Intel® System Configuration Utility

User Guide

Reference for using the Intel® System Configuration Utility (Syscfg).

Rev 1.02
December 2017

Intel® Server Products and Solutions
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<table>
<thead>
<tr>
<th>Date</th>
<th>Revision</th>
<th>Description</th>
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<tr>
<td>Jul 2016</td>
<td>1.00</td>
<td>First version</td>
</tr>
<tr>
<td>Nov 2016</td>
<td>1.01</td>
<td>Removed version 13.1, update to version 14.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Modified Linux installation note</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Added new feature ‘Save BMC SOL log’</td>
</tr>
<tr>
<td>August 2017</td>
<td>1.02</td>
<td>Removed utility version</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Added new supported platform</td>
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<tr>
<td></td>
<td></td>
<td>Added new options for the command of “/lc”</td>
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1. Introduction

The Intel® System Configuration Utility (Syscfg) is a command-line utility that can be used to display and/or set a variety of system BIOS and management firmware settings. In addition, the utility can be used to save system settings to or restore them from a file.

The Syscfg utility’s features and instructions on the use of all supported commands are described in this User Guide.

The Intel® System Configuration Utility is only supported on the following Intel® Server Products:

- Intel® Server Board based on Intel® Xeon® processor E5-1600/2600/4600 v2 family
- Intel® Server Board based on Intel® Xeon® processor E5-2400 v2 product family
- Intel® Server Board based on Intel® Xeon® processor E5-2600 v3/v4 family
- Intel® Server Board based on Intel® Xeon® processor E3-1200 v2/v3/v4 family
- Intel® Server Board based on Intel® Xeon® processor E3-1200 v5 family
- Intel® Server Board based on Intel® Xeon® Phi™ family
- Intel® Server Board based on Intel® Xeon® processor Scalable family

The Intel® System Configuration Utility is not intended for and should not be used on any non-Intel server products.

Note: Not all BIOS or management firmware settings can be set using this utility. Refer to the Product Guide for the Intel® Server Board for a complete list of BIOS settings. Refer to IPMI—Intelligent Platform Management Interface Specification, Second Generation, v2.0 for information on the standard management firmware settings.

1.1 Operating Systems Supported

This version of the Syscfg utility supports the Operating System versions listed in Table 1. Use Table 1 to determine which operating systems are supported for a specific Intel® Server Board.

Table 1. Operating systems supported

<table>
<thead>
<tr>
<th>Platforms</th>
<th>Operating systems / Preboot Environment Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel® Server Board based on Intel® Xeon® processor E5-1600/2600/4600 v2 family</td>
<td>EFI Shell</td>
</tr>
<tr>
<td>Intel® Server Board based on Intel® Xeon® processor E5-2400 v2 family</td>
<td>Windows® 2016 (EM64T)</td>
</tr>
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<td>Intel® Server Board based on Intel® Xeon® processor E5-2600 v3/v4 family</td>
<td>Windows Server® 2012 (32bit and EM64T)</td>
</tr>
<tr>
<td>Intel® Server Board based on Intel® Xeon® processor E3-1200 v2/v3/v4 family</td>
<td>Windows Server 2012 R2 (EM64T)</td>
</tr>
<tr>
<td>Intel® Server Board based on Intel® Xeon® processor E3-1200 v5 family</td>
<td>Windows Server 2008 R2 SP1 EM64T</td>
</tr>
<tr>
<td>Intel® Server Board based on Intel® Xeon® Phi™ family</td>
<td>Windows Server 2008 (32bit and EM64T)</td>
</tr>
<tr>
<td>Intel® Server Board based on Intel® Xeon® processor Scalable family</td>
<td>Windows Server 2003 (32 bit SP2 and EM64T SP2)</td>
</tr>
<tr>
<td></td>
<td>Windows 7* (32 bit and EM64T) for work station SKU's</td>
</tr>
<tr>
<td></td>
<td>RHEL* 6.x and 7.x (32 bit and EM64T)</td>
</tr>
<tr>
<td></td>
<td>CentOS 6.x/7.x (32 bit and EM64T)</td>
</tr>
<tr>
<td></td>
<td>SuSE® Linux* 11 SP1/SP2/SP3/SP4 and 12.x (32 bit and EM64T)</td>
</tr>
</tbody>
</table>
1.2 Target Audience

This User Guide is intended for Original Equipment Manufacturers and those responsible for configuring the system BIOS and Management Firmware settings on an Intel® Server System.

1.3 Reference Documents

The following documents should be referenced for additional support and usage information.

- Server Product Guides for BIOS Setup Options
- Intel® Server Configuration Utilities Deployment Procedure for Windows PE 2005*

1.4 Support Information

For more information, visit Intel's support site at http://support.intel.com/support/.

For an updated support contact list, see http://www.intel.com/support/9089.htm/.
2. Using the Intel® System Configuration Utility (Syscfg)

Syscfg is a command-line scriptable utility that can be used to save and restore BIOS and firmware settings to a file, or to set and display individual BIOS settings. Syscfg may be used in a script to automate the process of configuring multiple servers. A few commands may not be supported on all platforms due to limitations in the platform firmware/BIOS. The description of each command lists any limitations.

The general syntax is:

```
    syscfg [{/|~}command [arguments]] [...next_command [arguments]]
```

Multiple commands may be specified on a single line unless otherwise noted in the Command Reference description. The maximum line length is 127 characters.

**Note:** This version of the utility can be run from EFI, Linux®, the Windows® command prompt, and Windows® Preinstallation Environment (Windows® PE). Some platforms may not support all the operating environments for this utility.
3. Quick Start

This section contains Quick Start instructions for supported operating systems.

3.1 Syscfg Installation

Syscfg requires Windows* administrative or Linux* root permissions.

A. Linux*
   o Regular Installation:
     i. Boot into Linux and unzip the Syscfg utility .zip file into a folder on a hard drive. After unzipping the file, the RHEL* or SLES* folder is generated.
     ii. The Syscfg directory contains the file: Syscfg.zip
     iii. Unzip the file to get the Syscfg binaries and execute the Syscfg commands.
     iv. To uninstall the Syscfg utility, remove the Syscfg folder structure.
   o RPM Installation:
     i. Boot into Linux and unzip the Syscfg utility .zip file into a folder on a hard drive. Copy Syscfg rpm from Linux_x86 or Linux_x64 (for RHEL* or SLES*) to a local folder.
     ii. If there is another version already has been installed previously, uninstall that version first before installing the new version.
     iii. Install the Syscfg utility by using rpm -ivh syscfg-Vxx.x-Bxx.xxx.rpm. This installs the utility in /usr/bin/syscfg/.
     iv. In RHEL/SLES after installing the rpm, close the terminal from which rpm was installed and then execute the utility from a new terminal (for example, # syscfg -i).
     v. To uninstall Syscfg, execute the following command: rpm –e syscfg

B. UEFI
   I. Unzip the Syscfg utility .zip file to a USB pen drive. Boot into EFI and go to the UEFI_x64 folder.
   II. Run the Syscfg commands from the location where the files are copied.
   III. To uninstall the Syscfg utility, delete the contents of the directory where the utility is installed.

C. Windows*/Windows* Preinstallation Environment (Windows* PE):
   I. Copy the Syscfg utility .zip file into a local directory (for example, C:\syscfg).
   II. Unzip the .zip file.
   III. The following folders contain Windows* binaries and drivers in C:\syscfg folder.
       - Win_x64
       - Win_x86
       - Drivers
   I. For 32-bit or EM64T operating system, go to folders:
      SyscfgVxx_x_BuildXX\Drivers\win\x86 or
      SyscfgVxx_x_BuildXX\Drivers\win\x64 and run install.cmd to install the Intel® Intelligent Management Bus Driver Vxx.x, Intel® 28F320C3 Flash Update Device Driver Vxx.x, and Intel® Intelligent Management Utility Device Vxx.x.
   II. From the command prompt go to the Win_x64 or Win_x86 folder and run the desired commands for the utility.
   III. To uninstall the Syscfg utility, do the following:
       i. Delete the contents of the directory where the utility is installed.
       ii. Manually uninstall the drivers from the Device Manager.
3.2 Saving a Configuration

The utility uses a text-based .INI file to save and restore BIOS and Management firmware settings in both binary and text formats. Being a text-based file, the available BIOS and Management firmware settings can be easily modified and saved using any text editing tool.

To save the BIOS and firmware configuration to a file, do the following:

1. Boot to one of the supported operating systems on the target system.
2. Change directories to the location of the Syscfg executable file. (This location must be writable to allow the system configuration to be saved)
   - In Windows, Windows PE, or EFI, type:
     
     ```
     syscfg /s <filename>.ini
     ```
   - In Linux, type:
     
     ```
     ./syscfg /s <filename>.ini
     ```

Use this saved INI file to restore the configuration on this target server or other servers using the /r command.

3.3 Restoring a Configuration

The Syscfg utility supports restoring BIOS and Management firmware settings in both binary and text mode using a text-based .INI file. In the following scenario, the .INI file does not clone servers, but instead provides a mechanism of configuring the same items with different values as needed.

To restore or install a system configuration from a saved .INI file, use the following procedure.

**Note:** For restoring uneditable fields, the section name headers and key names should not be edited or deleted from the .INI file.

1. Boot the system to one of the supported operating systems.
2. Change to the directory containing the Syscfg executable. (The saved .INI configuration file should also be located in this directory.)
3. To restore the saved BIOS settings:
   - In Windows, Windows PE, or EFI, type:
     
     ```
     syscfg /r <filename>.ini /b
     ```
   - In Linux, type:
     
     ```
     ./syscfg /r <filename>.ini /b
     ```
4. On an Intel® Server Platform, the BIOS administrator password must be supplied.
   - If the BIOS administrator password is set
     In Windows, Windows PE, or EFI, type:
     
     ```
     syscfg /r filename.ini /b /bap <BIOS administrator password>
     ```
     In Linux, type:
     
     ```
     ./syscfg /r filename.ini /b /bap <BIOS administrator password>
     ```
   - If the BIOS administrator password is not set
     In Windows, Windows PE, or EFI, type:
     ```
     syscfg /r filename.ini /b
     ```
     In Linux, type:
     ```
     ./syscfg /r filename.ini /b
     ```

3.4 Displaying Syscfg Help

To display Syscfg help, type: `syscfg /h`

3.5 Displaying Current BIOS and Firmware Versions

To display the current BIOS and firmware settings, type: `syscfg /i`
4. Using Commands

This section lists the Generic commands and switches, BIOS commands, and Firmware commands and all of their tasks.

