

SATA RAID Controller Command Line Interface

USER Guide

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Areca Technology Corporation

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1. Introduction

This user guide provides SATA controller Command Line Interface (CLI) instructions for configuring and maintaining your SATA RAID controller. Before using this CLI, we assume that you have already installed your controller in your system. If you have not yet installed SATA RAID controller, see ARECA SATA RAID Controller Installation User manual for instructions.

1.1 Overview

This Command Line Interface (CLI) is provided for you to configure and manage the SATA RAID controller components in Windows, Linux and FreeBSD environments. The CLI is useful in environments where a graphical user interface (GUI) is not available.

The CLI contains the same functionality offered by ARECA McRAID Storage Manager – Browser Edition.

CLI commands enable you to:

- Create raid set
- Expand raid set
- Define volume set
- Add physical drive
- Modify volume set
- Modify RAID level/stripe size
- Define pass-through disk drives
- Modify system function
- Designate drives as hot spares

1.2 Supported Operating Systems

- Windows 2000, Windows XP, and Windows Server 2003.
- Linux: Redhat, SuSE
- FreeBSD

SOFTWARE INSTALLATION

2. Installing the ARECA CLI

This section describes the procedures for installing Command Line Interface (CLI).

2.1 Installing CLI on Windows

To install ARECA CLI software on Windows, copy the file cli.exe to the directory from which you want to run the program. Cli.exe is located on the Setup CD in the directory \packages\windows\cli.

There are few ways to execute the Cli.exe software, it can be run direct from the Setup CD, or copied to your computer from the Setup software CD-ROM. You can also download the CLI from the Areca web site, www.areca.com.tw.

2.2 CLI Installation for Linux and FreeBSD

ARECA CLI can be installed from the Setup software CD-ROM, or download file from the web site www.areca.com.tw in the directory \package\linux\cli or \package\freebsd\cli.

For the commands to work in any directory, type the complete path in the startup file directory where the software is installed.

To run the CLI, display a window and type cli in the directory of CLI program. When the system displays the CLI> prompt, you can use CLI commands.

3. CLI Command Line Configuration

3.1 Configuring Raid Sets and Volume Sets

You can configure raid sets and volume sets with CLI function using Raid Set/Volume Set Function manually configuration method. The configuration method requires a different level of user input. The general flow of operations for raid set and volume set configuration is:

Step	Action
1	Designate hot spares/pass-through (optional).
2	Create raid sets using the available physical drives.
3	Define volume sets using the space in the raid set.
4	Initialize the volume sets (logical drives) and use volume sets in the host OS.

3.2 Conventions

You can enter only valid CLI commands at the command line prompt.

All commands use the following syntax:

<CMD> [sub-command] [parameter]

The CLI syntax uses the following conventions for parameter:

<text> indicates items that you must specify.

[text] The text item within brackets is optional.

< | > indicate that more than one parameter can be included.

< : > indicates an 'or' situation where the user has a choice between more than one option, but only one can be specified.

< ~ > indicates a range values where the user has a choice between these two values, but only one can be specified

3.3 Command Categories

This chapter provides detailed information about the SATA RAID

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controller CLI commands. From a functional point of view, command can be grouped into the following functional categories. This list may vary depending upon the SATA controller model and the installed features.

CMD	Description
main	Show command categories
set	Open the controller to accept the CLI. It includes the controller assignment and password check.
rsf	Raid Set Functions, create, modify or delete a customized raid set.
vsf	Volume Set Functions, create modify or delete a customized volume set. It also includes the create and delete the Hot-Spare function
disk	Physical Drive Functions, view individual disk information
sys	Raid System Function, setting the raid system configurations
event	System Events records or clears all system events in the buffer
hw	Hardware Monitor information shows all system environment status

Main command

main command in this category allows you to display main commands in the SATA RAID controller. For details, see "main Command" on section 3.3.1.

Set Commands

To prepare a SATA RAID controller to receive a CLI command, you first need to select the controller. The set commands select controller and prepare it to receive more CLI Commands. Typical operations include: select the controller, and key in the password from the SATA RAID controllers. For details, see "Set Commands" on section 3.3.2.

Rsf Commands

The rsf commands perform all raid set operations on the drives and raid sets connect to the SATA RAID controller. Typical operations include: create raid set, delete raid set, create hot spare, and delete hot spare from the SATA RAID controller. For details, see "Raid Set Function" on section 3.3.3.

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Vsf Commands

The vsf commands perform all volume set operations on the raid sets connect to the SATA RAID controller. Typical operations include: create volume set, delete volume set, modify volume set, and migrate volume set from the SATA RAID controller. For details, see "volume Set Function" on section 3.3.4.

