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1 Introduction

The Intel® System Configuration Utility (Syscfg) is a command-line utility that can be used to save and restore BIOS and firmware settings to a file or to set and display individual settings. This User Guide provides a command reference for version 10.0 and 11.0 of the Syscfg. It provides an overview of the features of the module and instructions for configuring the BIOS and management firmware on the following Intel® Server Boards:

- Intel® S1200BT Series Server Boards (S1200BT-LC and S1200BT-SE)
- Intel® Server Board S1400
- Intel® Server Board S1600
- Intel® Server Board S2400
- Intel® Server Board S2600
- Intel® Server Board S4600

Note: Not all BIOS or management firmware settings can be set using this utility. Refer to the Product Guide for your 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 utility supports the Operating System versions listed in the following table. Refer to the Tested Hardware and Operating System List for your server board to determine which operating systems are supported on your server board:

<table>
<thead>
<tr>
<th>Platforms</th>
<th>System Configuration Utility Version</th>
<th>Operating Systems/Preboot environment supported</th>
</tr>
</thead>
</table>
| Intel® S1200BT Series Server Boards (S1200BT-LC and S1200BT-SE) | 10.0 | Windows* Server 2008 Enterprise (IA32)  
Windows* Server 2008 R2 Enterprise (EM64T)  
Windows PE* 3.0 (IA32 & EM64T)  
RHEL6 (IA32 & EM64T)  
SLES11 SP1 (IA32 & EM64T) |
| Intel® Server Board S1400  
Intel® Server Board S1600  
Intel® Server Board S2400  
Intel® Server Board S2600  
Intel® Server Board S4600 | 11.0 | Windows Server 2008 Enterprise (IA32)*  
Windows* Server 2008 R2 Enterprise (EM64T)  
Windows* Server 2012 Enterprise  
Windows* 7 (ia32 AND EM64T) FOR |
Platforms | System Configuration Utility Version | Operating Systems/Preboot environment supported
---|---|---
| | Work station Server Platform’s. | Windows PE 3.0* (IA32 & EM64T) |
| | | RHEL6* Update 1 (IA32 & EM64T ) |
| | | RHEL6* Update 2 (IA32 & EM64T ) |
| | | RHEL6* Update 3 (IA32 & EM64T ) |
| | | SLES11* SP1 (IA32 & EM64T) |
| | | SLES11* SP2 (IA32 & EM64T) |

**Note:** SysCfg version or build may be different across different platforms. Please download the supported SysCfg version and build under your platform from support web site. Also please refer release notes for known issues on installation and usage.

### 1.2 Target Audience

This User Guide is intended for Original Equipment Manufacturers and those who are responsible for configuring the BIOS and Management Firmware on the Intel® Server Boards.

### 1.3 Related Documents

Following are the related documents:

- *IPMI--Intelligent Platform Management Interface Specification, Second Generation, v2.0* (available at support.intel.com)
- *Server Product Guides for BIOS Setup Options*
- *Intel® Server Configuration Utilities Deployment Procedure for Windows PE 2005*  

### 1.4 Terminology

The following table lists the terminology used in this document and the description:

