


Figure 4-68

b) Enter the interface shown in Figure 4-69, select the logical disk to be rebuilt, and press Enter.

Aptio Setup Utility – Copyright (C) 2017 American Advanced	Megatrends, Inc.
▶ Virtual Drive 0: 111, RAIDO, 1116GB, Optimal	Displays the properties of a specific virtual drive. You can perform operations (such as Start Locate, Stop Locate, Consistency Check), view basic properties and click Advanced for viewing additional properties.
	<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit</pre>
Version 2.19.1268. Copyright (C) 2017 American Me	gatrends, Inc.



c) Enter the interface shown in Figure 4-70, select Operation, press Enter, then select Reconfigure Virtual Drive in the dialog box that is displayed, and press Enter.



Figure 4-70

d) Enter the interface shown in Figure 4-71, select Go, and press Enter.

Aptio Setup Utility – Advanced	Copyright (C) 2017 Americar	Megatrends, Inc.
Operation Go BASIC PROPERTIES: Name Raid Level Status Size View Associated Drives Advanced	[Reconfigure Virtual] 111 [RAIDO] [Optimal] 1116 GB	Starts the selected operation or opens another form.
		<pre>++: Select Screen 14: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit</pre>
Version 2.19.1268. C	opyright (C) 2017American ⊧	legatrends, Inc.

Figure 4-71

e) Enter the interface shown in Figure 4-72, set the RAID level, select Add Drives, and press Enter.



Figure 4-72

f) Enter the interface shown in Figure 4-73, select the disk to be added, enable it, select Apply Changes, and press Enter.

Aptio Setup Utility – Advanced	Copyright (C) 2017 Americ	can Megatrends, Inc.
 Apply Changes Select Media Type Select Interface Type Logical Sector Size 	(HDD) [Both] [Both]	Submits the changes made to the entire form.
CHOOSE UNCONFIGURED DRIVES: Drive Port 0 - 3:01:03: SAS, 558GB Check All Uncheck All ▶ Apply Changes	[Enabled]	
		<pre>++: Select Screen f↓: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit</pre>
Version 2.19.1268. Co	opyright (C) 2017 Americar	Megatrends, Inc.

Figure 4-73

g) Enter the interface shown in Figure 4-74, select Confirm to make it Enabled, select Yes, and press Enter.



Figure 4-74

h) Enter the interface shown in Figure 4-75, select Start Operation, and press Enter.



Figure 4-75

i) Enter the interface shown in Figure 4-76, select OK, and press Enter.

Aptio Setup Utilit Advanced	y – Copyright	(C) 2017 Americ	an Megatrends, Inc.
The operation has been started s ▶ OK	JL		++: Select Screen 1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit
VERSION 2.15.1266	. COPYLISHI (C	/ ZVI7 HUBPICA	n Megati enus, Inc.

Figure 4-76

j) Enter the interface shown in Figure 4-77 to view the current migration progress.

Aptio Setup Utility - Advanced	Copyright (C) 2017 Americar	n Megatrends, Inc.
Operation Progress BASIC PROPERTIES: Name Raid Level Status Size View Associated Drives > Advanced	[Select operation] Reconstruction 0% 111 [RAIDO] [Optimal] 1116 GB	Lists the operations that you can perform on a virtual drive. ++: Select Screen 1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit
Version 2.19.1268. C	opyright (C) 2017American ⊧	Megatrends, Inc.

Figure 4-77



Clear disk RAID information:

This function is used to clear the RAID residual information in the disk, so that the disk can be used to configure RAID again. This function is often used for disks whose mode is Unconfigured Bad.

- a) Switch the disk mode Unconfigured Bad to Unconfigured Good.
- b) As shown in Figure 4-78, select Configuration Management on the RAID card configuration interface and press Enter.



Figure 4-78

c) Enter the interface shown in Figure 4-79, select Manage Foreign Configuration, and press Enter.

Aptio Setup Utility – Copyright (C) 2017 American Advanced	Megatrends, Inc.
Advanced Clear Configuration Manage Foreign Configuration	Displays, imports and/or clears foreign configurations. ++: Select Screen 1: Select Screen 1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit
Version 2.19.1268. Copyright (C) 2017 American Me	gatrends, Inc.

Figure 4-79

d) Enter the interface shown in Figure 4-80, select Clear Foreign Configuration, and press Enter.



Figure 4-80

e) Enter the interface shown in Figure 4-81, select Confirm to make it Enabled, select Yes, and press Enter.



Figure 4-81

f) Enter the interface shown in Figure 4-8, and complete the operation of clearing disk RAID information.



Figure 4-82

4.1.2 Configuring RAID in Legacy Boot Mode

> Enter the RAID card configuration interface

a) During the BIOS startup process, when the interface shown in Figure 4-83 is displayed, press Ctrl+R.