Disk Commands

The disk commands perform all pass-through operations on the drives connect to the SATA RAID controller. Typical operations include: create pass-through, delete pass-through, modify pass-through, and view disk information from the SATA RAID controller. For details, see "Disk Function" on section 3.3.5.

Sys Commands

The sys commands perform the tuning of the SATA RAID controller setting. Typical operations include: mute the controller, JBOD/RAID, modify password, rebuild priority and view controller information from the SATA RAID controller. For details, see "Raid System Function" on section 3.3.6.

Event Commands

The event command allows you to display system event notification that have been generated Event by the SATA RAID controller. Typical operations include: create pass-through, delete pass-through, modify pass-through, and view disk information from the SATA RAID controller. For details, see "event Function" on section 3.3.7.

Hw Commands

The hw command allows you to display hardware information that have been collected by controllers. The Hardware Monitor Information provides the temperature and fan speed (chassis fan) of the SATA RAID controller. For details, see "hardware Monitor Function" on section 3.3.8.

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Exit Command

To close the currently selected controller and exit the CLI, use the exit command.

Syntax

CLI> exit

Help Command

This command provides an on-line table of contents, providing brief descriptions of the help sub-commands. You can use the <CMD> -h or -help to get detail information about the sub-command.

Syntax

<CMD> -h or help

CMD: set, rsf, vsf, disk, sys, event, or, hw.

3.3.1 Main Commands

The main command shows the currently selected controller and all controllers installed (up to four are supported) in the system. This command provides a table of contents, providing brief descriptions of the commands and controller installed in the system. Typical output looks like:

The CLI command start-up screen will display the current version of CLI utility, the currently selected controller and all controllers installed in the system. . It displays all command and description including in the CLI utility. The commands are main, set, rsf, vsf, disk, sys, event, hw, and exit.

The CLI> prompt is displayed, indicating that the program is awaiting a command. The start-up screen can also be viewed by issuing the main command in the CLI> prompt.

The following is the start-up screen. After you run CLI program.

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```
Copyright (c) 2004 Areca, Inc. All Rights Reserved.  
Areca CLI, Version: 1.10( Windows )
```

Controllers List

```
-----  
Controller1: ARC-1120  
Current Controller: Controller1  
-----
```

```
CMD      Description  
=====
```

main	Show Command Categories.
set	General Settings.
rsf	RaidSet Functions.
vsf	VolumeSet Functions.
disk	Physical Drive Functions.
sys	System Functions.
event	Event Functions.
hw	Hardware Monitor Information.
exit	Exit CLI.

```
=====
```

Command Format: <CMD> [Sub-Command] [Parameters].
Note: Use <CMD> -h or -help to get details.
CLI> _

3.3.2 Set Commands

If there is more than one SATA RAID controller in the system (up to four are supported), use this command to select the appropriate controller on which to perform an action. All actions or commands will be performed only on the currently selected controller.

```
CLI> set -h  
  
Sub-Command & Parameters Of [ set ]  
Sub-Command Description  
=====
```

None.	Parameter: <ctrl=xx : password=xxxx>
	Fn: Set the controller# of currently using.
	Ex: Set the controller 1 to use.
	Command: set ctrl=1 [Enter]
	Fn: Set the password if password required.
	Ex: Set the password "0000".
	Command: set password=0000 [Enter]

```
=====
```

CLI>

To prepare a controller to receive a CLI command, you first need to select the controller. To select the controller and prepare it to receive CLI commands:

Syntax

set <ctrl=xx : password=xxxx>

Parameters

<ctrl=xx>

Description:

To prepare a SATA RAID controller to receive a CLI command,

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you first need to select the controller. You can select one SATA RAID controller at any time. To select controller and prepare it to receive more CLI Commands.

Example

```
CLI > set ctrl=1 [Enter]
```

Select the controller 1 to receive the CLI command.