<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>AES</td>
<td>Advanced Encryption Standard</td>
</tr>
<tr>
<td>AMB</td>
<td>Advanced Memory Buffer (there is an AMB on each FBDIMM)</td>
</tr>
<tr>
<td>APIC</td>
<td>Advanced Programmable Interrupt Controller</td>
</tr>
<tr>
<td>ARP</td>
<td>Address Resolution Protocol</td>
</tr>
<tr>
<td>ASF</td>
<td>Alert Standards Forum</td>
</tr>
<tr>
<td>ASIC</td>
<td>Application specific integrated circuit</td>
</tr>
<tr>
<td>BIST</td>
<td>Built-in self test</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>--------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>BMC</td>
<td>Baseboard management controller</td>
</tr>
<tr>
<td>Bridge</td>
<td>Circuitry connecting one computer bus to another, allowing an agent on one to access the other.</td>
</tr>
<tr>
<td>BSP</td>
<td>Bootstrap processor</td>
</tr>
<tr>
<td>CBC</td>
<td>Chassis bridge controller. A microcontroller connected to one or more other CBCs. Together they bridge the IPMB buses of multiple chassis.</td>
</tr>
<tr>
<td>CLI</td>
<td>Command-line interface</td>
</tr>
<tr>
<td>CLTT</td>
<td>Closed-loop thermal throttling (memory throttling mode)</td>
</tr>
<tr>
<td>CMOS</td>
<td>In terms of this specification, this describes the PC-AT compatible region of battery-backed 128 bytes of memory on the server board.</td>
</tr>
<tr>
<td>CSR</td>
<td>Control and status register</td>
</tr>
<tr>
<td>D-cache</td>
<td>Data cache. Processor-local cache dedicated for memory locations explicitly loaded and stored by running code.</td>
</tr>
<tr>
<td>DHCP</td>
<td>Dynamic Host Configuration Protocol</td>
</tr>
<tr>
<td>DIB</td>
<td>Device Information Block</td>
</tr>
<tr>
<td>DPC</td>
<td>Direct Platform Control</td>
</tr>
<tr>
<td>EEPROM</td>
<td>Electrically erasable programmable read-only memory</td>
</tr>
<tr>
<td>EMP</td>
<td>Emergency management port</td>
</tr>
<tr>
<td>FML</td>
<td>Fast management link</td>
</tr>
<tr>
<td>FNI</td>
<td>Fast management link network interface</td>
</tr>
<tr>
<td>FRB</td>
<td>Fault resilient booting</td>
</tr>
<tr>
<td>FRU</td>
<td>Field replaceable unit</td>
</tr>
<tr>
<td>FSB</td>
<td>Front side bus</td>
</tr>
<tr>
<td>FTM</td>
<td>Firmware transfer mode</td>
</tr>
<tr>
<td>GPIO</td>
<td>General-purpose input/output</td>
</tr>
<tr>
<td>HSBP</td>
<td>Hot-swap backplane</td>
</tr>
<tr>
<td>HSC</td>
<td>Hot-swap controller</td>
</tr>
<tr>
<td>I-cache</td>
<td>Instruction cache. Processor-local cache dedicated for memory locations retrieved through instruction fetch operations.</td>
</tr>
<tr>
<td>I2C</td>
<td>Inter-integrated circuit bus</td>
</tr>
<tr>
<td>IA</td>
<td>Intel® architecture</td>
</tr>
<tr>
<td>IBF</td>
<td>Input buffer</td>
</tr>
<tr>
<td>ICH</td>
<td>I/O controller hub</td>
</tr>
<tr>
<td>IERR</td>
<td>Internal error</td>
</tr>
<tr>
<td>INIT</td>
<td>Initialization signal</td>
</tr>
<tr>
<td>IPMB</td>
<td>Intelligent Platform Management Bus</td>
</tr>
<tr>
<td>IPMI</td>
<td>Intelligent Platform Management Interface</td>
</tr>
<tr>
<td>ITP</td>
<td>In-target probe</td>
</tr>
<tr>
<td>KCS</td>
<td>Keyboard controller style</td>
</tr>
<tr>
<td>KT</td>
<td>Keyboard text</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>--------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>KVM</td>
<td>Keyboard, video, mouse</td>
</tr>
<tr>
<td>LAN</td>
<td>Local area network</td>
</tr>
<tr>
<td>LCD</td>
<td>Liquid crystal display</td>
</tr>
<tr>
<td>LPC</td>
<td>Low pin count</td>
</tr>
<tr>
<td>LUN</td>
<td>Logical unit number</td>
</tr>
<tr>
<td>MAC</td>
<td>Media Access Control</td>
</tr>
<tr>
<td>MD5</td>
<td>Message Digest 5. A hashing algorithm that provides higher security than MD2.</td>
</tr>
<tr>
<td>MIB</td>
<td>Modular information block. A descriptive text translation of a PET event, contained in a MIB file for use by an SNMP agent when decoding SEL entries.</td>
</tr>
<tr>
<td>ms</td>
<td>Millisecond</td>
</tr>
<tr>
<td>MUX</td>
<td>Multiplexer</td>
</tr>
<tr>
<td>NIC</td>
<td>Network interface card</td>
</tr>
<tr>
<td>NMI</td>
<td>Non-maskable interrupt</td>
</tr>
<tr>
<td>OBF</td>
<td>Output buffer</td>
</tr>
<tr>
<td>OEM</td>
<td>Original equipment manufacturer</td>
</tr>
<tr>
<td>OLTT</td>
<td>Open-loop thermal throttling (memory throttling mode)</td>
</tr>
<tr>
<td>PCI</td>
<td>Peripheral Component Interconnect</td>
</tr>
<tr>
<td>PECI</td>
<td>Platform Environmental Control Interface</td>
</tr>
<tr>
<td>PEF</td>
<td>Platform event filtering</td>
</tr>
<tr>
<td>PET</td>
<td>Platform event trap</td>
</tr>
<tr>
<td>PIA</td>
<td>Platform information area</td>
</tr>
<tr>
<td>PLD</td>
<td>Programmable logic device</td>
</tr>
<tr>
<td>POST</td>
<td>Power-on self-test</td>
</tr>
<tr>
<td>PROM</td>
<td>Programmable read-only memory</td>
</tr>
<tr>
<td>PSMI</td>
<td>Power Supply Management Interface</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>RC4</td>
<td>Rivest Cipher 4. A stream cipher designed by Rivest for RSA data security, now RSA security. It is a variable key-size stream cipher with byte-oriented operations. The algorithm is based on a random permutation.</td>
</tr>
<tr>
<td>RMCP+</td>
<td>Remote Management Control Protocol</td>
</tr>
<tr>
<td>ROM</td>
<td>Read-only memory</td>
</tr>
<tr>
<td>RTC</td>
<td>Real-time clock</td>
</tr>
<tr>
<td>SCI</td>
<td>System Control Interrupt. A system interrupt used by hardware to notify the operating system of ACPI events.</td>
</tr>
<tr>
<td>SDR</td>
<td>Sensor data record</td>
</tr>
<tr>
<td>SDRAM</td>
<td>Synchronous dynamic random access memory</td>
</tr>
<tr>
<td>SEL</td>
<td>System event log</td>
</tr>
<tr>
<td>Term</td>
<td>Definition</td>
</tr>
<tr>
<td>--------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>SHA1</td>
<td>Secure Hash Algorithm 1</td>
</tr>
<tr>
<td>SMBus</td>
<td>A two-wire interface based on the I²C protocol. The SMBus is a low-speed bus that provides positive addressing for devices and bus arbitration.</td>
</tr>
<tr>
<td>SMI</td>
<td>Server Management Interrupt. SMI is the highest priority non-maskable interrupt.</td>
</tr>
<tr>
<td>SMM</td>
<td>Server management mode</td>
</tr>
<tr>
<td>SMS</td>
<td>Server management software</td>
</tr>
<tr>
<td>SNMP</td>
<td>Simple Network Management Protocol</td>
</tr>
<tr>
<td>SOL</td>
<td>Serial-over-LAN</td>
</tr>
<tr>
<td>SPT</td>
<td>Straight pass-through</td>
</tr>
<tr>
<td>SRAM</td>
<td>Static random access memory</td>
</tr>
<tr>
<td>UART</td>
<td>Universal asynchronous receiver and transmitter</td>
</tr>
<tr>
<td>UDP</td>
<td>User Datagram Protocol</td>
</tr>
<tr>
<td>UHCI</td>
<td>Universal Host Controller Interface</td>
</tr>
<tr>
<td>VLAN</td>
<td>Virtual local area network</td>
</tr>
</tbody>
</table>