A -8 atter CI SI	itializin (Bus 2 De y Status: ot Number	g Devices 100% v 0) AVAGO MegaRAID SAS 9361 Missing : 4	-8i	
D LUN	VENDOR	PRODUCT	REVISION	CAPACITY
	AVAGO	AVAGO MegaRAID SAS 9361-81	4.658.88-6121	1024MB
8 8	ATA	MM1888GBKAL	HPGC	953869HB
030	ATA	MM1000GBKAL	HPGC	953869MB
848	ATA	MM1000GBKAL	HPGC	953869MB
288	HP	EG0300FBVFL	HPDC	286102MB
298	HP	EG0300FCVBF	HPDS	286102MB
300	HP	EG0300FBVFL	HPDC	286102MB
	AUACO	Virtual Drive	RAIDB	5120MB

Figure 4-83

b) Enter the interface shown in Figure 4-84. Please refer to the key operation tips on the lower border of the interface to navigate and modify settings in the interface.



Figure 4-84

Common tasks

Configure RAID:

c) As shown in Figure 4-85, press F2 on the VD Mgmt interface and select Create Virtual Drive.



Figure 4-85

d) Enter the interface shown in Figure 4-86, set the RAID level, and press Enter.

AID Level:	RAID-8	PD per Span : M	A	
	RAID-5	ID Type	Size	
ta Protection:	RAID-6	[]::88	278.87 68	
	RAID-10	[]::01	279 97 69	
	RAID-68	[]::01	278 87 68	
	11110 00	1 1::86	278.87 68	22
		[]::87 512e	931.88 GB	
- Basic Setting: Size:		Advanced	OK	CANCEL

Figure 4-86

e) Enter the interface shown in Figure 4-87, select the disk for RAID configuration, and press Enter.

NID Level: R010-1	PD per Span : 🔢	'n	
a Protection: Disable	ID Type	Size 278 87 68	
a Hoteerion Plante	[X]::01	Z78.87 GB	91
	[]::84 []::85	278.87 GB 278 87 GB	
	[]:-:B6	278.87 GB	
	(]::07 51Ze	931.00 GB	
Basic Settings		1000	
ize: 278.875 68	Advanced	OX	CANCEL
lane:			

Figure 4-2

f) Enter the interface shown in Figure 4-88, set the Size and Name accordingly, select Advanced, and press Enter.

AID Level: RAID-1	PD per Span : 1/6	
ata Protection: Disable	ID Type Size [X]::88 278.87 68 [X]::81 278.87 68 []]:-:84 278.87 68 []]]:-:84 278.87 68 []]][]][]][]][]][]][]][]][]][]][]][]][]	88 81
- Basic Settings	Advanced DK	CANCEL

Figure 4-88

g) Enter the interface shown in Figure 4-89, set related parameters, select OK, and press Enter.

	1	Create Virtua	1 Drive-Advanced	-
HID LEVE	Strip Size:	256KB	[] Initialize	
Data Prot	Read Policy:	Ahead	E 1 Configure HotSpare	
	Write Policy:	Write Back wi	th	I
	1/0 Policy:	Direct	GR	I
Basic Size: Nane:	Disk cache Policy	Unchanged	CANCEL	

Figure 4-89

h) Enter the interface shown in Figure 4-90, select OK, and press Enter to complete the RAID configuration operation.

AID Level: RAID-1	PD per Span : N/A	
Data Protection: Disable	ID Type Size [X]:-:88 278.87 G8 [X]:-:81 278.87 G8 []]:-:84 278.87 G8 []] 1:-:84 278.87 G8 []] 1:-:85 278.87 G8 []] 1:-:85 278.87 G8 []] 1:-:86 278.87 G8 []] 1::-:86 278.87 G8 []] 1::-:86 278.87 G8 []] 1::-:86 278.87 G8	88 81
- Basic Settings	Advanced OK	CANCEL

Figure 4-90

i) Select the RAID to be viewed and press Enter to view the detailed information of the RAID (including the RAID name, level, and disk information), as shown in Figure 4-91.

- General	Stal Drive H - Properties SSD Caching Details SSD Caching :Disabled
Nanc: <u>JS1</u>	
Size: 20.000 GB	
Strip Size: 256 KB	
VD State : Optimal	
- Operations Operation : No Operation	7
Progress : M/A	a second s
Time Left : N/A	Advanced OK CANCEL

Figure 4-91

Configure hot spare disk:

After RAID is configured, a hot spare disk is generally configured to improve data security. Global hot spare disks and dedicated hot spare disks can be configured as required.



- \diamond The hot spare disk is only used for RAID levels with redundancy.
- ☆ The capacity of the hot spare disk is larger than the capacity of a single member disk of the RAID to contribute to the RAID.
- \diamond Only disks whose configuration mode is Unconfigured Good can be used as hot spare disks.
- 1. Configuring a Global Hot Spare Disk
- a) As shown in Figure 4-92, select the disk to be configured as the global hot spare disk on the PD Mgmt interface, and press F2.