4.1 Syscfg Commands - Quick Reference (Generic, BIOS, and Firmware)

Table 2 lists all the Syscfg commands that are classified as generic, BIOS, and Firmware.

| Table 2. Syscfg commands - quick reference |

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>/d</td>
<td>Display</td>
</tr>
<tr>
<td>/i</td>
<td>Information</td>
</tr>
<tr>
<td>/q</td>
<td>Quiet Mode switch</td>
</tr>
<tr>
<td>/r</td>
<td>Restore</td>
</tr>
<tr>
<td>/s</td>
<td>Save</td>
</tr>
<tr>
<td>/bap</td>
<td>BIOS Administrator Password</td>
</tr>
<tr>
<td>/bup</td>
<td>BIOS User Password</td>
</tr>
<tr>
<td>/bbosys</td>
<td>System Boot Order</td>
</tr>
<tr>
<td>/bbo</td>
<td>System Boot Order in detail</td>
</tr>
<tr>
<td>/bcs</td>
<td>BIOS Configure Setting</td>
</tr>
<tr>
<td>/bldfs</td>
<td>BIOS Load Default Factory Settings</td>
</tr>
<tr>
<td>/bvar</td>
<td>This command creates a new UEFI variable</td>
</tr>
<tr>
<td>/secureboot</td>
<td>Set EFI Secure Boot status</td>
</tr>
<tr>
<td>/securebootkey</td>
<td>Set EFI Secure Boot key</td>
</tr>
<tr>
<td>/c</td>
<td>Channels</td>
</tr>
<tr>
<td>/lac</td>
<td>LAN Alert Configuration</td>
</tr>
<tr>
<td>/pefsc</td>
<td>PEF Configure</td>
</tr>
<tr>
<td>/ue</td>
<td>Users</td>
</tr>
<tr>
<td>/le</td>
<td>LAN Enable</td>
</tr>
<tr>
<td>/rbmc</td>
<td>Reset BMC</td>
</tr>
<tr>
<td>/rfs</td>
<td>Restore firmware settings</td>
</tr>
<tr>
<td>/rnm</td>
<td>Reset Intel® Node Manager</td>
</tr>
<tr>
<td>/sbmcdl</td>
<td>Save BMC debug log</td>
</tr>
<tr>
<td>/sdp</td>
<td>Set shutdown policy</td>
</tr>
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4.2 Generic Commands/Switches

4.2.1 Information (/i)

Usage

```
system /i [filename.INI]
```

Description

Displays the BIOS and firmware versions of the system or the saved BIOS and firmware settings in a System Configuration File. See Table 3.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filename</td>
<td>Filename for a System Configuration File in the current working directory. If the filename is not specified, the command displays the BIOS and firmware versions of the current system.</td>
</tr>
</tbody>
</table>

Examples

```
system /i
system /i btp.ini
```

4.2.2 Quiet (/q)

Usage

```
system options /q
```

Description

Suppresses all messages. See Table 4.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Options</td>
<td>Any other valid option. The /q switch must be at the end of the command line.</td>
</tr>
<tr>
<td>/q</td>
<td>Quiet Mode. This option prevents all output from the command.</td>
</tr>
</tbody>
</table>

Example

```
system /r /f /b /q
```
4.2.3  **Restore (/r)**

**Usage**

```
syscfg /r [filename.INI] {/f | /b | /f /b}
```

**Description**

Restores the BIOS and firmware settings from an INI file. See Table 5.

**Table 5. Restore (/r) options**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filename</td>
<td>Filename of the <code>syscfg</code> configuration file in the current working directory. If no filename is specified, the default filename <code>syscfg.ini</code> is used based on the parameter supplied, as explained in the Example below. The filename suffix must be .INI.</td>
</tr>
<tr>
<td>/f</td>
<td>Restore the firmware settings. See Appendix B for a list of the settings that are restored.</td>
</tr>
<tr>
<td>/b</td>
<td>Restore the BIOS settings. See Appendix B for a list of the settings that are restored.</td>
</tr>
<tr>
<td>/nobo</td>
<td>This option is used in conjunction with /r to skip restoring boot order.</td>
</tr>
</tbody>
</table>

**Example**

```
syscfg /r /f /b (default file name is syscfg.ini)
syscfg /r saved.ini /f
syscfg /r myscfg.ini /b /bap kwqt821

syscfg /r ini /f /b (default file name is syscfg.ini)
syscfg /r ini /f /b /nobo (default file name is syscfg.ini)
syscfg /r saved.ini /f
syscfg /r myscfg.ini /b /bap kwqt128
```

**Notes:**

- One or both of the `/r` and `/f` options are required. If the BIOS Administrator password is set, use the `/bap` command to enter the password.
- The static IP Address assigned by a DHCP server, the BIOS boot order, and other dynamic BIOS settings are not saved or restored.
4.2.4  Save (/s)

Usage

```
syscfg /s [filename.INI] /f | /b | /f /b
```

Description

Saves the BIOS and firmware settings to an .INI file. See Table 6.

**Table 6. Save (/s) options**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Filename</strong></td>
<td>Filename to be used for the Syscfg configuration file in the current working directory. If no filename is specified, the default filename <code>syscfg.ini</code> is used based on the parameter supplied explained in the example below. The filename suffix must be .INI; if omitted, <code>syscfg</code> adds the .INI suffix. The filename should consist of only alphanumeric characters.</td>
</tr>
<tr>
<td><code>/f</code></td>
<td>Save the firmware settings. See Appendix B for a list of the settings that are saved.</td>
</tr>
<tr>
<td><code>/b</code></td>
<td>Save the BIOS settings. See Appendix B for a list of the settings that are saved.</td>
</tr>
</tbody>
</table>

Examples

```
syscfg /s /f /b (default file name is syscfg.ini)
syscfg /s saved.ini /f

syscfg /s ini /f /b (default file name is syscfg.ini)
syscfg /s saved.ini /b
```

Notes:

- The Save/Restore process following the INI file is not a means for exact cloning between the servers; it is a means to clone a subset of BIOS/firmware configurable settings and duplicate those settings in the deployed servers.
- Save and restore of Host IP, Subnet Mask, Default Gateway IP, and Backup Gateway IP is not supported on the Intel® Server Platform.
4.2.5 Display (/d)

Usage

```
syscfg /d {CHANNEL Channel_ID | BIOS | BIOSSETTINGS { | LAN Channel_ID
   LAN_Alert_Destination_Index | POWER | PEF Filter_Table_Index
   [Policy_Table_Index] | SOL Channel_ID) | USER User_ID [Channel_ID] |
   FWADVCFG Channel_ID [User_ID [SMTP_Configuration_Index] ] | SDP |
   SECUREBOOT }
```

Description

Displays the specified Baseboard Management Controller (BMC) and BIOS settings. See Table 7.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHANNEL</td>
<td>Displays the BMC Channel configuration for the specified channel.</td>
</tr>
<tr>
<td>Channel_ID</td>
<td>IPMI Channel ID.</td>
</tr>
<tr>
<td>BIOS</td>
<td>Displays the current values of the BIOS settings that can be configured with this utility (except the Administrator and User passwords).</td>
</tr>
<tr>
<td>BIOSSETTINGS</td>
<td>Displays values of a subset of the BIOS settings. The arguments that follow this keyword are used to select which BIOS settings to display.</td>
</tr>
<tr>
<td>BIOS_Setting_Name</td>
<td>The name of the BIOS settings on the BIOS Setup screen. Refer to the Technical Product Specification for the BIOS Setup for setting names for a specific board.</td>
</tr>
<tr>
<td>LAN</td>
<td>Displays the BMC LAN channel configuration. The operating system settings may be different.</td>
</tr>
<tr>
<td>POWER</td>
<td>Displays the power restore policy.</td>
</tr>
<tr>
<td>PEF</td>
<td>Displays the Platform Event Filters.</td>
</tr>
<tr>
<td>SOL</td>
<td>Displays the Serial Over LAN settings.</td>
</tr>
<tr>
<td>USER</td>
<td>Displays the BMC user settings.</td>
</tr>
<tr>
<td>Channel_ID</td>
<td>IPMI Channel ID.</td>
</tr>
<tr>
<td>LAN_Alert_Destination_Index</td>
<td>Enter the LAN Alert Destination Index.</td>
</tr>
<tr>
<td>Filter_Table_Index</td>
<td>Enter the Filter Table Index.</td>
</tr>
<tr>
<td>Policy_Table_Index</td>
<td>Enter the PEF Policy Table Index.</td>
</tr>
<tr>
<td>User_ID</td>
<td>Enter an integer between 1 and n, where n is the number of users supported by the platform for the BMC User ID. User ID 1 is the anonymous user (no password).</td>
</tr>
<tr>
<td>FWADVCFG</td>
<td>Displays the advanced firmware settings for the channel, users, and SMTP configuration.</td>
</tr>
<tr>
<td>Channel_ID</td>
<td>IPMI Channel ID.</td>
</tr>
<tr>
<td>User_ID</td>
<td>BMC User ID. When used with the FWADVCFG keyword, the configuration information is displayed for the user.</td>
</tr>
<tr>
<td>SMTP_Configuration_Index</td>
<td>Specifies the SMTP configuration in the firmware email alert tables.</td>
</tr>
<tr>
<td>SDP</td>
<td>Displays the current shutdown policy in the system.</td>
</tr>
<tr>
<td>SECUREBOOT</td>
<td>Displays the current EFI secure boot status.</td>
</tr>
<tr>
<td>FAN</td>
<td>Displays the fan speed offset</td>
</tr>
</tbody>
</table>

Examples

```
syscfg /d channel 1
syscfg /d lan 1 2
syscfg /d pef 2 1
syscfg /d BIOSSETTINGS “Set Fan Profile”
```
syscfg /d FWADVCFG 3 2 1
syscfg /d sdp
syscfg /d secureboot
syscfg /d fan

**Note:** The Syscfg utility in Intel® Server Board S1200V3RPS does not support the /d BIOS option.
4.3 BIOS Commands

This section lists the BIOS Commands.

4.3.1 BIOS Administrator Password (/bap)

Usage

```
syscfg /bap {old_password | ""} [new_password | ""]
```

Description

Sets or clears the BIOS Administrator password.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>old_password</td>
<td>The password should be a minimum of 8 characters and maximum 14 characters in length.</td>
</tr>
<tr>
<td>new_password</td>
<td>The password can have characters alphanumeric (a-z, A-Z, 0-9) and the following special characters:</td>
</tr>
<tr>
<td></td>
<td>! @ # $ % ^ * ( ) - _ + = ? '</td>
</tr>
<tr>
<td></td>
<td>Use two double quotes (&quot;&quot;&quot;) to represent a null password.</td>
</tr>
</tbody>
</table>

- To set or clear the BIOS Administrator password, enter the old password, if set.
- If the Administrator password is currently not set, enter a null string (for the new password) to clear the password. The Administrator password controls access to all BIOS Setup fields, including the ability to clear the User password.
- If only one password (Administrator or User) is set, then enter Setup for the password.
- Change any other BIOS option using Syscfg by providing the Administrator password.
  Combining the /bap and /bup commands sets both the BIOS Administrator and User passwords at the same time.
- Refer to the product guide for the Intel® Server Board for more information on BIOS Setup options.