```
<password=xxxx>
```

Description:

The password option allows user to set or clear the raid controller's password protection feature. Once the password has been set, the user can only monitor and configure the raid subsystem by providing the correct password. The password is used to protect the internal RAID subsystem from unauthorized entry. The controller will check the password only when entering the rsf, vsf and disk function from the initial screen. The RAID subsystem will automatically go back to the initial screen when it does not receive any command in twenty seconds. The RAID subsystem password is default setting at 0000 by the manufacture. If the password of the controller is already disabled you do not need to specify it again when selecting the controller.

Example

```
CLI > set password=0000 [Enter]
```

Enter the controller 1 password as 0000.

3.3.3 Rsf Commands

User manual configuration can complete control of the raid set setting. Select the Raid Set Function to manually configure the raid set for the first time or deletes existing raid set and reconfigures the raid set.

This command provides an on-line table of contents, providing brief descriptions of the help sub-commands. You can use the <CMD> -h or -help to get detail information about the command.

The help command rsf -h provides a table of contents, providing brief descriptions of the sub-commands. Typical output looks like:

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```
CLI> rsf -h

Sub-Command & Parameters Of [ rsf ]
Sub-Command Description
=====
create      Parameter: <drv=xxx> [name=xxx]
            Fn: Create A RaidSet.
            Ex: Create A RaidSet With Drive1,2,3,5,7 name=RaidSet1.
            Command: rsf create drv=1~3,5,7 name=RaidSet1 [Enter]

delete      Parameter: <raid=xx>.
            Fn: Delete A RaidSet.
            Ex: Delete RaidSet#1.
            Command: rsf delete raid=1 [Enter]

expand      Parameter: <raid=xx> <drv=xx>
            Fn: Expand RaidSet.
            Ex: Expand Drive 3 To RaidSet#1.
            Command: rsf expand raid=1 drv=3 [Enter]

activate     Parameter: <raid=xx>
            Fn: Activate A RaidSet.
            Ex: Activate RaidSet#1.
            Command: rsf activate raid=1 [Enter]

createhs     Parameter: <drv=xx>
            Fn: Create HotSpare Disk.
            Ex: Set Disk#3 To HotSpare Disk.
            Command: rsf createhs drv=3 [Enter]

deletehs     Parameter: <drv=xx>
            Fn: Delete HotSpare Disk.
            Ex: Delete HotSpare Disk#3.
            Command: rsf deletehs drv=3 [Enter]

info         Parameter: None.
            Fn: Display RaidSets Info.
            Command: rsf info [Enter]
=====
CLI>
```

3.3.3.1 Create Raid Set

To define raid set, follow the procedure below:

Syntax

rsf create <drive=xxx> [name =xxx]

Parameter

<drive=xxx>

Description:

The drv=xxx selects the specified the SATA drive connected to the current controller that user wants to add in a single raid set.

[name =xxx]

Description:

Enter 1 to 15 alphanumeric characters to define a unique identifier for a raid set. The default raid set name will always assign as Raidset # if the command doesn't specify the name parameter.

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Example:

To create a raid set, use the create raid set command.

In the following example, raid set is created from disk 1,2,3,5, and 7. The raid set's name is raidset1.

CLI > rsf create drv=1~3,5,7 name=raidset1 [Enter]

3.3.3.2 Delete Raid Set

To delete raid set, follow the procedure below:

Syntax

rsf delete <raid=xx>

Parameter

<raid=xx>

Description:

To change a raid set, you should first delete it and recreate the raid set. To delete a raid set, specify the raid set number that user want to delete. it will free the associated disk occupied by the raid set.

Example

CLI > rsf delete raid=1 [Enter]

The raidset1 will delete and the associated disk no. 1,2,3,5, and 7 will free.

3.3.3.3 Expand Raid Set

To expand raid set, follow the procedure below:

Syntax

rsf expand <raid=xx> [drive =xx]

Parameter

<raid=xxx>

This parameter specifies the target raid set number that user wants to expand.

[drive=xxxx]

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This parameter specifies the available disk drives that user wants to expand the raid set.

Description:

Instead of deleting a raid set and recreating it with additional disk drives, the Expand Raid Set function allows the users to add disk drive to the raid set that was created.

The new add capacity will be define one or more volume sets. Follow the instruction presented in the Volume Set Function to create the volume sets.

Note:

1. Once the Expand Raid Set process has started, user cannot stop it. The process must be completed.
2. If a disk drive fails during raid set expansion and a hot spare is available, an auto rebuild operation will occur after the raid set expansion completes.
3. Migrating occurs when a disk is added to a Raid Set. Migration status is displayed in the raid status area of the Raid Set information when a disk is added to a raid set. Migrating status is also displayed in the associated volume status area of the Volume Set Information when a disk is added to a raid set.

Example

In the following example, raid set#1 is expand by adding the disk drive 3.

```
CLI > rsf expand raid=1 drv=3[Enter]
```

3.3.3.4 Activate Incomplete Raid Set

The following screen is the Raid Set Information after one of its disk drive has removed in the power off state.