VD Mgnt	PD Mgmt	Ctrl Mgnt	Propertie	es		
			- Drive M	anage	ent	PAGE-1
	Back	Plane				Secured :
Device	ID Type	Capacity	State	DG	Vendor	No
9	SAS	278.87 GB	UG	-	HP	Encryption Capable:
13	SAS	278.87 GB	UG	-	HP	No
14	SAS	278.87 GB	UG		HP	EKM Support:
15	SATA	931.80 GB	UG		ATA	Disabled
16	SAS	278.87 GB	Online	88	HP	Connector:
17	SAS	278.87 GB	Online	88	HP	active bible in a second second
1000						Enclosure Model:
						SGP10
						Slot Mumber:
						6
						Logical Sector Size:
						512 B
						Physical Sector Size:
						512 B
						Froduct ID:
						EG0300FCUBF
1						<gotopage:2></gotopage:2>
F1-Help	F2-Opera	tions F5-Refr	esh Ctrl-	I-Nex	t Page Ctr	1-P-Prev Page F12-Ctlr

Figure 4-92

b) Enter the interface shown in Figure 4-93, select Make Global HS, and press Enter to complete the configuration of the global hot spare disk.



Figure 4-93

c) Return to the interface shown in Figure 4-94, and select a hot spare disk to view information about the global hot spare disk.

VD Mgnt	PD Mynt	Ctrl Mgnt	Propertie:	3		- B
			- Drive Man	age	ent	PACE-1
T. Same	BackP	lane				Secured:
Devicel	D Type	Capacity	State	06	Vendor	No
9	SAS	278.87 GB	Hotspare	-	HP	Encryption Capable:
13	SAS	278.87 68	UG		HP	No
14	SAS	278.87 GB	UG		HP	EKM Support:
15	SATA	931.80 GB	UG		ATA	Disabled
16	SAS	278.87 GB	Online	88	HP	Connector:
17	SAS	278.87 GB	Online	88	IP	And the second strategies to a
1.00						Enclosure Model:
						SGP10
						Slot Mumber:
						6
						Logical Sector Size:
						512 B
						Physical Sector Size:
						512 B
						Product ID:
						EGU3BUFCVBF
						(GoToPage :2)
F1-Help	F2-Operat	ions F5-Refr	esh Ctrl-N	Nex	t Page Ctr	I-R-Prey Page F12-Ctir

Figure 4-94

Delete RAID:

This function is used to delete damaged or difficult to meet the needs of the RAID.

a) As shown in Figure 4-95, select the logical disk to be deleted on the VD Mgmt interface, and press F2.



Figure 4-95

b) Enter the interface shown in Figure 4-96, select Delete VD, and press Enter.



Figure 4-96

c) Enter the interface shown in Figure 4-97, select YES, and press Enter to complete the RAID deletion operation.



Figure 4-97

Locate the disk location:

This function is convenient for you to quickly find the disk by lighting the blue indicator light of the corresponding slot of the disk. A single physical disk or all member disks included in a logical disk can be located.

a) As shown in Figure 4-98, select the disk to be located on the PD Mgmt interface and press F2.

VD Mgmt	PD Mgmt	Ctrl Mgnt	Propertie	es		
UD Hgmt Device 9 13 14 15 16 17	PD Hgnt Backf ID Type SAS SAS SAS SAS SAS SAS SAS	Ctrl Hgnt Capacity 278.87 GB 278.87 GB 278.87 GB 931.00 GB 278.87 GB 278.87 GB	Propertic - Drive M. State UG UG UG UG Online Online	00 00 00 00	Vendor HP HP HP ATA HP HP	PAGE=1 Secured: No Encryption Capable: No EKM Support: Disabled Connector: Enclosure Model: SGF10 Slut Number:
F4 Mete	P2 finance	ious PE Bafa				Slot Number: 6 Logical Sector Size: 512 B Physical Sector Size: 512 B Froduct ID: EG0300FCUBF (GoToPage:2)

Figure 4-98

b) Enter the interface shown in Figure 4-99 and select Locate->Start to complete the disk location operation.

	0	DTure I		PAGE-1
evice	ID Type	Capacity	Rebuild	
13	SAS	278.87 GB	Copyback	Cion Capables
19 15	SATA	931.80 GB	Locate	Start
16 17	SAS	278.87 GB	Place drive Online Place drive Offline	
			Nake Global HS Remove Hot Spare drive	Cumber:
			Drive Erase	B Sector Size:
			Make JBOD Make unconfigured good	B B B B B B B B B B B B B B B B B B B
			Prepare for Removal	- BEFCUEF

Figure 4-99



- ♦ Locate->Start: Start the disk location operation.
- ♦ Locate->Stop: Stop locating the disk operation.