Examples

```
syscfg /bap "" admin@123
syscfg /bap admin@123 superuser@123
```

Notes:

- The Set BIOS User Password (/bup) option (see section 4.3.2) can only be used if a valid system Administrator password is set.
- Clearing the BIOS Administrator password also clears the User password.
4.3.2 BIOS User Password (/bup)

Usage

```
sysecfg /bup {admin_password | ""} } {old_user_password | ""} 
[ new_user_password | "" ]
```

Description
Sets or clears the BIOS User password. See Table 9.

Table 9. BIOS user password (/bup) options

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>admin_password</td>
<td>• Enter the BIOS admin password if the password is set.</td>
</tr>
<tr>
<td></td>
<td>or</td>
</tr>
<tr>
<td></td>
<td>• Enter the Null string if the password is currently not set.</td>
</tr>
<tr>
<td>old_user_password,</td>
<td>The password should be a minimum of 8 characters and maximum 14 characters</td>
</tr>
<tr>
<td>new_user_password</td>
<td>in length. The password can have characters alphanumeric (a-z, A-Z, 0-9) and</td>
</tr>
<tr>
<td></td>
<td>the following special characters:</td>
</tr>
<tr>
<td></td>
<td>! @ # $ % ^ * ( ) - _ + = ? '</td>
</tr>
<tr>
<td></td>
<td>Use two double quotes (&quot;&quot;&quot;) to represent a null password.</td>
</tr>
</tbody>
</table>

- To set or clear the BIOS Administrator password, enter the old password (if it has been set).
- If the Administrator password is currently not set, enter a null string (for the new password) to clear the password.
- If only one password (Administrator or User) is set, then enter Setup for the password.
- Change the user password by providing the administrator password as explained in the note below. The User password controls access to allow the modification of the following BIOS Setup fields: time, date, language, and User password.
- Refer to the product guide for the Intel® Server Board for more information on BIOS Setup options.

Examples

```
system /bup superuser@123 "" user@123
system /bup superuser@123 user@123 newuser@123 ""
system /bup superuser@123 newuser@123
system /bup "" "" user?123 in this example the admin password is "" (not set)
```

Notes:
- The /bup option can only be used if system has a valid Administrator password set. Clearing the Administrator password also clears the User password.
- User password cannot be the same as administrator password.
System Boot Order (/bbosys)

Usage

syscfg /bbosys [device_number [device_number [...]]]

Description

Changes the boot order of system devices. See Table 10.

Table 10. System boot order (/bbosys) options

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>device_number</td>
<td>The current ordinal number of the system boot device. (1 is the first device, 2 is the second device, etc.) To change the order, specify an order for the device numbers (for example, 2 1 4 3 is specified then the second boot device is the first boot device after the command is executed.</td>
</tr>
</tbody>
</table>

Refer to the product guide for the Intel® Server Board for more information on BIOS Setup options.

Examples

syscfg /bbosys

1: PS-SONY CD-ROM CDU5221
2: 1st floppy drive
3: PM-WDC WD400BB-23FRA0
4: EFI Boot Manager

- How to set the BIOS boot order:
  syscfg /bbosys admin@123 2 1 3 4

- If the BIOS administrator password is not set, use:
  syscfg /bbosys "" 2 1 3 4
4.3.4  **System Boot Order in Detail (/bbo)**

**Description**
Displays complete information for all boot devices present in the system under different groups or classifications.

**Examples:**

```
syscfg /bbo
Number of boot devices = 7
##########################################################
Boot Device Priority
##########################################################
:: Local Hard Disk Boot Devices (HDD) ::
##########################################################
1:  KingstonDataTraveler 2.01.00
2:  Secondary Master Hard Disk
3:  JetFlashTranscend 8GB  8.07
:: CD/DVD Boot Devices (DVD) ::
##########################################################
1:  Primary Master CD-ROM
:: Network Boot Devices (NW) ::
##########################################################
1:  IBA GE Slot 0100 v1327
2:  IBA GE Slot 0101 v1327
:: EFI Boot Devices (EFI) ::
##########################################################
1:  Internal EFI Shell
```

**Examples**

- **How to set the detailed system boot order:**

  ```
syscfg /bbo “admin@123” EFI NW DVD HDD
syscfg /bbo “admin@123” NW 2 1
  ```

- **If the Administrator password is not set, use:**

  ```
syscfg /bbo “” EFI NW DVD HDD
syscfg /bbo “” NW 2 1
  ```

**Notes:**

Reordering boot devices using `/bbo` should be followed by a system reset as per the IPMI spec. Otherwise, an immediate display command using the `/bbo` switch may not display the correct boot device order.

The `/bbo` command cannot be cascaded.

- **For example, the following commands are valid:**

  ```
syscfg /bbo HDD 3 2 1
syscfg /bbo NW 2 1
  ```

- **The following command is not valid:**

  ```
syscfg /bbo HDD 3 2 1 NW 2 1
  ```
4.3.5 Configure BIOS Settings (/bc)

Usage

```
syscfg /bc [admin_password] BIOS_Setting_Name Value [BIOS_Setting_Name Value [...]]
```

Description

Sets the values of individual BIOS Settings. See Table 11.

**Table 11. Configure BIOS settings (/bc) options**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>admin_password</td>
<td>• Enter the BIOS admin password if the password is set.</td>
</tr>
<tr>
<td></td>
<td>• Enter the Null string if the password is currently not set.</td>
</tr>
<tr>
<td>BIOS_Setting_Name</td>
<td>The name of the BIOS settings on the BIOS Setup screen. Refer to the Technical Product Specification for the Intel® Server Board how to use the BIOS Setup for setting names.</td>
</tr>
<tr>
<td>Value</td>
<td>The value for the BIOS Setting.</td>
</tr>
</tbody>
</table>

Refer to the Technical Product Specification for the Intel® Server Board for more information on BIOS Setup options.

Examples

- Configure BIOS settings:

  ```
syscfg /bc “admin@123” “Quiet Boot” 0
syscfg /bc “admin@123” “Quiet Boot” 0 “POST Error Pause” 1
syscfg /bc “admin@123” “Set throttling mode” 2 “Altitude” 900 “Set fan profile” 2
  ```

- When the BIOS administrator is not set, use:

  ```
syscfg /bc “” “Quiet Boot” 0
syscfg /bc “” “Quiet Boot” 0 “POST Error Pause” 1
syscfg /bc “” “Set throttling mode” 2 “Altitude” 900 “Set fan profile” 2
  ```

- Use the `syscfg /d biossettings` command to show possible values for the BIOS Setting:

  ```
syscfg /d biossettings “Main” “Quiet Boot”
  ```

**Note:** The Syscfg utility does not support configuring **BMC Configuration** under the BIOS Server Management settings using the switches `/bc` or `/d biossettings`. 
4.3.6 BIOS Load Default Factory Settings (/bldfs)

Usage

```
syscfg /bldfs [admin_password ]
```

Description

 Loads the default factory BIOS settings. See Table 12.

**Table 12. BIOS load default factory settings (/bldfs) options**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>admin_password</td>
<td>• Enter the BIOS admin password if the password is set.</td>
</tr>
<tr>
<td></td>
<td>or</td>
</tr>
<tr>
<td></td>
<td>• Enter the Null string if the password is currently not set.</td>
</tr>
</tbody>
</table>

- The `/bldfs` option requires a reboot to reset the default settings.
- Refer to the product guide for the Intel® Server Board for more information on BIOS Setup default settings.

Examples

```
syscfg /bldfs admin@123
```

- When the BIOS administrator is not set, use:

```
syscfg /bldfs ""
```
4.3.7 BIOS Variable (/bvar)

Usage

syscfg /bvar [Option][admin_password]

Description

Creates, modifies, or deletes a new EFI variable. This switch is supported in Linux*, Windows*, and UEFI platforms. See Table 13.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>admin_password</td>
<td>Enter the BIOS admin password, if set, or the null string if the password is not set.</td>
</tr>
</tbody>
</table>

/bvar create

This command creates a new EFI variable. The following parameters create this command:

- **Name**: Name of the EFI variable that to be created
- **GUID**: GUID of the EFI variables
- **Data**: Data for the variable
- **Attributes**: Attribute is optional while creating; if not provided it takes an attribute value of 7.

The command is successful when the command is executed successfully and the variable is created. However, if a variable with the same name and GUID already exists, the utility provides an appropriate message.

/bvar overwrite

This command overwrites the data value of an existing EFI variable. The following parameters are passed to this command:

- **Name**: Name of the existing variable
- **GUID**: Optional. However, if the name is not unique, the utility provides a message for providing GUID as an additional parameter.
- **Data**: Data to be overwritten

/bvar delete

This command deletes an existing EFI variable. The following parameters are passed to this command:

- **Name**: Name of the variable
- **GUID**: Optional and needed if name is not unique

Notes:

- Take caution before deleting any EFI variable or rewriting the data of an existing variable. Otherwise, this may lead to the system unstable.
- The supported attributes are 3 and 7, while the attributes 0, 1, 2, 4, 5, and 6 are not supported with this switch.

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Non-Volatile(NV) + Boot Service Access(BS)</td>
</tr>
<tr>
<td>7</td>
<td>Non-Volatile(NV) + Boot Service Access(BS) + Real Time(RT)</td>
</tr>
</tbody>
</table>

Examples

syscfg /bvar “admin@123” create testvar 33838512-0BC7-4ba4-98C0-0219C2B61BF9 testvardata
syscfg /bvar "admin@123" create testvar 33838512-0BC7-4ba4-98C0-0219C2B61BF9 testvardata 3
syscfg /bvar "admin@123" overwrite testvar testvarnewdata
syscfg /bvar "admin@123" delete testvar

- When the BIOS administrator is not set:
  
syscfg /bvar "" create testvar 33838512-0BC7-4ba4-98C0-0219C2B61BF9 testvardata
syscfg /bvar "" create testvar 33838512-0BC7-4ba4-98C0-0219C2B61BF9 testvardata 3
syscfg /bvar "" overwrite testvar testvarnewdata
syscfg /bvar "" delete testvar

4.3.8 BIOS EFI Secure Boot Settings (/secureboot)

Usage

syscfg /secureboot [admin_password] [enable/disable]

Description
Sets the EFI secure boot status.

Examples

- To set EFI Secure Boot status to “disable”:

  
  syscfg /secureboot "admin@123" disable

- To set EFI Secure Boot status to “enable”:

  
  syscfg /secureboot "admin@123" enable

4.3.9 BIOS EFI Secure Boot Key Settings (/securebootkey)

Usage

syscfg /securebootkey [admin_password] overwrite [key_name] [key_data_file]

Description
Overwrites or appends the EFI Secure Boot key settings. The following parameters are passed to this command:

- Key_name: name of the key user to be updated, such as “PK”, “KEK”, “db” and “dbx”.
- Key_data_file: file path of key data file.

Examples

- Use this command if the BIOS administrator password is not set.

  
  syscfg /securebootkey "" overwrite PK key_data_file
4.4 Firmware Commands

Firmware commands are described in this section.