1.5 Support Information

World Wide Web

http://support.intel.com/support/

For an updated support contact list, see http://www.intel.com/support/9089.htm/.
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. Few commands may not be supported on all platforms due to limitations in the platform firmware /BIOS. The description of each command will describe 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*, Windows* command prompt, and Windows* Pre-installation Environment. Some platforms may not support all the operating environments for this utility.
3 Quick Start Instructions

This section details the quick start instructions for configurations.

3.1 Installation

A. Linux
   I. Regular Installation:
      a. Boot into Linux and unzip the syscfg utility zip file into a folder on your hard drive. After unzip, "RHEL" or "SLES" folder will be generated.
         The syscfg directory will have the following file.
         * Syscfg.zip
      b. Unzip to get the syscfg binaries and execute the syscfg commands.
      c. To uninstall remove the syscfg folder structure.
   II. RPM Installation:
      a. Boot into Linux and unzip the syscfg utility zip file into a folder on your hard drive. Copy syscfg rpm from Linux-RPM-package (for RHEL or SLES) to local folder.
      b. Install syscfg utility by using "rpm -ivh syscfg-Vxx.x-Bxx.ixxx.rpm". This will install the utility in "/usr/bin/syscfg/"
      c. On RHEL/SLES after installing the rpm close the terminal from which rpm was installed and then execute utility from a new terminal (example: ",# syscfg -i"").
      d. To uninstall execute below command
         syscfg -e syscfg

B. UEFI
   a. Unzip syscfg utility zip file to a USB pen drive, boot into EFI and change folder to \UEFI_64 which contains:
      * ipmi.efi
      * NShell.efi
      * syscfg.efi
   b. Run 'syscfg' commands from the location where the files are copied.
   c. To uninstall SYSCFG run the following commands manually.
-Delete the contents of the directory where the utility is installed.