When one of the disk drive is removed in power off state, the raid set state will change to Incomplete State. After the RAID subsystem is power on in Incomplete State, user still wants to continue to work. User can use the Activate Incomplete RAID Set command to active the raid set. After user complete the function, the Raid Set State will change to Degraded Mode. To activate incomplete raid set, follow the procedure below:

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Syntax

rsf activate <raid=xx>

Parameter

<raid=xxx>

Description:

This parameter specifies the incomplete raid set number that user wants to activate it.

Example

In the following example, raid set#1 is in the incomplete state.

CLI > rsf expand raid=1 [Enter]

After user complete the command, the Raid State will change to Degraded Mode.

3.3.3.5 Create Hot Spare

To assign one or more spare disks for all raid sets, use this command. This command enables you to configure the drive as a global hot spare prior to a drive failure so that the raid sets contains the resources it needs to survive a failure.

Create Hot Spare option gives you the ability to define a global hot spare. When creating a hot spare, be sure to select a drive with an equal or larger size than the smallest drive in your raid set. Otherwise it can't be used in a rebuild.

The controller automatically assigns the new disk as the Hot-spare without your having to first assign it using this command.

To create hot spare, follow the procedure below:

Syntax

rsf createhs <drv =xx>

Parameter

<drv=xx>

Description:

This parameter specifies the disk drive that user wants to create as Hot-Spare.

Example:

```
CLI > rsf createhs drv=3 [Enter]
```

Assign the drive no. 3 as the global Hot-Spare disk.

3.3.3.6 Delete Hot Spare

This command deletes the create hot spare command defined hot spare disk.

To delete hot spare, follow the procedure below:

Syntax

```
rsf deletehs <drv =xx>
```

Parameter

```
<drv=xx>
```

Description:

This parameter specifies the hot spare disk drive that user wants to delete.

Example:

```
CLI > rsf deletehs drv=1 [Enter]
```

Free the Hot-Spare drive 1.

3.3.3.7 Raid Set Information

After creating a raid set, use this command to display information about the raid sets.

To display all raid sets information, please follow the procedure below:

Syntax

```
rsf info
```

Description:

Use this command to display all raid sets information. The raid set Information will show as following. You can only view the information of all raid sets.

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Example:

CLI > rsf info [Enter]

Display all raid sets information, which belongs to the currently selected SATA controller.

```
CLI> rsf info
=====
Num Name           Disks TotalCap FreeCap DiskChannels State
=====
1  Raid Set # 00    1   80.0GB   0.0GB 1           Normal
=====
GuiErrMsg(0x00): Success.
CLI> _
```

3.3.4 Vsf Commands

A Volume Set is seen by the host system as a single logical device. It is organized in a RAID level with one or more physical disks. RAID level refers to the level of data performance and protection of a Volume Set. A Volume Set capacity can consume all or a portion of the disk capacity available in a Raid Set. Multiple Volume Sets can exist on a group of disks in a Raid Set. Additional Volume Sets created in a specified Raid Set will reside on all the physical disks in the Raid Set. Thus each Volume Set on the Raid Set will have its data spread evenly across all the disks in the Raid Set.

The SATA RAID adapter has the following restrictions with regard to CLI terminology and nomenclature:

1. SCSI Channel—SCSI Channel always equals 0.
2. SCSI LUN /SCSI ID—"SCSI LUN /SCSI ID" always means "Volume Set"

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```
CLI> vsf -h

Sub-Command & Parameters Of [ vsf ]
Sub-Command Description
=====
create      Parameter: <raid>xx< <capacity>xxx< <level=<0|1|3|5|6>> [ch=<0>]
              [id=<0~15>] [lun=<0~7>] [name=xxxx] [tag=<V|N>]
              [cache=<V|N>] [stripe=<4|8|16|32|64|128>]
              [fginit=<V|N>]
              Fn: Create A VolumeSet.
              Ex: Create A VolumeSet Belongs To RaidSet#1, Capacity=10.5G,
                   Drive1,2,3,5,7, RaidLevel=5, name=VolumeSet1, Others Default.
              Command: vsf create raid=1 capacity=10.5 level=5 name=Volume1[Enter]

delete      Parameter: <vol>xx<
              Fn: Delete A VolumeSet.
              Ex: Delete VolumeSet#1.
              Command: vsf delete vol=1 [Enter]

modify      Parameter: <vol>xx< [level=<0|1|3|5|6>] [ch=<0>] [id=<0~15>]
              [lun=<0~7>] [name=xx] [tag=<V|N>] [cache=<V|N>]
              [stripe=<4|8|16|32|64|128>]
              Fn: Modify VolumeSet.
              Ex: Assume VolumeSet#1 Is Raid1, Modify It From Raid1 To Raid5.
              Command: vsf modify vol=1 level=5 [Enter]