Initialize the logical disk:

This function is used to initialize the internal data space of the disk so that it can be recognized and used by the operating system.

a) As shown in Figure 4-100, select the disk to be initialized on the VD Mgmt interface and press F2.

UD Hgnt PD Hgnt Ctrl Hgnt Properties	
Unreal Drive Hanagement - [-] LSI MegaRAID 9361-8i (Bus 8x82, Dev 8x88) -[-] Drive Group: 8, RAID 1 -[-] Virtual Drives -[-] Virtual Drives -[+] Drives -[+] Available size: 258.87 GB -Hot spare drives -[-] Unconfigured Drives ::85: Ready: 278.87 GB ::85: Ready: 278.87 GB ::87: Ready: 931.88 GB	Virtual Drive 8: State: Optimal BAID Level: 1 Drive Group 8: Virtual Drives: 1 Drives: 2 Free Cap.: 258.87 GB Free Areas: 1
F1-Help F2-Operations F5-Refresh Ctrl-N-Next Page Ctr	I-P-Prev Page F12-Ctir

Figure 4-100

b) Enter the interface shown in Figure 4-101, and select Initialization->Start FGI.



Figure 4-101



- ♦ BGI: Background Initialization, background initialization, first initialize part of the RAID space for writing data, and initialize the rest of the space in the background.
- ♦ FGI: Full Ground Initialization, full disk initialization, initializes all the space of the RAID, and writes data only after the initialization is completed.
- c) Enter the interface shown in Figure 4-102, select YES, and press Enter to complete the disk initialization operation.



Figure 4-102

Wipe disk data:

This function is used to delete the internal data of the disk, including erasing physical disk data and logical disk data.

- 1. Erase physical disk data
- a) As shown in Figure 4-103, select the physical disk to be erased on the PD Mgmt interface and press F2.

VD Mgnt	PD Mgmt	Ctrl Mgnt	Properti	es		90.
VD Hgnt Device 9 13 14 15 16 17	PD Hynt Backf ID Type SAS SAS SAS SAS SAS SAS SAS	Ctrl Hgnt Capacity 278.87 GB 278.87 GB 278.87 GB 931.80 GB 278.87 GB 278.87 GB 278.87 GB	Properti Drive M State UG UG UG UG UG Online Online	es anage DG - - 88 88	Vendor HP HP HP ATA HP HP	PAGE-1 Secured: No Encryption Capable: No EXM Support: Disabled Connector: Enclosure Model:
14 15 16 17	SAS SATA SAS SAS	278.87 GB 931.00 GB 278.87 GB 278.87 GB	UG UG Online Online	- 88 88	HP ATA HP HP	EKM Support: Disabled Connector: Enclosure Model: SGP10 Slot Mumber: 6 Logical Sector Size: 512 B
	P9 0					Physical Sector Size: 512 B Product ID: EG0300FCVBF (GoToPage:2)

Figure 4-103

b) Enter the interface shown in Figure 4-104, select the erasing mode (it is recommended to use the default mode: Simple), and press Enter.

	Back	Plane	No. of Concession, Name	red:
eviceID	Type	Capacity	Rebuild	
9 13	SAS	278.87 GB 278.87 GB	Copyback	Difficient Capable:
15	SATA	931.00 GB	Locate	> bled
17	SAS	278.87 GB	Place drive Online Place drive Offline	ure Model:
			Make Global HS Remove Hot Spare drive Drive Erase	unber:
			Make JBOD Make unconfigured good	Nornal Thorough
			Prepare for Removal	Stop Lrase

Figure 4-104

c) Enter the interface shown in Figure 4-105, select Yes, and press Enter to complete the operation of erasing data on the physical disk.

	0.000	TO MALE				1	PAGE-1
eviceID	Турс	Capacity	State	DG	Vendor	No	a. Na sa kwasa
9	SAS		045464547				tion Capable:
13	SAS	This oper	ation tak	es se	eral minu	tes	ort:
15	SATA	to comple	te and wi	pes o	it all dat	a	ed
16 17	SAS	present o	m the dri	VC.			8.2.
		Are you	sure you	want	to contin	we?	e Model:
							hert
			Yes		No		Sector Size:
			-				Sector Size
				_			
		1				EG0300	FCUBF
						0000000	
							(GoToPage:2)

Figure 4-105

B

To avoid disk failure, do not perform other operations while the physical disk is being erased.

- 2. Erase Logical Disk Data
- a) As shown in Figure 4-106, select the logical disk to be erased on the VD Mgmt interface, and press F2.



Figure 4-106

b) Enter the interface shown in Figure 4-107, select the erasing mode (it is recommended to use the default mode: Simple), and press Enter.



Figure 4-107

c) Enter the interface shown in Figure 4-108, select Yes, and press Enter to complete the operation of erasing logical disk data.



Figure 4-108



Clear disk RAID information:

This function is used to clear the RAID residual information in the disk, so that the disk can be used to configure RAID again. This function is often used for disks whose mode is Unconfigured Bad.