C. Windows/WinPE

a. Copy the syscfg utility zip file into your local directory (e.g. C:\syscfg)
b. Unzip the zip file
c. The following folders contain windows binaries and drivers under c:\syscfg folder.
   - Win_x64
   - Win_x86
   - Drivers
d. For 32 bit or EM64T Operating system, go to folder "SyscfgVxx_0_BuildXX\Drivers\win\x86" or "SyscfgVxx_0_BuildXX\Drivers\win\x64" and run install.cmd to install Intel® Intelligent Management Bus Driver Vxx.x, Intel® 28F320C3 Flash Update Device Driver Vxx.x and Intel® Intelligent Management Utility Device Vxx.x.
e. From the command prompt go to Win_x64 or Win_x86 folder and run the desired commands for the utility
f. To uninstall SYSCFG run the following commands manually
   - Delete the contents of the directory where the utility is installed.
   - Manually uninstall drivers from the Device manager

3.2 Saving a Configuration

The utility supports saving BIOS and FW settings both in binary and in text mode (from a text file, known as INI file). The advantage of using INI file is that you can modify and change the values of any of the settings available in the INI file.

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. (This location must be writable to allow you to save the system configuration.)

3. In Windows*, Windows Pre-installation Environment*, or EFI type: syscfg /s filename
   In Linux*, type: /syscfg /s filename

When saving the settings to a file, you have the option to supply the file type (scf or ini). The binary file filename.scf or filename.ini will contain the saved configuration. You can use this file to restore the configuration on this target server or other servers using the /r command.

In the absence of a user defined file type the default type would be ‘SCF. So if you neither provide file type nor filename, the default filename will be syscfg.SCF
3.3 Restoring a Configuration

If you have already saved a configuration to a file, use the following procedure to restore the system to the saved configuration, or set the configuration on identical servers to the saved configuration.

The utility supports restoring BIOS and FW settings both in binary and in text mode (from a text file, known as INI file). Unlike restoring from a binary file, the advantage of using INI file is that you can modify and change the values of any of the settings available in the INI file. In this scenario, the INI file does not clone servers but provides a mechanism of configuring the same items with different values per your requirement.

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

To restore a configuration, do the following:

1. Boot the system to one of the supported Operating Systems.
2. Change to the directory containing the syscfg executable. (The saved configuration file should also be located in this directory.)
3. To restore the saved BIOS settings in
   - Windows*, Windows Pre-installation Environment*, or EFI, type:
     ```
     syscfg /r filename.scf /b
     ```
   - In Linux*, type:
     ```
     ./syscfg /r filename.scf /b
     ```
4. On S1400, S1600, S2400, S2600, and S4600 platform series BIOS administrator password needs to be supplied as a mandatory field as explained below
   a. If BIOS administrator password is set
      - Windows*, Windows Pre-installation Environment*, or EFI, type:
        ```
        syscfg /r filename.scf /b /bap <BIOS administrator password>
        ```
      - In Linux*, type:
        ```
        ./syscfg /r filename.scf /b /bap <BIOS administrator password>
        ```
   b. If BIOS administrator password is not set
      - Windows*, Windows Pre-installation Environment*, or EFI, type:
        ```
        syscfg /r filename.scf /b
        ```
      - In Linux*
./syscfg /r filename.scf /b

Note: Save and Restore of SCF file format is not supported on S1200BT and S1400/S1600/S2400/S2600/S4600 platform series

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-switches, BIOS, and Firmware commands and their tasks.