check       Parameter: <vol>xx<
              Fn: Check Consistency Of VolumeSet.
              Ex: Check VolumeSet#1 Consistency.
              Command: vsf check vol=1 [Enter]

stopcheck   Parameter: None.
              Fn: Stop Consistency Check.
              Command: vsf stopcheck [Enter]

info        Parameter: None.
              Fn: Display VolumeSet Info.
              Command: vsf info [Enter]
=====
CLI>
```

3.3.4.1 Create Volume Set

The following is the volume set features for the SATA RAID controller.

1. Volume sets of different RAID levels may coexist on the same raid set.
2. Up to 16 volume sets can be created in a raid set.

The "Create Volume Set " command allows user to create the volume attribute values. The attribute column headings are:

- The Raid Level
- The Stripe Size
- The SCSI HOST/SCSI ID/SCSI LUN/
- The Cache Mode
- The Tagged Queuing
- The Volume Name (number)

To create volume set, follow the procedure below:

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Syntax

```
vsf create <raid=xx> <capacity=xxx> <level=<0:1:3:5:6>>  
          [ch=<0>] [id=<0~15>] [lun=<0~7>] <name=xxx>  
          [tag=<Y:N>] [cache=<Y:N>]  
          [stripe=<4:8:16:32:64:128>] [fginit=<Y:N>]
```

Parameters

Raid Set Number

<raid=xx>

Description;

Select the raid set number for creating the volume set.

Volume Name

<name=xxx>

Description:

The default volume name will always appear as Volume Set#. You can rename the volume set name providing it does not exceed the 15 characters limit.

Capacity

<capacity=xxx>

Description:

The maximum volume size is default in the first setting. Each volume set has a selected capacity which is less than or equal to the total capacity of the raid set on which it resides.

Raid Level

[level=<0:1:3:5:6>]

Description:

Set the RAID level for the Volume Set.

Strip Size

[stripe=<4:8:16:32:64:126>]

Description:

This parameter sets the size of the segment written to each disk in a RAID 0, 1(0+1), 5 or 6 logical drive. You can set the stripe size to 4 KB, 8 KB, 16 KB, 32 KB, 64 KB, or 128 KB.

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SCSI Channel

[ch=<0>]

Description:

ch represents Channel, which is always zero on the SATA RAID controller.

SCSI ID

[id=<0~15>]

SCSI LUN

[lun=<0~7>]

Description:

SCSI LUN /SCSI ID—"SCSI LUN /SCSI ID" always means "Volume Set"

Cache Mode

[cache=<Y:N>]

Description:

This command allows you to turn on or off the write-back cache on a specified unit.

User can set the cache mode to: Write-Through Cache (N) or Write-Back Cache (Y).

Tag Queuing

[tag=<Y:N>]

Description:

The Enabled option is useful for enhancing overall system performance under multi-tasking operating systems. The Command Tag (Drive Channel) function controls the SCSI command tag queuing support for each drive channel. This function should normally remain enabled. Disable this function only when using older SCSI drives that do not support command tag queuing.

Initialization

[fginit=<Y:N>]

Description:

In the Background Initialization (N), the initialization proceeds

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as a background task, the volume set is fully accessible for system reads and writes. The operating system can instantly access to the newly created arrays without requiring a reboot and waiting the initialization complete. In Foreground Initialization (Y), the initialization proceeds must be completed before the volume set ready for system accesses.

Example:

To create a volume set, use the create volume set command. In the following example, Volume 0 is created from raid set 1 on device ch:0 id:01 lun:0 from 1.5GB of available space. The volume set's cache and tag are enabled, and the name is areca. The volume set sets in RAID level 5 and Foreground Initialization mode.

```
CLI>vsf create raid=1 capacity=1.5 level= 5 ch=0 id=1 lun=0  
name=areca tag=Y cache=Y stripe=16 fginit=Y
```

3.3.4.2 Delete Volume Set

To delete volume set, follow the procedure below:

Syntax

```
vsf delete <vol=xx>
```

Parameters

```
<vol=xx>
```

Description:

Use this command to delete Volume set from raid set system function.

Example

```
CLI > vsf delete vol=1 [Enter]  
Delete the volumeSet#1.
```

3.3.4.3 Modify Volume Set

To modify volume set, follow the procedure below:

Syntax

```
vsf create <vol=xx> [level=<0:1:3:5:6>] [ch=<0>]  
[id=<0~15>] [lun=<0~7>] [name=xxx] [tag=<Y:  
N>] [cache=<Y:N>] [stripe=<4:8:16:32:64:128>]
```

Parameters