- a) Switch the disk mode Unconfigured Bad to Unconfigured Good.
- b) As shown in Figure 4-109, on the Foreign View interface, select the RAID card, press F2, select Foreign Config->Clear, and press Enter.



Figure 4-109

c) In the displayed dialog box shown in Figure 4-110, select OK and press Enter to complete clearing disk RAID information.



Figure 4-110

Chapter 5 IPMI Deployment

5.1 Rapid deployment of IPMI process

Figure 5-1 shows the general process of how to quickly deploy the IPMI function of the server.



Figure 5-1 IPMI deployment process

5.1.1 Make sure the motherboard supports the IPMI function

Check your motherboard manual and confirm that your motherboard supports IPMI, and then find the dedicated IPMI network port for the motherboard, or you can choose a shared network port, as shown in Figure 5-2.



Figure 5-2 Motherboard dedicated network port

5.1.2 Enter BIOS to set IPMI function

Reboot your system, press the ESC or DEL key to enter the motherboard BIOS system while the device boots, and the BIOS setup interface is shown in Figure 5-3 below.

Aptio Setup Utility - Main Advanced Server Mgmt Event	- <mark>Copyright (C) 2020 America</mark> : Logs Security Boot Save	n Megatrends, Inc. & Exit
BIOS Information BIOS Vendor Core Version Compliancy Project Version Build Date and Time	American Megatrends 5.14 UEFI 2.7; PI 1.6 G2SER 0.01 x64 09/04/2020 10:53:34	Choose the system default language
CPLD name CPLD version Build Date and Time	G2SERO 01 08/28/2020	
Access Level	Administrator	
CPU Information Processor 0 Processor 1	@ 3000MHz 11 N/A	++: Select Screen 14: Select Item Enter: Select +/-: Change Opt.
Memory Information Total Memory	Total Memory: 64 GB (DDR4)	F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit
System Language	[English]	ESC: Exit
System Date System Time	[Fri 09/04/2020] [14:31:27]	
Version 2.20.1275. (Copyright (C) 2020 American N	Megatrends, Inc.

Figure 5-3 Motherboard BIOS setting interface

After entering this interface, use the left and right keys on the keyboard to switch the menu item to the Server Mgmt option, and you will see the page shown in Figure 5-4.

Aptio Setup Utility — Main Advanced Server Mgmt Event	Copyright (C) 2020 American Logs Security Boot Save	Megatrends, Inc. & Exit
Main Advanced Server Mgmt Event BMC Self Test Status BMC Device ID BMC Device Revision BMC Firmware Revision IPMI Version BMC Interface(s) BMC Support Wait For BMC System Event Log BMC network configuration View System Event Log BMC User Settings BMC Warm Reset	Logs Security Boot Save FAILED 32 1 1.09 2.0 KCS, USB [Enabled] [Disabled]	<pre>& Exit Configure BMC network parameters ++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Exit ESC: Exit</pre>
Version 2.20.1275. Co	pyright (C) 2020 American M	egatrends, Inc.

Figure 5-4 Server Mgmt interface

After entering this interface, enter the BMC network configuration option through the keyboard, and you will enter the following interface, as shown in Figure 5-5.

Aptio Setup Utility - S	Copyright (C) 2017 Americar Server Mgmt) Megatrends, Inc.
BMC network configuration BMC Dedicated Management Channel Configuration Address source Current Configuration Address sour Station IP address Subnet mask Station MAC address Router IP address Router MAC address	[Unspecified] DynamicAddressBmcDhcp 0.0.0.0 0.0.0.0 11-22-33-aa-bb-cc 0.0.0.0 00-00-00-00-00	Select to configure LAN channel parameters statically or dynamically(by BIOS or BMC). Unspecified option will not modify ang BMC network parameters during BIOS phase
BMC Sharelink Management Channel Configuration Address source Current Configuration Address sour Station IP address Subnet mask Station MAC address Router IP address Router MAC address	[Unspecified] DynamicAddressBmcDhcp 192.168.0.236 255.255.252.0 aa-bb-cc-00-00-01 192.168.1.1 00-00-00-00-00	<pre>++: Select Screen f1: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit</pre>
Version 2.19.1268. Co	opyright (C) 2017 American M	legatrends, Inc.

Figure 5-5 BMC network configuration option interface

On this page, you can see two configurable network ports, one is a dedicated network port for Dedicated, and the other is a shared network port for Sharelink. Here we take the shared network port as an example. If you connect a dedicated network port, the setting method is the same as that of the shared network port. Switch to the Configuration Address Source option and press Enter to set the network mode of the network port, as shown in Figure 5-6.