4.4.1 Channels (/c)

Usage

```
syscfg /c [channel_ID { 1 {straight | MD5} | 2 {straight | MD5 } | 3 {straight | MD5 } | 4 {straight | MD5 } | 5 {enable | disable} | 6 {enable | disable} | 7 {disabled | preboot | always | shared} | 8 {user | operator | admin} | 9 {enable | disable} }]
```

Description

Configures the BMC channels. Use this command to change a single parameter (select number 1-9 as shown in Table 15).

**Table 15. Channels (/c) options**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channel_ID</td>
<td>BMC channel ID number.</td>
</tr>
<tr>
<td>1</td>
<td>Selects the authentication types for callback privilege level.</td>
</tr>
<tr>
<td>2</td>
<td>Selects the authentication types for user privilege level.</td>
</tr>
<tr>
<td>3</td>
<td>Selects the authentication types for operator privilege level.</td>
</tr>
<tr>
<td>4</td>
<td>Selects the authentication types for Admin privilege level.</td>
</tr>
<tr>
<td>5</td>
<td>Selects the Per message authentication.</td>
</tr>
<tr>
<td>6</td>
<td>Selects User Level Authentication enable.</td>
</tr>
<tr>
<td>7</td>
<td>Selects the Access Mode. Values of preboot and shared are only valid for serial channels.</td>
</tr>
<tr>
<td>8</td>
<td>Selects the Privilege level limit for the channel.</td>
</tr>
<tr>
<td>9</td>
<td>Selects Enable PEF on the specified channel.</td>
</tr>
<tr>
<td>straight</td>
<td>MD5</td>
</tr>
<tr>
<td>disabled</td>
<td>preboot</td>
</tr>
<tr>
<td>user</td>
<td>operator</td>
</tr>
<tr>
<td>enable</td>
<td>disable</td>
</tr>
</tbody>
</table>

Examples

```
syscfg /c
syscfg /c 1 1 straight+MD5
syscfg /c 1 7 always /c 1 8 admin
```

**Note:** The Syscfg utility in the Intel® Server Board S1200V3RPS does not support serial channel configuration.
4.4.2 Clear SEL (/cesl)

Usage

```
syscfg {/cesl | /clearSEL}
```

Description
Clears the System Event Log (SEL).

Examples
```
syscfg /cesl
syscfg /clearSEL
```

4.4.3 Date and Time (/dt)

Usage

```
syscfg {/dt | /timeofday} [admin_password ] hh:mm:ss mm/dd/yyyy
```

Description
Sets the time of day stored in the Real Time Clock (RTC) using the BIOS. See Table 16.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>admin_password</td>
<td>Enter the BIOS admin password, if set, or the null string if the password is currently not set.</td>
</tr>
<tr>
<td>hh:mm:ss</td>
<td>Hours (24 hour clock), minutes, and seconds.</td>
</tr>
<tr>
<td>mm/dd/yyyy</td>
<td>Month, day, and year.</td>
</tr>
</tbody>
</table>

Example
```
syscfg /dt "admin@123" 18:45:00 08/15/2011
```

• When BIOS administrator is not set:

```
syscfg /dt "" 18:45:00 08/15/2011
```
4.4.4 Email Alert Configure (/eac)

Usage

syscfg{/eac | /emailalertconf} SMTP_Configuration_Index {0|1|2|3|4|5|6|7|8|9} ASCII_String Channel number

Description

Configures email alert settings. See Table 17.

Table 17. Email alert configure (/eac) options

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMTP_Configuration_Index</td>
<td>1-n. An index into the SMTP configuration table in firmware. The maximum number n depends on the firmware on the Intel® Server Board (refer to the server documentation for details).</td>
</tr>
</tbody>
</table>
| {0|1|2|3|4|5|6|7|8|9}               | 0 = SMTP Enable/Disable  
|                           | 1 = From Address  
|                           | 2 = To Address  
|                           | 3 = Subject  
|                           | 4 = SMTP User Name  
|                           | 5 = User Password (Only Set, no Get)  
|                           | 6 = Server Address  
|                           | 7 = Message Content  
|                           | 8 = Port Number  
|                           | 9 = Authentication and Encryption Method                                   |
| ASCII_String              | This is the value for the selected parameter. Use double quotes (") to enclose strings that include space characters. |
| Channel number            | Valid LAN Channel Number.                                                   |

Example

syscfg /eac 1 1 server2@companyyx.com 1

4.4.5 Email Alert Enable (/eae)

Usage

syscfg{/eae | /emailalertenable} Sender_Name Channel _Number

Description

Sets the sender machine name for SMTP email alerts from the current server. See Table 18.

Table 18. Email alert enable (/eae) options

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sender_Name</td>
<td>Sender machine name. This string identifies the managed server to the SMTP server.</td>
</tr>
<tr>
<td>Channel_Number</td>
<td>Valid LAN channel number.</td>
</tr>
</tbody>
</table>

Example

syscfg /eae dupont01 3
4.4.6 Help (/h)

Usage

```
syscfg {/h | /?} {lan | user | pef | sol | power | channel | system | fwadvcfg | bios}
```

Description

Displays help on the system configuration utility.

Examples

- Displays help in the specified area. See Table 19.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>lan</td>
<td>user</td>
</tr>
</tbody>
</table>

- Displays help for the LAN and POWER configurations:

  ```
syscfg /h lan
syscfg /? power
  ```

Notes:

- The Sfscfg utility in Intel® Server Board S1200V3RPS does not support the sol option.
- In Linux, to use the /? option, enclose it in double quotes.
### 4.4.7  LAN Alert Configuration (/lac)

#### Usage

```bash
syscfg {/lac | /lanalertconf} Channel_Id Alert_Destination_Index
Alert_Destination_IP_Address {Alert_ID_MAC_Address | “resolve”} {enable | disable} {enable | disable} {1..7} {1..255} {SNMP | SMTP}
```

#### Description

Configures the LAN Alert destinations for a channel. See Table 20.

**Table 20. LAN alert configuration (/lac) options**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channel_ID</td>
<td>IPMI Channel number.</td>
</tr>
<tr>
<td>Alert_Destination_Index</td>
<td>Index into the Alert Destination table.</td>
</tr>
<tr>
<td>Alert_Destination_IP_Address</td>
<td>IP address of the alert destination in the dot separated decimal value format: n.n.n.n, where n is a number between 0 and 255.</td>
</tr>
<tr>
<td>Alert_ID_MAC_Address</td>
<td>MAC address of the alert destination in the hexadecimal format separated by hyphens: hh-hh-hh-hh-hh-hh, where h is a hexadecimal value from 0 to F, or “resolve” to automatically resolve the MAC Address.</td>
</tr>
<tr>
<td>enable</td>
<td>disable</td>
</tr>
<tr>
<td>enable</td>
<td>disable</td>
</tr>
<tr>
<td>1..7</td>
<td>Retry count.</td>
</tr>
<tr>
<td>1..255</td>
<td>Retry interval in seconds.</td>
</tr>
<tr>
<td>SNMP</td>
<td>SMTP</td>
</tr>
</tbody>
</table>

See the *IPMI 2.0 Specification* for more information.

#### Example

```bash
syscfg /lac 1 1 10.78.211.40 03-FE-02-41-F3 disable disable 0 1 SNMP
```
4.4.8 LAN Alert Enable (/lae)

Usage

syscfg {/lae | /lanalertenable} Channel_ID Gateway_IP_Address
{Gateway_MAC_Address | "resolve"} SNMP_Community_String
[Backup_Gateway_IP_Address {Backup_Gateway_MAC_Address | "resolve"}]

Description

Enables LAN alerting on the specified channel. See Table 21.

Table 21. LAN alert enable (/lae) options

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channel_ID</td>
<td>IPMI Channel ID.</td>
</tr>
<tr>
<td>Gateway_IP_Address</td>
<td>Gateway IP Address for the specified LAN channel.</td>
</tr>
<tr>
<td>Gateway_MAC_Address</td>
<td>Gateway MAC Address for the specified LAN channel or “resolve” to automatically resolve the MAC Address.</td>
</tr>
<tr>
<td>SNMP_Community_String</td>
<td>Enter the SNMP community string, or the null string (&quot;&quot;).</td>
</tr>
<tr>
<td>Backup_Gateway_IP_Address</td>
<td>Gateway IP Address for the specified LAN channel.</td>
</tr>
<tr>
<td>Backup_Gateway_MAC_Address</td>
<td>Gateway MAC Address for the specified LAN channel or “resolve”.</td>
</tr>
</tbody>
</table>

Notes:

- The Gateway_MAC_Address and Backup_Gateway_MAC_Address may optionally be set to resolve. If set to resolve, Syscfg attempts to resolve the MAC address before writing any values to firmware. If the MAC Address resolution fails, Syscfg quits, without writing, and prints an error message.
- The resolve option is not supported across different subnets. Use of the resolve command is not encouraged.

See the IPMI 2.0 Specification for more information.

Examples

syscfg /lae 2 10.110.40.3 03-GE-02-41-F3 public
syscfg /lae 2 10.110.40.3 03-fe-02-41-f3 "" 10.110.40.4 0f-7e-42-4a-33
4.4.9 LAN Configuration (/lc)

Usage

syscfg {/lc | /lanconf} Channel_ID {2a {straight | MD5} | 2b {straight | MD5} | 2c {straight | MD5} | 2d {straight | MD5} | 3 IP_Address | 4 {static | DHCP} | 6 IP_Address | 12 IP_Address | 13 MAC_Address | 14 IP_Address | 15 MAC_Address | 16 SNMP_Community_String | C5 IP_Address | C7 IP_Address | 102 {Enable | Disable} | 103 {STATIC | DHCPV6 | AUTO} | 104 IPv6_Address | 105 0…128 | 106 IP_Address }