```
<vol=xx> [level=<0:1:3:5:6>] [ch=<0>] [id=<0~15>]  
[lun=<0~7>] [name=xxx] [tag=<Y:N>] [cache=<Y:N>]  
[stripe=<4:8:16:32:64:128>]
```

Description:

The user can use the Modify Volume Set command to change the current selected volume set attributes are defined by the Volume Set Create command. The attribute column headings are:

- The Raid Level
- The Stripe Size
- The SCSI ID/SCSI LUN/
- The Cache Mode
- The Tagged Queuing
- The Volume Name (number)

Note:

Migrating occurs when a volume set is migrating from one RAID level to another, a Volume set strip size changes, or when a disk is added to a Raid Set. Migration status is displayed in the volume status area of the Volume Set Information when one RAID level to another, a Volume set strip size changes or when a disk is added to a raid set.

3.3.4.4 Check Volume Set

Syntax

```
vsf check <vol=xx>
```

Parameters

```
<vol=xx>
```

Description:

Use this option to verify the correctness of the redundant data

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in a volume set. For example, in a system with dedicated parity, volume set check means computing the parity of the data disk drives and comparing the results to the contents of the dedicated parity disk drive.

3.3.4.5 Stop Volume Set Check

To display volume set information, follow the procedure below:

Syntax

vsf stopcheck

Description:

Use this option to stop all the Check Volume Set function.

3.3.4.6 Display Volume Set Info.

After creating all volume sets, use the command to display information about the selected SATA controller.

To display volume set information, follow the procedure below:

Syntax

vsf info <vol =xx>

Parameter

<vol=xx>

Description:

Use this command to display all Volume Sets information. The Volume Set Information will show as following. You can only view the information of all Volume Sets.

Example:

CLI > vsf info [Enter]

Display all volume sets information, which belong to the currently selected SATA controller.

```
CLI> vsf info
# Name          Raid# Level  Capacity Ch/Id/Lun Speed  State
-----
1 ST380013AS    1   PassThr.  80.0GB 00/00/00 ATA150 Normal
-----
GuiErrMsg<0x00>: Success.
CLI>
```


3.3.5 Disk Commands

Use the disk commands to manage disks connected to the SATA RAID controller. The CLI enables you to create, delete and modify the pass through disk characteristics.

```
CLI> disk -h

Sub-Command & Parameters Of [ disk ]
Sub-Command      Description
=====
create      Parameter: <drv=xx> [ch=<0>] [id=<0~15>] [lun=<0~7>] [tag=<Y:N>]
              [cache=<Y:N>]
              Fn: Create A PassThrough Disk.
              Ex: Create A PassThrough Disk With Disk#1.
              Command: disk create drv=1 [Enter]

delete      Parameter: <drv=xx>
              Fn: Delete A PassThrough Disk.
              Ex: Delete PassThrough Disk#1.
              Command: disk delete drv=1 [Enter]

modify      Parameter: <drv=xx> [ch=<0>] [id=<0~15>] [lun=<0~7>] [tag=<Y:N>]
              [cache=<Y:N>]
              Fn: Modify A PassThrough Disk.
              Ex: Assume The Disk#1 Lun=0, Change Lun To 3.
              Command: disk modify drv=1 lun=3 [Enter]

info        Parameter: None.
              Fn: Display Disks Info.
              Command: disk info [Enter]
=====
CLI>
```

3.3.5.1 Create Pass-Through Disk

To create pass-through disk, follow the procedure below:

Syntax

```
disk create <drive=xx> [ch=<0>] [id=<0~15>] [lun=<0~7>]
              [tag=<Y:N>] [cache=<Y:N>]
```

Parameters

Drive Number

<drive=xx>

Description:

Select the disk number for creating the pass-through disk.

SCSI Channel

[ch=<0>]

Description:

ch represents Channel, which is always zero on the SATA RAID controller.

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SCSI ID

[id=<0~15>]

SCSI LUN

[lun=<0~7>]

Description:

SCSI LUN /SCSI ID—"SCSI LUN /SCSI ID" always means "Pass-Through disk"

Tag Queuing

[tag=<Y:N>]

Description:

The Enabled option is useful for enhancing overall system performance under multi-tasking operating systems. The Command Tag (Drive Channel) function controls the SCSI command tag queuing support for each drive channel. This function should normally remain enabled. Disable this function only when using older SCSI drives that do not support command tag queuing.

Cache Mode

[cache=<Y:N>]

Description:

This command allows you to turn on or off the write-back cache on a specified unit.

User can set the cache mode to: Write-Through Cache (N) or Write-Back Cache (Y).

3.3.5.2 Delete Pass-Through Disk

To delete pass-through disk, follow the procedure below:

Syntax

disk delete [parameters]

Parameters:

<drive=xx> - pass-through disk drive for which to delete.

Description:

Use this command to delete Pass-through drive from the Pass-

through drive pool.

3.3.5.3 Modify Pass-Through Disk

To create pass-through disk, follow the procedure below:

Syntax