Aptio Setup Ut	ility – Copyright (C) 2017 Americ Server Mgmt	an Megatrends, Inc.
BMC network configuration- BMC Dedicated Management Cha Configuration Address source Current Configuration Address Station IP address Subnet mask Station MAC address Router IP address	nnel [Unspecified] s sour DynamicAddressBmcDhcp 0.0.0.0 0.0.0.0 11-22-33-aa-bb-cc 0.0.0.0	Select to configure LAN channel parameters statically or dynamically(by BIOS or BMC). Unspecified option will not modify any BMC network parameters during BIOS phase
Router MAC address BMC Sharelink Management Ch Configuration Address sourc Current Configuration Addre Station IP address Subnet mask Station MAC address Router IP address Router MAC address	Configuration Address source Unspecified Static DynamicBmcDhcp DynamicBmcNonDhcp aa-bb-cc-00-00-01 192.168.1.1 00-00-00-00-00	Select Screen Select Item r: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit
Version 2.19.	1268. Copyright (C) 2017 American	Megatrends, Inc.

Figure 5-6 Configuring the network mode of the network port

There are four network modes that can be configured on this interface, namely Unspecified, Static,

DynamicBMCDHCP, and DynamicBMCNonDHCP. Static is a static mode, you can manually set the IP address, DHCP is a dynamic mode, setting this item allows BMC to automatically obtain an IP address from a DHCP server.

5.1.3 IPMI interface configuration Static mode

If you choose to configure Static mode for the IPMI interface, you should pay attention to the following issues:

(1) If there are multiple IPMI devices in your LAN, it should be noted that the IP addresses between the devices cannot be repeated, otherwise communication cannot be established.

(2) If the IP of your IPMI device is an intranet address, the terminal device communicating with it must be in the same network segment as the address of the IPMI device.

(3) The IP address of the IPMI device can be mapped to the WAN through the routing device to realize remote management.

(4) The IPMI port has the function of obtaining an IP address through DHCP.

(5) IPMI supports TCP/IP v4 and TCP/IP v6 protocols.

Configure the IP address and subnet mask according to your actual situation. For example, here we set the IP address to 192.168.0.236 and the subnet mask to 255.255.252.0, as shown in Figure 5-7 below. After setting, press F4 to save and exit the BIOS interface.

Aptio Setup Utility –	Copyright (C) 2017 America Server Mgmt	an Megatrends, Inc.
BMC network configuration BMC Dedicated Management Channel Configuration Address source Current Configuration Address sour Station IP address Subnet mask Station MAC address Router IP address Router MAC address	[Unspecified] DynamicAddressBmcDhcp 0.0.0.0 0.0.0.0 11-22-33-aa-bb-cc 0.0.0.0 00-00-00-00-00	Enter router IP address
BMC Sharelink Management Channel Configuration Address source Station IP address Subnet mask Station MAC address Router IP address Router MAC address	[Static] 192.168.0.236 255.255.252.0 aa-bb-cc-00-00-01 192.168.1.1 00-00-00-00-00-00	<pre>++: Select Screen 11: Select Item Enter: Select +/-: Change Opt. F1: General Help F2: Previous Values F3: Optimized Defaults F4: Save & Reset ESC: Exit</pre>
Version 2.19.1268. Co	opyright (C) 2017 American	Megatrends, Inc.

Figure 5-7 Satic mode settings

So far we have completed the operation of configuring the IPMI function.

5.1.4 IPMI configuration Java SOL

1. Press the key when the system starts to enter the BIOS setup interface.

2. Switch to the Advanced menu, select Serial Port Console Redirection, and press the <Enter> key.

3. Make sure the Console Redirection of COM0 is in [Enabled] state, if not, select Console Redirection and press <Enter> key to set the state to [Enabled]. To ensure the normal operation of iBMC, this option has been set to [Enabled]by default.

5.2 IPMI function quick start instructions

After completing the previous configuration steps, we can start to log in to the IPMI management interface. The IPMI management interface can be accessed using a standard web browser. Here we recommend using Google Chrome, Firefox and IE browsers. browser (IE 11 or higher) for the best browsing experience. Since the new version of the operation interface is based on HTML5, the overhead on computer resources is relatively large. We recommend that users configure more than 8G of memory on the client side when using KVM.

5.2.1 Enter the operation interface

Take the Google Chrome browser as an example, enter the IPMI access address in the address bar of the browser and press Enter to access the IPMI management interface. Since the HTTP links have all been converted into HTTPS encrypted links, it will enter as shown in Figure 5-8 The privacy setting error page shown, the content of other browsers may be different.



Figure 5-8 Google Chrome privacy settings error page

On this page, click "Advanced" >> "Continue" to access the IPMI management page normally and enter the login page, as shown in Figure 5-9.

Login	
Username	
Password	
Sign me in	

Figure 5-9 IPMI management login interface

5.2.2 Default username and password

Factory default username: admin

Factory default password: admin

When you log in with this username, you will have full administrator rights. It is recommended that you change the password after logging in.

5.2.3 Contents of IPMI management system

After you log in to the IPMI management system correctly, you can see the page shown in Figure 5-10.