Description

Configures the LAN settings on a specific channel. This option is similar to /lac, but it is used to only configure one parameter at a time. Select the parameter by choosing one of the parameter numbers listed in Table 22 (2a, 2b, ..., 16) followed by a value.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channel_ID</td>
<td>IPMI Channel ID (LAN channel).</td>
</tr>
<tr>
<td>2a</td>
<td>Selects authentication type for callback privilege level. Multiple privilege levels may be specified by using the plus sign (see examples below).</td>
</tr>
<tr>
<td>2b</td>
<td>Selects authentication type for user privilege level. Multiple privilege levels may be specified by using the plus sign (see examples below).</td>
</tr>
<tr>
<td>2c</td>
<td>Selects authentication type for operator privilege level. Multiple privilege levels may be specified by using the plus sign (see examples below).</td>
</tr>
<tr>
<td>2d</td>
<td>Selects authentication type for administrator privilege level. Multiple privilege levels may be specified by using the plus sign (see examples below).</td>
</tr>
<tr>
<td>3</td>
<td>Selects IP Address for the specified LAN channel. (This is not a valid option when the source is set to DHCP.)</td>
</tr>
<tr>
<td>4</td>
<td>Selects source for IP Address</td>
</tr>
<tr>
<td>6</td>
<td>Selects subnet mask. (This is not a valid option when the source is set to DHCP.)</td>
</tr>
<tr>
<td>12</td>
<td>Selects Gateway IP Address. (This is not a valid option when the source is set to DHCP.)</td>
</tr>
<tr>
<td>13</td>
<td>Selects Gateway MAC Address.</td>
</tr>
<tr>
<td>14</td>
<td>Selects Backup Gateway IP Address.</td>
</tr>
<tr>
<td>15</td>
<td>Selects Backup Gateway MAC Address.</td>
</tr>
<tr>
<td>16</td>
<td>Selects Community String.</td>
</tr>
<tr>
<td>C5</td>
<td>Selects IPv4 or IPv6 IP address for DNS primary server. Format can be xxx.xxx.xxx.xxx (IPv4) or xxxxxxx:xxxxxx:xxxxxx:xxxxxx:xxxxxx:xxxxxx:xxxxxx:xxxxxx (IPv6).</td>
</tr>
<tr>
<td>C6</td>
<td>Selects IPv4 or IPv6 IP address for DNS secondary server. Format can be xxx.xxx.xxx.xxx (IPv4) or xxxxxxx:xxxxxx:xxxxxx:xxxxxx:xxxxxx:xxxxxx:xxxxxx:xxxxxx (IPv6).</td>
</tr>
<tr>
<td>C7</td>
<td>Up to a 64-byte ASCII string (printable characters in the range 0x21 to 0x7e) DHCP Host Name String.</td>
</tr>
<tr>
<td>102</td>
<td>IPv6 Enable. Use Enable or Disable to Enable/Disable “IPv6 Enable” parameter.</td>
</tr>
<tr>
<td>103</td>
<td>Selects source for IPv6 IP Address. Values to be used are STATIC, DHCPV6, and AUTO.</td>
</tr>
<tr>
<td>104</td>
<td>Selects IPv6 IP Address for the specified LAN channel. (This is not a valid option when the IPv6 IP source is set to DHCPV6 or AUTO.) Format is xxxx.xxxx.xxxx.xxxx.xxxx.xxxx.xxxx.xxxx.xxxx.xxxx.</td>
</tr>
<tr>
<td>105</td>
<td>Selects the IPv6 Prefix Length. (This is not a valid option when the IPv6 IP source is set to DHCPV6 or AUTO.) Prefix length should be from 0 to 128 as per IPv6 spec.</td>
</tr>
<tr>
<td>106</td>
<td>Selects the IPv6 Default Gateway IP. (This is not a valid option when the IPv6 IP source is set to DHCPV6 or AUTO.) Format is xxxx.xxxx.xxxx.xxxx.xxxx.xxxx.xxxx.xxxx.xxxx.xxxx.</td>
</tr>
</tbody>
</table>
Notes:

- The Host IP, Subnet Mask, and Default Gateway IP cannot be set when DHCP is enabled for the LAN channel.
- The Host MAC address cannot be set for any LAN channel in ESB2 BMC.
- The DHCP Host Name is common for all LAN Channels.
- The set DHCP Host name is used on the next DHCP lease renewal or at the current lease expiration.

Examples

```
syscfg /lc 1 2b straight+md5
syscfg /lc 1 C7 TestDHCPHostName
syscfg /lc 1 102 ENABLE
syscfg /lc 1 103 AUTO
```

4.4.10 LAN Enable (/le)

Usage

```
syscfg {/le | /lanenable} Channel_ID {dhcp | {static IP_Address Subnet_Mask}}
```

Description

Configures the LAN channel used by the BMC on the specified channel.

<table>
<thead>
<tr>
<th>Table 23. LAN enable (/le) options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option ID</td>
</tr>
<tr>
<td>Channel_ID</td>
</tr>
<tr>
<td>static</td>
</tr>
<tr>
<td>dhcp</td>
</tr>
<tr>
<td>IP_Address</td>
</tr>
</tbody>
</table>

Examples

```
syscfg /le 1 dhcp
syscfg /le 1 static 10.30.240.21 255.255.255.0
```

4.4.11 LAN Failover Mode (/lfo)

Usage

```
syscfg {/lfo | /lanfailover} {enable | disable}
```

Description

BMC firmware provides a LAN failover capability so that the failure of the system hardware associated with one LAN link results in traffic being rerouted to an alternate link.

<table>
<thead>
<tr>
<th>LAN failover mode (/lfo) options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option</td>
</tr>
<tr>
<td>ENABLE</td>
</tr>
<tr>
<td>DISABLE</td>
</tr>
</tbody>
</table>

See the IPMI 2.0 Specification for more information.
4.4.12 PEF Configure (/pefc)

Usage

```
sycfg {/pefc | /pefconfig} {enable | disable} {none | alert | pdown | reset | pcycle | diagint}
```

Description

Globally enables or disables the Platform Event Filters used by the BMC. See Table 24.

**Table 24. PEF configure (/pefc) options**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>enable</td>
<td>disable</td>
</tr>
<tr>
<td>none</td>
<td>alert</td>
</tr>
<tr>
<td></td>
<td>• pdown means power down.</td>
</tr>
<tr>
<td></td>
<td>• pcycle means power cycle.</td>
</tr>
<tr>
<td></td>
<td>• diagint means diagnostic interrupt.</td>
</tr>
</tbody>
</table>

See the *IPMI 2.0 Specification*, Chapter 17, for more information on Platform Event Filtering.

**Example**

```
sycfg /pefc enable alert+pdown+reset+pcycle
```

**Note:** The Syscfg utility in the Intel® Server Board S1200V3RPS does not support the `diagint` option.

4.4.13 PEF Filter (/peff)

Usage

```
sycfg {{/peff | /peffilter} Filter_table_index {enable | disable} {none | alert | pdown | reset | pcycle | diagint} {1..15}}
```

Description

Configures the Platform Event Filters used by the BMC on the specified channel. See Table 25.

**Table 25. PEF filter (/peff) options**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filter_table_index</td>
<td>Index for particular filters in the PEF filter table.</td>
</tr>
<tr>
<td>enable</td>
<td>disable</td>
</tr>
<tr>
<td>none</td>
<td>alert</td>
</tr>
<tr>
<td></td>
<td>• pdown means power down.</td>
</tr>
<tr>
<td></td>
<td>• pcycle means power cycle.</td>
</tr>
<tr>
<td>1..15</td>
<td>Policy number. This number maps to the Alert Policy Table. (Also see the /pefp option.)</td>
</tr>
</tbody>
</table>

See the *IPMI 2.0 Specification*, Chapter 17, for more information on Platform Event Filtering.

**Example**

```
sycfg /peff 3 enable pdown 1 /peff 4 enable pdown 1
```
4.4.14 PEF Policy (/pefp)

Usage

```
syscfg /pefp /pefpolicy Policy_table_index {enable | disable} {1..15} {ALWAYS | NEXT_E | STOP | NEXT_C | NEXT_T} Channel_ID Destination_table_index
```

Description

Configures the Platform Event Filter policy table used by the BMC on the specified channel. See Table 26.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy_table_index</td>
<td>Policy Table Index</td>
</tr>
<tr>
<td>enable</td>
<td>disable</td>
</tr>
<tr>
<td>1..15</td>
<td>Policy number</td>
</tr>
<tr>
<td>ALWAYS</td>
<td>NEXT_E</td>
</tr>
<tr>
<td></td>
<td>• ALWAYS = Always send an alert to the destination indicated in the policy</td>
</tr>
<tr>
<td></td>
<td>table entry specified by argument 1.</td>
</tr>
<tr>
<td></td>
<td>• NEXT_E = If an alert was successfully sent to the previous destination</td>
</tr>
<tr>
<td></td>
<td>attempted, do not send an alert to the destination indicated in the</td>
</tr>
<tr>
<td></td>
<td>policy table entry specified in argument 1, but go to the next policy</td>
</tr>
<tr>
<td></td>
<td>table entry with the same policy number instead.</td>
</tr>
<tr>
<td></td>
<td>• STOP = If an alert was successfully sent to the previous destination</td>
</tr>
<tr>
<td></td>
<td>attempted, do not send an alert to the destination indicated in the</td>
</tr>
<tr>
<td></td>
<td>policy table entry specified in argument 1, and do not process any more</td>
</tr>
<tr>
<td></td>
<td>policy table entries.</td>
</tr>
<tr>
<td></td>
<td>• NEXT_C = If an alert was successfully sent to the previous destination</td>
</tr>
<tr>
<td></td>
<td>attempted, do not send an alert to the destination indicated in the</td>
</tr>
<tr>
<td></td>
<td>policy table entry specified in argument 1, but go to the next policy</td>
</tr>
<tr>
<td></td>
<td>table entry with the same policy number but on a different channel.</td>
</tr>
<tr>
<td></td>
<td>• NEXT_T = If an alert was successfully sent to the previous destination</td>
</tr>
<tr>
<td></td>
<td>attempted, do not send an alert to the destination indicated in the</td>
</tr>
<tr>
<td></td>
<td>policy table entry specified in argument 1, but go to the next policy</td>
</tr>
<tr>
<td></td>
<td>table entry with the same policy number but with a different</td>
</tr>
<tr>
<td></td>
<td>destination type.</td>
</tr>
<tr>
<td>Channel_ID</td>
<td>IPMI Channel ID for a BMC channel</td>
</tr>
<tr>
<td>Destination_table_index</td>
<td>Destination Table Index</td>
</tr>
</tbody>
</table>

See the *IPMI 2.0 Specification*, Chapter 17, for more information on Platform Event Filtering.

Example

```
syscfg /pefp 3 enable 1 always 2 3
```
4.4.15  Power Restore Policy (/prp)

Usage

    syscfg /prp {off | on | restore}

Description

Sets the power restore policy. See Table 27.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>off</td>
<td>on</td>
</tr>
</tbody>
</table>

See the *IPMI 2.0 Specification*, Section 28.8, for more information on the Set Power Restore Policy IPMI Command.

Example

    syscfg /prp off
4.4.16  Configure Power Supply Cold Redundancy Setting (/cr)

Usage

    syscfg {/cr | /coldredundancy} {<Argument 1> <Argument 2>}

Description

Configures Cold Redundancy settings in the server management firmware.
Arguments for this command are described in Table 28.

Table 28. Cold redundancy configuration command-line arguments

<table>
<thead>
<tr>
<th>Argument #</th>
<th>Possible Values</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Enable</td>
<td>Disable</td>
</tr>
<tr>
<td>1</td>
<td>Rotation Enable</td>
<td>Disable</td>
</tr>
<tr>
<td>1</td>
<td>Timeout</td>
<td>Timeout value in number of days</td>
</tr>
<tr>
<td>1</td>
<td>Rank</td>
<td>Rank Value</td>
</tr>
</tbody>
</table>

Examples

1. Enables the Cold Redundancy feature.

   syscfg /cr enable

2. Enables the Cold Redundancy Rotation feature

   syscfg /cr rotation enable

3. Sets the rotation timeout to 10 days

   syscfg /cr timeout 10

4. Sets the rank order to 2, 1.

   syscfg /cr rank "2 1"

4.4.17  Reset BMC (/rbmc)

Usage

    syscfg {/rbmc | resetBMC}

Description

Resets the Baseboard Management Controller.