```
disk modify <drive=xx> [ch=<0>] [id=<0~15>]  
[lun=<0~7>] [tag=<Y:N>] [cache=<Y:N>]
```

Parameters :

```
<drive=xx> [ch=<0>] [id=<0~15>] [lun=<0~7>] [tag=<Y:  
N>] [cache=<Y:N>]
```

Description:

Use this option to modify the Pass-Through Disk Attribute. The Disk Attributes are defined by the Create Pass-Through Disk command.

3.3.5.4 Display Pass-Through Disk Info

After creating all pass-through disk, use the command to display information about the selected SATA controller.

To display all pass-through disks information, please follow the procedure below:

Syntax

```
disk info
```

Description:

Use this command to display all pass-through disk information. The pass-through disk Information will show as following. You can only view the information of all pass-through disks.

Example

```
CLI > disk info [Enter]
```

Display all pass-through disks information, which belong to the currently selected SATA controller.

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3.3.6 Raid System Function

To facilitate tuning of the SATA RAID controller for its operation, a number of controller settings can be changed.

The `sys -h` command can view the sub-command and parameters of the [`sys`] function.

```
CLI> sys -h

Sub-Command & Parameters Of [ sys ]
Sub-Command      Description
=====
beeper           Parameter: <p=<0<mute>!1<disable>!2(enable)>>>
                  Fn: Beeper Settings.
                  Ex: Mute Beeper.
                  Command: sys beeper p=0 [Enter]

changepwd        Parameter: <p=xxx>
                  Fn: Change Password.
                  Ex: Change Password To "11111".
                  Command: sys changepwd p=11111 [Enter]

mode             Parameter: <p=<0(RAID)!1(JOB)>>>
                  Fn: Change The Host Mode.
                  Ex: Assume Host Mode Is RAID, Change The Host Mode To JBOD.
                  Command: sys mode p=1 [Enter]

rebuildpt        Parameter: <p=<0(Low)!1(Low)!2(Medium)!3(High)>>>
                  Fn: Change The Rebuild Priority.
                  Ex: Change The Rebuild Priority To High(3).
                  Command: sys rebuildpt p=3 [Enter]

info            Parameter: None.
                  Fn: Display System Info.
                  Command: sys info [Enter]
=====
CLI> _
```

3.3.6.1 Mute The Alert Beeper

To view the disk drive information, follow the procedure below:

Syntax

`sys beeper <p=<0<mute>!1<disable>!2(enable)>>>`

Parameter

`p=<0<mute>>>`

Description:

The Mute The Alert Beeper command is used to control the SATA RAID controller Beeper function. This command turns the beeper off temporarily. The beeper will still activate on the next event.

Example

CLI > `sys beeper p=0` [Enter]

This command turns the selected SATA RAID controller beeper off temporarily. The beeper will still activate on the next event.

3.3.6.2 Alert Beeper Setting

Syntax

sys beeper <p=<0<mute>:1<disable>:2<enable>>>

Parameter

<p=<0<mute>:1<disable>:2<enable>>>

Description:

The Alert Beeper function item is used to Disabled or Enable the SATA RAID controller alarm tone generator. Set the parameter to 2 to turn the beeper off.

Example

CLI > sys beeper p=2 [Enter]

The Alert Beeper function command enables the SATA RAID controller alarm tone generator

3.3.6.3 Change Password

To change the password, follow the procedure below:

Syntax

sys changepwd <p=xxx>

Parameter

<P=xxx>

Description:

The password option allows user to set or clear the raid subsystem's password protection feature. Once the password has been set, the user can only monitor and configure the raid subsystem by providing the correct password. The password is used to protect the internal RAID subsystem from unauthorized entry. The controller will check the password only when entering the Main menu from the initial screen. The RAID subsystem will automatically go back to the initial screen when it does not receive any command in twenty seconds.

To disable the password, leave the parameter column blank. The existing password will be cleared. No password checking will occur when entering the main menu from the starting screen.

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Example

CLI > sys changepwd p=11111 [Enter]

The selected SATA RAID controller password will change to new password:11111.

3.3.6.4 RAID/JBOD Function

To change the password, follow the procedure below:

Syntax

sys mode <p=<0<JBOD>:1<RAID>>

Parameter

<p=<0<JBOD>:1<RAID>>

Description:

The RAID/JBOD command is used to set the SATA RAID controller working at the JBOD or RAID mode. JBOD is an acronym for "Just a Bunch Of Disk". It represents a volume set that is created by the concatenation of partitions on the disks. It can see all individual disks, when you select the JBOD option. User needs to delete the RAID set, when you want to change the option from the RAID to the JBOD function.

Example

CLI > sys mode p=JBOD [Enter]

Set the controller works at JBOD mode.

3.3.6.5 RAID Rebuild Priority

To change the password, follow the procedure below:

Syntax

sys rebuildpt <p=<0<ulow>:1<low>:2<medium>:3<high>>

Parameter

<p=<0<ulow>:1<low>:2<medium>:3<high>>

Description:

The "Raid Rebuild Priority" is a relative indication of how much time the controller devotes to a rebuild operation. The SATA

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RAID controller allows user to define the rebuild priority (ulow, low, normal, high) to balance volume set access and rebuild tasks appropriately.

Example

CLI > sys rebuildpt p=0 [Enter]

Set the controller works at ultra low rebuild rate. It will provide more computing resources for the system activity.

3.3.6.6 System Information

Choose this option to display Main processor, CPU Instruction cache and data cache size, firmware version, serial number, controller model name, and the cache memory size.

To view the system information, follow the procedure below:

Syntax

sys info

Description:

This command provides currently selected SATA RAID controller system information.

Example

CLI > sys info [Enter]

All the major controller system information will be displayed.