	=		🔮 🌲 🗢 Sync 😷 Refresh 🗛 Language 🗸	💄 admin 🗸
 Host Offline Quick Link 	Dashboard Control Panel		😽 Hon	ne > Dashboard
₩ Dashboard 88 Sensor	1 d 0 hrs HOST Running Time Since Last	17 Pending Deassertions	25 Access Logs	
System Inventory FRU Information	BMC FW Upgrade	More info 🛇	More info O	
네 Logs & Reports >	Firmware	Edit	Sensor Monitoring	
Settings	BMC Firmware Revision	A Network	All sensors are good now!	
Remote Control	1.13.1 BMC Firmware Build Time	Host System	⊖ Currently recovered	
 Image Redirection Maintenance 	Sep 10 2020 17:07:38 CST	System LAN MAC Address1 00:00:00:00:03:14		
🗭 Sign out	BIOS Revision	System LAN MAC Address2 00:00:00:00:03:15		

Figure 5-10 IPMI management system home page

IPMI management interface menu description

(1) Dashboard

On this page, users can view the basic information of the IPMI management system. Including firmware information, network information, and sensor monitoring information.

Firmware information includes BMC firmware version information, BIOS version information, motherboard CPLD version information, backplane CPLD version information, and BMC firmware compilation time information. Network information includes the MAC address of the system network and BMC network information. You can choose to view the shared network port or dedicated network port of the BMC. The BMC network information includes BMC network MAC address information, IPV4 network mode information, IPV4 address information, IPV6 network mode information and IPV6 address information.

The sensor monitoring information will display the current alarm sensor information in real time, including sensor name, sensor reading value, real-time curve change of sensor reading value and alarm status.

(2) Sensor

This page displays the status of all sensors. When there is a sensor alarm, the sensor will be displayed in the key sensor column, and when the alarm is released, the sensor will be automatically removed from the key sensor column.

(3) System inventory

On this page, you can view server CPU and memory information. In the block diagram, click the CPU block to view the CPU information. The memory block is displayed in green to indicate the existence of the memory. Click the memory block to view the memory information.

(4) Hard disk information

For a backplane with an Expander, a green square indicates that the hard disk is in place, otherwise it indicates that the hard disk is not in place. You can view the status of the hard disk on the right or under the hard disk square. Left-click the green square to view the detailed information of the hard disk, and right-click to locate the hard disk.

(5) Power consumption

Under this menu, you can cap the power consumption and check the latest power consumption.

(6) FRU information

Select this menu to view the basic information of the FRU.

(7) Logs & Reports

Under this menu, you can view IPMI time logs, audit logs, and video logs.

(8) Settings

You can configure some BMC under this menu. Including BSOD, date & time, network, etc...

(9) Remote control

On this page, KVM and SOL can be started, and power control and UID (server logo light) control can also be performed.

(10) Image redirection

On this page, you can get the latest image file on the remote storage device.

(11) Maintenance

You can perform basic maintenance operations on the server, such as BMC firmware update and BIOS firmware update.

(12) Sign out

Click to log out the current user.



5.2.4 Introduction to KVM remote management

Start KVM remote management

As shown in Figure 5-11, under the Remote Control > KVM&Java SOL Remote Control menu, you can start KVM.

	≡
Host Offline	
Quick Link 🔻	KVM & SOL KVM&SOL
A Dashboard	KVM
🚯 Sensor	
i System Inventory	🛓 Launch KVM
» FRU Information	
Logs & Reports >	Serial Over LAN
Settings	
🖵 Remote Control	🕹 Activate
Image Redirection	
✗ Maintenance	
🗭 Sign out	

Figure 5-11 Start KVM

5.2.5 KVM page introduction

As shown in Figure 5-12, it is the KVM interface after starting KVM.