Examples

    syscfg /rbmc

Note: Do not issue any Syscfg commands until the BMC initializes (approximately 50 seconds).
4.4.18 Restore Firmware Settings (/rfs)

Usage

syscfg {/rfs | restorefirmwaresettings}

Description

Restores the factory default Baseboard Management Controller settings.

Examples

syscfg /rfs

Note: This command should be followed only by Reset BMC or AC Power Cycle. However, do not issue either of the commands until the BMC initializes (approximately 50 s). Unpredictable operations may occur if the BMC is not reset after this command.

4.4.19 Reset Node Manager (/rmn)

Usage

syscfg {/rmn | resetnodemanager}

Description

Resets the Intel® Node Manager (Intel® NM).

Intel® NM provides a mechanism for the customer to configure multiple power policies on a platform. These policies can have a defined action to “shut down” the platform. If the customer configures a power policy that performs a shutdown and the power threshold is set too low, the platform does not boot to the operating system if it is ACPI aware. A utility that runs in the EFI environment (which is not ACPI aware) allows for an in-band recovery mechanism.

Examples

syscfg /rmn or syscfg /resetnodemanager
4.4.20 Serial Over LAN (/sole)

Usage

```
syscfg {/sole | /soleenable} Channel_ID {enable | disable} {user | operator | admin} {9600 | 19200 | 38400 | 115200} {0..7} {0..2550}
```

Description

Enables Serial Over LAN (SOL) on the specified LAN channel. See Table 29.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channel_ID</td>
<td>IPMI Channel ID</td>
</tr>
<tr>
<td>enable</td>
<td>disable</td>
</tr>
<tr>
<td>user</td>
<td>operator</td>
</tr>
<tr>
<td>9600</td>
<td>19200</td>
</tr>
<tr>
<td>0..7</td>
<td>Retry count</td>
</tr>
<tr>
<td>0..2550</td>
<td>Retry interval in milliseconds, rounded to the nearest 10 ms</td>
</tr>
</tbody>
</table>

See the IPMI 2.0 Specification, Chapter 26, for more information on IPMI SOL commands.

Serial Baud Rate is not supported.

Examples

```
syscfg /sole 1 Enable Operator 6 200
```

4.4.21 Save BMC Debug Log

Usage

```
syscfg {/sbmcdl | /savebmcdebuglog} [Public] [filename]
```

Description

Saves the BMC debug log to a .zip file for system diagnostics purposes. See Table 30.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public</td>
<td>Regular System Diagnostics</td>
</tr>
<tr>
<td>Filename</td>
<td>Name of the file to save the BMC diagnostics data. The extension should be .zip or .ZIP</td>
</tr>
</tbody>
</table>

4.4.22 Save BMC SOL Log

Usage

```
syscfg {/bmcsol} [filename]
```

Description

Saves the BMC SOL log to a .zip file (system serial output). See Table 31.

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Filename</td>
<td>Name of the file in which the BMC SOL data is saved. File extension should be .zip or .ZIP</td>
</tr>
</tbody>
</table>
4.4.23 Users (/u)

Usage

```
syconfig {/u | /user} User_ID User_name Password
```

Description

Sets the user name and password for the specified BMC user. See Table 32.

**Table 32. Users (/u) options**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>User_ID</strong></td>
<td>User ID. Use a decimal integer in the range [1..n]; the maximum value for n is 5. That is, only five users are supported irrespective of the platforms. User ID 1 is usually the anonymous user.</td>
</tr>
<tr>
<td><strong>User_name</strong></td>
<td>BMC User name consisting of up to 16 ASCII characters in the range 0x21 to 0x7e, except [&quot; and &quot;] . Use &quot;&quot; to leave user name as anonymous.</td>
</tr>
<tr>
<td><strong>Password</strong></td>
<td>User BMC Password. ASCII string of up to 20 characters.</td>
</tr>
</tbody>
</table>

See the **IPMI 2.0 Specification** for more information on user passwords.

**Notes:**

- The user names for User 1 (NULL) and User 2 (Root) cannot be changed.
- Duplicate user names are not supported.

**Examples**

```
syconfig /u 3 BobT gofps
syconfig /u 2 "" ""
```

4.4.24 User Enable (/ue)

Usage

```
syconfig {/ue | /userenable} User_ID {enable | disable} Channel_ID
```

Description

Enables or disables the BMC user on the specified BMC channel. See Table 33.

**Table 33. User enable (/ue) options**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>User_ID</strong></td>
<td>User ID. Use a decimal integer in the range [1..n], where n is the number of users supported by the platform BMC. User ID 1 is usually the anonymous user.</td>
</tr>
<tr>
<td>**enable</td>
<td>disable**</td>
</tr>
<tr>
<td><strong>Channel_ID</strong></td>
<td>IPMI Channel ID</td>
</tr>
</tbody>
</table>

See the **IPMI 2.0 Specification** for more information on user configuration settings.

**Example**

```
syconfig /ue 3 enable 1
```
4.4.25 User Privilege (/up)

Usage

```
syscfg /up | /userprivilege User_ID Channel_ID {callback | user | operator | admin | none} [SOL | Disable]
```

Description

Enables or disables the BMC user on the specified BMC channel. See Table 34.

<table>
<thead>
<tr>
<th>Options</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>User_ID</td>
<td>BMC user ID.</td>
</tr>
<tr>
<td>Channel_ID</td>
<td>BMC channel number.</td>
</tr>
<tr>
<td>callback</td>
<td>user</td>
</tr>
<tr>
<td>SOL</td>
<td>Disable</td>
</tr>
</tbody>
</table>

See the IPMI 2.0 Specification for more information on user privilege levels.

Notes:

- User 2 (Root) privileges cannot be changed.
- Privilege level none is not supported.
- Maximum five users are supported by the utility irrespective of number of users supported in the firmware.

Examples

```
syscfg /up 1 1 admin
syscfg /up 1 1 admin sol
```

4.4.26 Shutdown Policy Interface (/sdp)

Usage

```
syscfg /sdp {enable | disable}
```

Description

Use this command to configure shutdown policy in the server management firmware.

Examples

Enables shutdown policy so the server shuts down on a power supply Over Current (OC) event or a power supply Over Temperature (OT) event.

```
syscfg /sdp enable
```
4.4.27 Fan Speed Offset (\texttt{/fan})

Usage

\texttt{syscfg /fan \texttt{Offset\_Value}}

Description

Use this command to change fan speed offset.

Examples

Change fan speed offset to 20.

\texttt{syscfg /fan 20}
Table 35 lists the IPMI Channel assignments.

**Table 35. IPMI channel assignments**

<table>
<thead>
<tr>
<th>IPMI Channel ID</th>
<th>Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channel 1</td>
<td>Baseboard LAN Channel</td>
</tr>
<tr>
<td>Channel 2</td>
<td>Baseboard LAN Channel</td>
</tr>
<tr>
<td>Channel 3</td>
<td>Optional Intel® RMM4 NIC</td>
</tr>
</tbody>
</table>
This section describes firmware settings that are saved and restored with Syscfg in binary and INI formats.

### A.1. Binary Format

Table 36 lists the firmware settings that are saved and restored with Syscfg in binary formats.

<table>
<thead>
<tr>
<th>Component</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Configuration Setting</td>
<td>Power Restore Policy</td>
</tr>
<tr>
<td></td>
<td>Alert Enable</td>
</tr>
<tr>
<td></td>
<td>Per Message Authentication</td>
</tr>
<tr>
<td></td>
<td>User Level Authentication Enable</td>
</tr>
<tr>
<td></td>
<td>Access Mode</td>
</tr>
<tr>
<td></td>
<td>Privilege Level Limit</td>
</tr>
<tr>
<td></td>
<td>Community String</td>
</tr>
<tr>
<td></td>
<td>Gratuitous ARP enable</td>
</tr>
<tr>
<td></td>
<td>ARP interval</td>
</tr>
<tr>
<td></td>
<td>Authentication Types</td>
</tr>
<tr>
<td></td>
<td>DHCP enabled</td>
</tr>
<tr>
<td></td>
<td>DHCP Host Name</td>
</tr>
<tr>
<td></td>
<td>Subnet Mask</td>
</tr>
<tr>
<td>LAN Channel Settings</td>
<td>Gateway IP</td>
</tr>
<tr>
<td></td>
<td>Gateway MAC</td>
</tr>
<tr>
<td></td>
<td>Backup Gateway IP</td>
</tr>
<tr>
<td></td>
<td>Backup Gateway MAC</td>
</tr>
<tr>
<td></td>
<td>BMC ARP Response Enable</td>
</tr>
<tr>
<td>Note:</td>
<td>Save and Restore of Host IP, Subnet Mask, Default Gateway IP, and Backup Gateway IP are not supported.</td>
</tr>
<tr>
<td>LAN Alert Settings</td>
<td>Alert Acknowledge Enabled</td>
</tr>
<tr>
<td></td>
<td>Alert IP</td>
</tr>
<tr>
<td></td>
<td>Alert MAC</td>
</tr>
<tr>
<td></td>
<td>Gateway Selector</td>
</tr>
<tr>
<td></td>
<td>Retry Count</td>
</tr>
<tr>
<td></td>
<td>Retry Interval</td>
</tr>
<tr>
<td>User Settings</td>
<td>User Name</td>
</tr>
<tr>
<td></td>
<td>User Password</td>
</tr>
<tr>
<td></td>
<td>Privilege Level Limit</td>
</tr>
<tr>
<td></td>
<td>Callback Status</td>
</tr>
<tr>
<td></td>
<td>Link Authentication Enable</td>
</tr>
<tr>
<td></td>
<td>IPMI messaging enabled</td>
</tr>
<tr>
<td></td>
<td>User Payload</td>
</tr>
<tr>
<td>Platform Event Filter Settings†</td>
<td>PEF Enable</td>
</tr>
<tr>
<td></td>
<td>Event Message for PEF Action</td>
</tr>
<tr>
<td></td>
<td>Startup Delay</td>
</tr>
<tr>
<td></td>
<td>Alert Startup Delay</td>
</tr>
<tr>
<td></td>
<td>Global Control Actions</td>
</tr>
<tr>
<td>Component</td>
<td>Setting</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>--------------------------------------------</td>
</tr>
<tr>
<td>Serial Over LAN Settings</td>
<td>SOL Enable</td>
</tr>
<tr>
<td></td>
<td>SOL Privilege Level</td>
</tr>
<tr>
<td></td>
<td>SOL Retry Count</td>
</tr>
<tr>
<td></td>
<td>SOL Retry Interval</td>
</tr>
<tr>
<td></td>
<td>SOL Baud Rate*</td>
</tr>
<tr>
<td></td>
<td>SOL Authentication Enable</td>
</tr>
<tr>
<td>SMTP Alert Settings</td>
<td>Enable/Disable SMTP</td>
</tr>
<tr>
<td></td>
<td>Sender Machine Name</td>
</tr>
<tr>
<td></td>
<td>From Address</td>
</tr>
<tr>
<td></td>
<td>To Address</td>
</tr>
<tr>
<td></td>
<td>Subject Line</td>
</tr>
<tr>
<td></td>
<td>User Name</td>
</tr>
<tr>
<td></td>
<td>User Password</td>
</tr>
<tr>
<td></td>
<td>Server Address</td>
</tr>
<tr>
<td></td>
<td>Message Content</td>
</tr>
<tr>
<td></td>
<td>LAN Alert Destination/SNMP Alert Index Mapping</td>
</tr>
</tbody>
</table>

**Note:** SOL Baud Rate is not supported.
A.2. Sample <filename>.INI File

The following information is for reference purposes only. The content and settings of the .INI file for different server systems may differ from those shown below.