```
CLI> sys info
The System Information
=====
Main Processor   : 500MHz
CPU ICache Size : 32KB
CPU DCache Size : 32KB
System Memory   : 128MB/333MHz
Firmware Version : 01.33 2004-9-6
BOOT ROM Version : 01.33 2004-8-2
Serial Number    : 12345678901234
Controller Name  : ARC-1120
=====
GuiErrMsg(0x00): Success.
CLI>
```

3.3.7 View System Events

A management program is almost useless without reporting or notification function ability. For this reason, the GUI RAID Manager enables you to configure notifications to occur in response

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to various disk array events. For example, if you configure an e-mail notification, the GUI RAID Manager will send an e-mail to selected computers on the network if the event (that just occurred) falls within the selected notification level. If the notification is detailed enough, the recipient can respond accordingly. The event command provides a log of events that have occurred on the SATA RAID controller. An event occurs when the SATA RAID controller requires attention, such as when a raid set becomes degraded and is no longer fault tolerant.

The event -h command can view the sub-command and parameters of the event function.

```
CLI> event -h

Sub-Command & Parameters Of [ event ]
Sub-Command Description
=====
info      Parameter: None.
          Fn: Display System Events.
          Command: event info [Enter]

clear     Parameter: None.
          Fn: Clear System Events.
          Command: event clear [Enter]
=====
CLI>
```

Syntax
event info

Description:
Choose this option to view the system events information.

Example
CLI > event info [Enter]
All the event of the currently selected controller information will be displayed.

```
CLI> event info

Date-Time      Device      Event Type
=====
2004-9-16  11:30:22  IDE Channel # 1  Start Initialize
2004-9-16  11:30:16  IDE Channel # 1  Start Migrating
=====
GuiErrMsg<0x00>: Success.
CLI>
```

Syntax
event clear

Description:
This command clears the entire events buffer information.

Example

CLI > event clear [Enter]

All the event of the currently selected controller information will be cleared.

3.3.8 Hardware Monitor

To display the cooler fan, and the associated disk temperature status, use the hardware Monitor command.

The hw -h command can view the sub-command and parameters of the [hw] function.

```
CLI> hw -h
Sub-Command & Parameters Of [ hw ]
Sub-Command Description
=====
info      Parameter: None.
          Fn: Display Hardware Monitor Information.
          Command: hw info [Enter]
=====
CLI>
```

To view the hardware monitor information, follow the procedure below:

Syntax

hw info

Description:

Choose this option to view the hardware monitor information.

Example

CLI > hw info [Enter]

All the hardware monitor of the currently selected controller information will be displayed.

```
CLI> hw info
The Hardware Monitor Information
=====
Fan#1 Speed (RPM) : 2574
HDD #1 Temp.      : 38
HDD #2 Temp.      : 0
HDD #3 Temp.      : 0
HDD #4 Temp.      : 0
HDD #5 Temp.      : 0
HDD #6 Temp.      : 0
HDD #7 Temp.      : 0
HDD #8 Temp.      : 0
=====
GuiErrMsg<0x00>: Success.
CLI>
```