Sto	р КVМ								O CD Image:	Browse Fi	ile (0 KB) Start Med
Video 🕶	Mouse 🗸	Options -	Send Keys 🕶	Hot Keys 🕶	Video Record 🗸	Power -	Active Users ▼	Help 🕶			Zoom 100 %
		BLK7:	Alias(s):								
			PciRoot(0×	1)/Pci(0>	<8,0x1)/Pci(0x0,0x3)/USB(0x1,0x	0)/USB(0x1	,0x0)/Unit(0x3)		
		BLK8:	Alias(s):								
			PciRoot(0×	:1)/Pci(0>	<8,0×1)/Pci(0x0,0x3)/USB(0x1,0x	:0)/USB(0×1	.,0x0)/Unit(0x4)		
		BLK9:	Alias(s):		a a a) in 17						
		DL KAO-	PC1Root(0x	2)/Pc1(0)	<8,0x2)/Pc1(0x0,0x0)/Sata(0x2,0	xFFFF,0x0)			
		BLK13:	HIIAS(S):	0) /Dei /0		00	Venta (aug. a				
		BL K10.	Aliac(c)	2)/FUI(0)	(0,UX2)/PCI(0x0,0x0	//sata(0x3,0	xffff,uxu)			
		DEKIV.	PriRoot(0x	2)/Pci(0)	(8 0x2)/Pri(0x0_0x0)/Sata(0x2_0	XEEEE ()x())	/HD(1_GPT_3595CEB5-	3383-4F1	74-AD
	40	D-CB1DA22	2C53C0.0x80	0.0x8000))	•••••	// outationE, o		, 10 (1) (1) (1) (0) (0) (0)	0000 11	
		BLK11:	Alias(s):								
			PciRoot(0×	2)/Pci(0>	<8,0x2)/Pci(0x0,0x0	/Sata(0x2,0	xFFFF,0x0)	/HD(2,GPT,01094C58-	80F9-443	33-AB
	78	E-B56EBDE	BDC679,0x88	100,0xC7F8	3000)						
		BLK12:	Alias(s):								
			PciRoot(0×	2)/Pci(0>	<8,0x2)/Pci(0x0,0x0)/Sata(0x2,0	xFFFF,0x0)	/HD(3,GPT,5CB2F4A7-	8281-405	5C-82
	08	B-ED02EDC	08D653,0xC8	100800,0x1	186A0000)						
		BLK15:	Alias(s):	o) (D-1 (o)	0.0.010-77		10-1-10-0				0.0 00
			PC1ROOT(UX	2)/PC1(U)	(8,0X2)/PC1(0x0,0x0	//sata(0x3,0	XFFFF,UXU)	/HD(2,GP1,06FA830F-	88EB-431	86-87
	30		Aliac(c):	1000,0X200)000)						
		DEKIO.	PriRoot(Ax	2)/Pri(0)	(8 0x2)/Pci(0x0_0x0)/Sata(0x3_0	XEEEE ()X())	/HD(3_GPT_C931A8E9-	F265-48	F0-82
	AB	E-6BB3251	127A75.0x26	4800.0x74	14A2000)	0110,0110	n outer(ono)o		r no (0) an 1,0502.1015	200 100	
	Pr	ess ESC	in 2 secor	ıds to ski	ip startup.n	sh or a	ny other key	to contin	we.		
	SI	nell>									
	SI	nell>									
	SI	nell>									
	SI	nell>									
	SI	nell>									
	SI	nell>									
	SI										

Figure 5-12 KVM interface

As shown in Figure 5-13, the KVM interface includes two parts: one part is the menu and shortcut buttons, and the other part is the remote desktop window, which is the server desktop information sent back remotely.



Figure 5-13 KVM interface composition

5.2.6 Remote control quick operation

Stop KVM	Stop KVM
OCD Image: Browse File (0 KB) Start Media	Hanging on the CD image, generally used to
	remotely install the operating system
🛕 Zoom 100 % 🖵 🙂	The host display is unlocked, the server is turned
	on/off

Table1-35



5.2.7 Introduction to SOL

Click Activate Java SOL under the page shown in Figure 5-14 to open the interface shown in Figure 5-14 below.

Gooxi 国鑫	=
Host Online	
Quick Link 🔻	KVM & SOL KVM & SOL
🕈 Dashboard	KVM
🚳 Sensor	
System Inventory	📥 Launch KVM
FRU Information	
Logs & Reports >	Serial Over LAN
Settings	
Remote Control	📥 Activate
Image Redirection	
🗲 Maintenance	
🕒 Sign out	

Figure 5-14 Enabling Java SOL

- 1. After clicking Activate, the SOL interface shown in Figure 5-15 below will appear.
- 2. Press Enter to activate the screen.



Figure 5-15 SOL operator interface

Note: The SOL interface operation function has only tested BIOS screen synchronization, other interfaces have not been

tested, this is an operation demonstration, not specifically described.

5.3 Other ways to connect to IPMI

The AST2500 firmware conforms to the IPMI 2.0 specification, so users can use the standard IPMI driver distributed by the operating system.

Gooxi

5.3.1 IPMI driver

The AST2500 supports drivers referenced by Intel, available at:

https://www.intel.com/content/www/us/en/servers/ipmi/ipmi-technical-resources.html via Windows Server 2003 R2. Microsoft also provides IPMI driver packages, and you can also use the Open IPMI driver in your system.

AST2500 supports the Open IPMI driver of the Linux kernel. Use the following commands to load the IPMI driver: "modprobe ipmi_devintf" "modprobe ipmi_si". If you are using an old version of the Linux kernel, you need to replace the "ipmi_si" component with "ipmi_kcs".

5.3.2 IPMI tools and other open source software

AST2500 supports open source IPMI tools, and you can also use other software, such as: Open IPMI, IPMI Utility, etc.

The above documents are designed to help you quickly understand and deploy the IPMI functions of the system. Regarding the detailed function operation manual of IPMI, we will provide other help documents.