Instructions for editing the .INI file:

- Section Header – must not be edited – could lead unpredictable behavior.
- Un-editable fields have specific instructions.
- Options for the fields are clearly called out – no other options allowed.
- Not all IPMI/BIOS settings under a section are available – only those that are required for the user to configure.
- The section headers are generated automatically depending on the platform and a few sections and fields may not be available depending on the platform firmware and BIOS.

; Warning!!! Warning!!! Warning!!!
; ---------------------------------
; This file has been generated in a system with the BIOS/Firmware
; specifications as mentioned under [SYSTEM] section. Please do not
; modify or edit any information in this section. Attempt to restore
; these information in incompatible systems could cause serious
; problems to the systems and could lead the system non-functional.
; Note: The file is best seen using wordpad.

[SYSTEM]
BIOSVersion=SE5C600.86B.99.99.x032.072520111118 ; This field should not be edited
FWBootVersion=4 ; This field should not be edited
FWOpcodeVersion=21 ; This field should not be edited
PIAVersion=6 ; This field should not be edited

[POWER]
PowerRestorePolicy=ON ; Options: On, Off or Restore

[USERS]
NumberOfUsers=5 ; This field should not be edited

[USERS::USER1]
UserName= ; This field should not be edited
GlobalUserStatus=DISABLE ; Options: Enable or Disable
PrivilegeCh1=ADMIN ; Options: User, Operator, Admin, NoAccess
UserAccessCh1=DISABLE ; Options: Enable or Disable
SOLEnableCh1=ENABLE ; Options: Enable or Disable
PrivilegeCh2=ADMIN ; Options: User, Operator, Admin, NoAccess
UserAccessCh2=DISABLE ; Options: Enable or Disable
SOLEnableCh2=ENABLE ; Options: Enable or Disable
PrivilegeCh3=ADMIN ; Options: User, Operator, Admin, NoAccess
UserAccessCh3=DISABLE ; Options: Enable or Disable
SOLEnableCh3=ENABLE ; Options: Enable or Disable

[USERS::USER2]
UserName=root ; This field should not be edited
GlobalUserStatus=DISABLE ; Options: Enable or Disable
PrivilegeCh1=ADMIN ; This field should not be edited
UserAccessCh1=ENABLE ; This field should not be edited
SOLEnableCh1=ENABLE ; This field should not be edited
PrivilegeCh2=ADMIN ; This field should not be edited
UserAccessCh2=ENABLE ; This field should not be edited
SOLEnableCh2=ENABLE ; This field should not be edited
PrivilegeCh3=ADMIN ; This field should not be edited
UserAccessCh3=ENABLE ; This field should not be edited
SOLEnableCh3=ENABLE ; This field should not be edited

[USERS::USER3]
UserName=test1 ; ASCII printable characters in the range of 0x21 to 0x7E. Max length 16 bytes
GlobalUserStatus=DISABLE ; Options: Enable or Disable
PrivilegeCh1=ADMIN ; Options: User, Operator, Admin, NoAccess
UserAccessCh1=DISABLE ; Options: Enable or Disable
SOLEnableCh1=ENABLE; Options: Enable or Disable
PrivilegeCh1=ADMIN; Options: User, Operator, Admin, NoAccess
UserAccessCh1=DISABLE; Options: Enable or Disable
SOLEnableCh2=ENABLE; Options: Enable or Disable
PrivilegeCh2=ADMIN; Options: User, Operator, Admin, NoAccess
UserAccessCh2=DISABLE; Options: Enable or Disable
SOLEnableCh3=ENABLE; Options: Enable or Disable
PrivilegeCh3=ADMIN; Options: User, Operator, Admin, NoAccess
UserAccessCh3=DISABLE; Options: Enable or Disable

[USERS::USER4]
UserName=test2; ASCII printable characters in the range of 0x21 to 0x7E. Max length 16 bytes
GlobalUserStatus=DISABLE; Options: Enable or Disable
PrivilegeCh1=ADMIN; Options: User, Operator, Admin, NoAccess
UserAccessCh1=DISABLE; Options: Enable or Disable
SOLEnableCh1=ENABLE; Options: Enable or Disable
PrivilegeCh2=ADMIN; Options: User, Operator, Admin, NoAccess
UserAccessCh2=DISABLE; Options: Enable or Disable
SOLEnableCh2=ENABLE; Options: Enable or Disable
PrivilegeCh3=ADMIN; Options: User, Operator, Admin, NoAccess
UserAccessCh3=DISABLE; Options: Enable or Disable
SOLEnableCh3=ENABLE; Options: Enable or Disable

[USERS::USER5]
UserName=test3; ASCII printable characters in the range of 0x21 to 0x7E. Max length 16 bytes
GlobalUserStatus=DISABLE; Options: Enable or Disable
PrivilegeCh1=ADMIN; Options: User, Operator, Admin, NoAccess
UserAccessCh1=DISABLE; Options: Enable or Disable
SOLEnableCh1=ENABLE; Options: Enable or Disable
PrivilegeCh2=ADMIN; Options: User, Operator, Admin, NoAccess
UserAccessCh2=DISABLE; Options: Enable or Disable
SOLEnableCh2=ENABLE; Options: Enable or Disable
PrivilegeCh3=ADMIN; Options: User, Operator, Admin, NoAccess
UserAccessCh3=DISABLE; Options: Enable or Disable
SOLEnableCh3=ENABLE; Options: Enable or Disable

[PEF]
PEFEnable=ENABLE; Options: Enable, Disable

[PEF::FILTERS]
Filter1=DISABLE; Options: Enable, Disable
Filter2=DISABLE; Options: Enable, Disable
Filter3=DISABLE; Options: Enable, Disable
Filter4=DISABLE; Options: Enable, Disable
Filter5=DISABLE; Options: Enable, Disable
Filter6=DISABLE; Options: Enable, Disable
Filter7=DISABLE; Options: Enable, Disable
Filter8=DISABLE; Options: Enable, Disable
Filter9=DISABLE; Options: Enable, Disable
Filter10=DISABLE; Options: Enable, Disable
Filter11=DISABLE; Options: Enable, Disable
Filter12=DISABLE; Options: Enable, Disable

[LANCHANNELS]
NumberOfLANChannels=3; This field should not be edited
DHCPHostName=DCMI001E670DD158; ASCII printable characters in the range of 0x21 to 0x7E. Max length 64 bytes
LANFailOver=DISABLE; Options: Enable or Disable

[CHANNEL::LAN1]
AlertEnable=ENABLE; Options: Enable, Disable
PerMessageAuthentication=ENABLE; Options: Enable, Disable
UserLevelAuthentication=ENABLE; Options: Enable, Disable
AccessMode=ALWAYS; Options: Disable, Always, shared
PrivilegeLevelLimit=ADMIN; Options: User, Operator, Admin
CommunityString=public; Upto 16 bytes, no space allowed
ARPEnable=DISABLE; Options: Enable, Disable
ARPResponse=ENABLE; Options: Enable, Disable
ARPInterval=0; Decimal value between 0 & 255. This values is in milliseconds. Input value rounded down to the nearest 500ms value
DHCPEnable=DISABLE; Options: Enable or Disable. If 'Disable' static IP will be used
HostIP=0.0.0.0
SubnetMask=0.0.0.0
GatewayIP=0.0.0.0
GatewayMAC=00-00-00-00-00-00
BackupGatewayIP=0.0.0.0
BackupGatewayMAC=00-00-00-00-00-00
IPV6Status=DISABLE
AlertIP0=0.0.0.0
AlertMAC0=00-00-00-00-00-00
AlertMAC1=00-00-00-00-00-00
[CHANNEL::LAN2]
AlertEnable=ENABLE
PerMessageAuthentication=ENABLE
UserLevelAuthentication=ENABLE
AccessMode=ALWAYS
PrivilegeLevelLimit=ADMIN
CommunityString=public
ARPEnable=DISABLE
ARPResponse=DISABLE
ARPInterval=0
DHCPEnable=DISABLE
AlertMAC1=00-00-00-00-00-00
AlertIP1=0.0.0.0
AlertMAC0=00-00-00-00-00-00
AlertMAC1=00-00-00-00-00-00
[CHANNEL::LAN3]
AlertEnable=ENABLE
PerMessageAuthentication=ENABLE
UserLevelAuthentication=ENABLE
AccessMode=ALWAYS
PrivilegeLevelLimit=ADMIN
CommunityString=public
ARPEnable=DISABLE
ARPResponse=DISABLE
ARPInterval=0
DHCPEnable=DISABLE
AlertMAC1=00-00-00-00-00-00
AlertIP1=0.0.0.0
AlertMAC0=00-00-00-00-00-00
AlertMAC1=00-00-00-00-00-00
[CHANNEL::LAN1::SOL]
SOEnable=ENABLE
PrivilegeLevelLimit=USER
SolNumberOfRetries=7
SolRetryInterval=500
SolBaudRate=38400

.[respective platform FW specifications for the supported Baudrates]
Intel® System Configuration Utility User Guide

SOLEnable=ENABLE ; Options: Enable, Disable
PrivilegeLevelLimit=USER ; Options: Admin, User, Operator
SolNumberOfRetries=7 ; Decimal value in the range 0-7
SolRetryInterval=500 ; Decimal value in the range of 0-2559 rounded down to the nearest unit of 10. In milliseconds
SolBaudRate=38400 ; Options: 9600, 19200, 38400, 57600, 115200. Refer respective platform FW specifications for the supported Baudrates

[CHANNEL::LAN3::SOL]
SOLEnable=ENABLE ; Options: Enable, Disable
PrivilegeLevelLimit=USER ; Options: Admin, User, Operator
SolNumberOfRetries=7 ; Decimal value in the range 0-7
SolRetryInterval=500 ; Decimal value in the range of 0-2559 rounded down to the nearest unit of 10. In milliseconds
SolBaudRate=38400 ; Options: 9600, 19200, 38400, 57600, 115200. Refer respective platform FW specifications for the supported Baudrates

[EMAILCONFIG]
NumberOfEmailConfig=45 ; This field should not be edited

[EMAILCONFIG::CHANNEL1::INFO]
SenderName= ; ASCII printable character max upto 32 bytes
FromAddress= ; ASCII printable character max upto 32 bytes
ToAddress= ; ASCII printable character max upto 64 bytes
Subject= ; ASCII printable character max upto 32 bytes
SMTPUserName= ; ASCII printable character max upto 16 bytes
Message= ; ASCII printable character max upto 64 bytes
ServerAddress=0.0.0.0 ; In xxx.xxx.xxx.xxx form

[EMAILCONFIG::CHANNEL2::INFO]
SenderName= ; ASCII printable character max upto 32 bytes
FromAddress= ; ASCII printable character max upto 32 bytes
ToAddress= ; ASCII printable character max upto 64 bytes
Subject= ; ASCII printable character max upto 32 bytes
SMTPUserName= ; ASCII printable character max upto 16 bytes
Message= ; ASCII printable character max upto 64 bytes
ServerAddress=0.0.0.0 ; In xxx.xxx.xxx.xxx form

[EMAILCONFIG::CHANNEL3::INFO]
SenderName= ; ASCII printable character max upto 32 bytes
FromAddress= ; ASCII printable character max upto 32 bytes
ToAddress= ; ASCII printable character max upto 64 bytes
Subject= ; ASCII printable character max upto 32 bytes
SMTPUserName= ; ASCII printable character max upto 16 bytes
Message= ; ASCII printable character max upto 64 bytes
ServerAddress=0.0.0.0 ; In xxx.xxx.xxx.xxx form

[BIOS]
[BIOS::Main]
Quiet Boot=1 ;Options: 0=Disabled: 1=Enabled
POST Error Pause=0 ;Options: 0=Disabled: 1=Enabled

[BIOS::Processor Configuration]
Intel(R) Turbo Boost Technology=1 ;Options: 0=Disabled: 1=Enabled
Enhanced Intel SpeedStep(R) Tech=1 ;Options: 0=Disabled: 1=Enabled
Processor C3=0 ;Options: 0=Disabled: 1=Enabled
Processor C6=1 ;Options: 0=Disabled: 1=Enabled
Intel(R) Hyper-Threading Tech=1 ;Options: 0=Disabled: 1=Enabled
Active Processor Cores[1]=0 ;Options: 1=1: 2=2: 3=3: 4=4: 5=5: 6=6: 7=7: 0=All
Execute Disable Bit=1 ;Options: 0=Disabled: 1=Enabled
Intel(R) Virtualization Technology=0 ;Options: 0=Disabled: 1=Enabled
Intel(R) VT for Directed I/O=0 ;Options: 0=Disabled: 1=Enabled
MLC Streamer=0 ;Options: 1=Disabled: 0=Enabled
MLC Spatial Prefetcher=0 ;Options: 1=Disabled: 0=Enabled
DCU Data Prefetcher=0 ;Options: 1=Disabled: 0=Enabled
DCU Instruction Prefetcher=0 ;Options: 1=Disabled: 0=Enabled
Direct Cache Access (DCA)=1 ;Options: 0=Disabled: 1=Enabled
Software Error Recover=0 ;Options: 0=Disabled: 1=Enabled

[BIOS::Memory Configuration]
Memory Operating Speed Selection=0 ;Options: 0=Auto: 1=1067: 2=1333: 3=800
Phase Shedding=1; Options: 1=Auto: 0=Disabled: 1=Enabled
Multi-Threaded MRC=1; Options: 0=Disabled: 1=Enabled
Memory Type=2; Options: 0=RDIMMs only: 2=UDIMMs and RDIMMs:
  1=UDIMMs only
MPST Support=0
PCCT Support=0
ECC Support=1
Rank Multiplication=0; Options: 0=Auto: 1=Enabled
LRDIMM Module Delay=1; Options: 0=Auto: 1=Disabled
MemTest=1; Options: 0=Disabled: 1=Enabled
SW MemTest=0; Options: 0=Disabled: 1=Enabled
MemTest On Fast Boot=0; Options: 0=Disabled: 1=Enabled
Attempt Fast Boot=0; Options: 0=Disabled: 1=Enabled
Scrambling Seed High=54165; Options: 65535=Max: 0=Min: 0=Step
Battery Back Ch 2=0; Options: 0=Disabled: 1=Enabled
Battery Back Ch 3=1; Options: 0=Disabled: 1=Enabled
Check PCH_FM_STS=0; Options: 0=Disabled: 1=Enabled
Check PlatformDetectADR=1; Options: 0=Disabled: 1=Enabled
Patrol Scrub=1; Options: 0=Disabled: 1=Enabled
Demand Scrub=1; Options: 0=Disabled: 1=Enabled
Correctable Error Threshold[1]=10; Options: 10=10: 20=20: 5=5
Correctable Error Threshold[2]=10; Options: 10=10: 20=20: 5=5: 1=ALL: 0=None

[BIOS::Memory RAS and Performance Configuration]

[BIOS::Mass Storage Controller Configuration]

[BIOS::PCI Configuration]
Maximize Memory below 4GB=0; Options: 0=Disabled: 1=Enabled
Memory Mapped I/O above 4GB=0; Options: 0=Disabled: 1=Enabled
Onboard Video=1; Options: 0=Disabled: 1=Enabled
Dual Monitor Video=0; Options: 0=Disabled: 1=Enabled
Primary Display=1; Options: 3=Auto: 0=IGFX: 2=PCI Bus: 1=PEG

[BIOS::Serial Port Configuration]
Serial A Enable=1; Options: 0=Disabled: 1=Enabled
Address=1; Options: 4=2E8h: 2=2F8h: 3=3E8h: 1=3F8h
IRQ=0; Options: 4=3: 0=4
Serial B Enable=1; Options: 0=Disabled: 1=Enabled
Address=2; Options: 4=2E8h: 2=2F8h: 3=3E8h: 1=3F8h
IRQ=4; Options: 4=3: 0=4

[BIOS::USB Configuration]
USB Controller=1; Options: 0=Disabled: 1=Enabled
Legacy USB Support=0; Options: 2=Auto: 1=Disable
d: 0=Enabled
Port 60/64 Emulation=1; Options: 0=Disabled: 1=Enabled
Make USB Devices Non-Bootable=0; Options: 0=Disabled: 1=Enabled
Device Reset timeout=1; Options: 0=10 sec: 2=30 sec: 3=40 sec
HP v190w 3000=0; Options: 0=Auto: 4=CD-ROM: 1=Floppy: 2=Forced FDD: 3=Hard Disk

[BIOS::System Acoustic and Performance Configuration]
Set Throttling Mode=0; Options: 0=Auto: 6=DCLTT: 2=OLTT: 3=SCLTT
Altitude=900; Options: 300=300m or less: 900=301m - 900m: 1500=901m - 1500m: 3000=Higher than 1500m
Set Fan Profile=1; Options: 2=Acoustic: 1=Performance
Fan PWM Offset=0; Options: 100=Max: 0=Min: 0=Step

[BIOS::Serial Port Console Redirection]
Console Redirection[2]=1; Options: 0=Disabled: 1=Enabled
Console Redirection[4]=0; Options: 0=Disabled: 1=Enabled
Out-of-Band Mgmt Port=1 (Disabled)

[BIOS::Security]
Front Panel Lockout=0; Options: 0=Disabled: 1=Enabled

[BIOS::Server Management]
Assert NMI on SERR=1; Options: 0=Disabled: 1=Enabled
Assert NMI on PERR=1; Options: 0=Disabled: 1=Enabled
Reset on CATERR=1; Options: 0=Disabled: 1=Enabled
Reset on ERR2=1                              ;Options: 0=Disabled: 1=Enabled
Resume on AC Power Loss=2                  ;Options: 1=Last State: 2=Power On: 0=Stay Off
Clear System Event Log=0                   ;Options: 0=Disabled: 1=Enabled
FRB-2 Enable=1                             ;Options: 0=Disabled: 1=Enabled
OS Boot Watchdog Timer=0                   ;Options: 0=Disabled: 1=Enabled
Plug & Play BMC Detection=0                 ;Options: 0=Disabled: 1=Enabled
EuP LOT6 Off-Mode=0                         ;Options: 0=Disabled: 1=Enabled

[BIOS::Console Redirection]
Console Redirection[1]=0                   ;Options: 0=Disabled: 1=Serial Port A: 2=Serial Port B
     B
Console Redirection[3]=0                   ;Options: 0=Disabled: 1=Serial Port A
Console Redirection[4]=0                   ;Options: 0=Disabled: 1=Serial Port A
Console Redirection[5]=0                   ;Options: 0=Disabled: 2=Serial Port B

[BIOS::BootOrder]
Hard Drive=1                                
Network Card=2                              
Internal EFI Shell=3
## Appendix C. Glossary

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACPI</td>
<td>Advanced Configuration and Power Interface</td>
</tr>
<tr>
<td>ARP</td>
<td>Address Resolution Protocol</td>
</tr>
<tr>
<td>BMC</td>
<td>Baseboard management controller</td>
</tr>
<tr>
<td>CLTT</td>
<td>Closed-loop thermal throttling (memory throttling mode)</td>
</tr>
<tr>
<td>DHCP</td>
<td>Dynamic Host Configuration Protocol</td>
</tr>
<tr>
<td>FRB</td>
<td>Fault resilient booting</td>
</tr>
<tr>
<td>FRU</td>
<td>Field replaceable unit</td>
</tr>
<tr>
<td>I2C</td>
<td>Inter-integrated circuit bus</td>
</tr>
<tr>
<td>IPMI</td>
<td>Intelligent Platform Management Interface</td>
</tr>
<tr>
<td>LAN</td>
<td>Local area network</td>
</tr>
<tr>
<td>MD5</td>
<td>Message Digest 5. A hashing algorithm that provides higher security than MD2.</td>
</tr>
<tr>
<td>NIC</td>
<td>Network interface card</td>
</tr>
<tr>
<td>NMI</td>
<td>Non-maskable interrupt</td>
</tr>
<tr>
<td>OC</td>
<td>Over Current</td>
</tr>
<tr>
<td>OLTT</td>
<td>Open-loop thermal throttling (memory throttling mode)</td>
</tr>
<tr>
<td>OT</td>
<td>Over Temperature</td>
</tr>
<tr>
<td>PCI</td>
<td>Peripheral Component Interconnect</td>
</tr>
<tr>
<td>PEF</td>
<td>Platform event filtering</td>
</tr>
<tr>
<td>PIA</td>
<td>Platform information area</td>
</tr>
<tr>
<td>POST</td>
<td>Power-on self-test</td>
</tr>
<tr>
<td>PWM</td>
<td>Pulse Width Modulation. The mechanism used to control the speed of system fans.</td>
</tr>
<tr>
<td>RAM</td>
<td>Random Access Memory</td>
</tr>
<tr>
<td>RAS</td>
<td>Reliability, availability, and serviceability</td>
</tr>
<tr>
<td>ROM</td>
<td>Read-only memory</td>
</tr>
<tr>
<td>RTC</td>
<td>Real-time clock</td>
</tr>
<tr>
<td>SEL</td>
<td>System event log</td>
</tr>
<tr>
<td>SNMP</td>
<td>Simple Network Management Protocol</td>
</tr>
<tr>
<td>SOL</td>
<td>Serial-over-LAN</td>
</tr>
</tbody>
</table>