4.1 Quick Reference to Sysconfig Commands (Generic, BIOS, and Firmware)

The following table lists all the Sysconfig commands classified--as generic, BIOS, and Firmware--for your quick reference:

<table>
<thead>
<tr>
<th>Generic Commands/Switches</th>
<th>BIOS Commands</th>
<th>Firmware Commands</th>
</tr>
</thead>
<tbody>
<tr>
<td>/d Display</td>
<td>/bag BIOS Administrator Password</td>
<td>/lac LAN Alert Configuration</td>
</tr>
<tr>
<td>/i Information</td>
<td>BIOS User Password /(/bup) BIOS User Password</td>
<td>/lae LAN Alert Enable</td>
</tr>
<tr>
<td>/q Quiet Mode switch</td>
<td>/bap BIOS Administrator Password (/*bup) BIOS User Password</td>
<td>/lc LAN Configuration</td>
</tr>
<tr>
<td>/r Restore</td>
<td>/bbosys System Boot Order</td>
<td>/le LAN Enable</td>
</tr>
<tr>
<td>/s Save</td>
<td>/bbo System Boot Order in detail</td>
<td>/ifo LAN Failover</td>
</tr>
<tr>
<td></td>
<td>/bcs BIOS Configure Setting</td>
<td>/pef PEFC Configure</td>
</tr>
<tr>
<td></td>
<td>/bldfs BIOS Load Default Factory Settings</td>
<td>/peff PEF Filter</td>
</tr>
<tr>
<td></td>
<td>/byar This command creates a new UEFI variable</td>
<td>/pefp PEF Policy</td>
</tr>
<tr>
<td></td>
<td>/dt Date and Time</td>
<td>/prp Power Restore Policy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>/rbmc Reset BMC</td>
</tr>
<tr>
<td></td>
<td></td>
<td>/rfc Restore firmware settings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>/rmr Reset Node Manager</td>
</tr>
<tr>
<td></td>
<td></td>
<td>/sbmcdl Save BMC debug log</td>
</tr>
</tbody>
</table>

/u Users 
/uq User Enable 
/up User privilege
4.2 Generic Commands/Switches

4.2.1 Information (/i)

```
syscfg /i [filename.SC] or syscfg /i [filename.INI]
```

*Filename*
File name for a System Configuration File (.SCF or .INI) in the current working directory. If the filename is not specified, the command displays the BIOS and firmware versions of the current system.

Display the BIOS and firmware versions of the system or the saved BIOS and firmware settings in a System Configuration File.

Examples:

```
syscfg /i
syscfg /i btp.ini
```

Note: Display of BIOS and Firmware versions using SCF file format is not supported on S1200BT and S1400/S1600/S2400/S2600/S4600 platform series.

4.2.2 Quiet (/q)

```
syscfg options /q
```

*Options*
Any other valid option. The /q switch must be at the end of the command line.

*Quiet Mode.* This option prevents all output from the command.

Suppress all messages.

Example:

```
syscfg /r /f /b /q
```
4.2.3 Restore (/r)

```bash
```

- **Filename**
  
  Filename of the syscfg configuration file (.SCF or .INI) in the current working directory. If no filename is specified, the default filename syscfg.scf or syscfg.ini is used based on the parameter supplied explained in the example below. The filename suffix must be .SCF or .INI.

- **/f**
  
  Restore the firmware settings. (See Appendix B for a list of the settings that are restored.)

- **/b**
  
  Restore the BIOS settings. (See Appendix B for a list of the settings that are restored.)

Restore the BIOS and firmware settings from a SCF/INI file.

Examples:

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

```bash
syscfg /r ini /f /b (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, you must 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.
- Save and Restore of SCF file format is not supported on S1200BT and S1400/S1600/S2400/S2600/S4600 platform series
4.2.4 Save (/s)

```
```

**Filename**
File name to be used for the syscfg configuration file (.SCF or .INI) in the current working directory. If no filename is specified, the default file name syscfg.scf or syscfg.ini is used based on the parameter supplied explained in the example below. The filename suffix must be .SCF or .INI, if omitted; syscfg will add the .SCF suffix. The filename should consist of only alphanumeric characters.

```
/f
Save the firmware settings. (See Appendix B for a list of the settings that are saved.)
```

```
/b
Save the BIOS settings. (See Appendix B for a list of the settings that are saved.)
```

Save the BIOS and firmware settings to a SCF/INI file.

**Example:**

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

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

**Notes:**

- 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/FW configurable settings and a duplicating 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 S1200BT and S1400/S1600/S2400/S2600/S4600 platform series.
4.2.5 Display (/d)

`syscfg /d {CHANNEL Channel_ID | BIOS | BIOSSETTINGS {[group BIOS_Group_Name BIOS_Setting_Name [BIOS_Setting_Name...] | [individual] BIOS_Setting_Name [BIOS_Setting_Name...] | 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]]}}

- **CHANNEL**
  - **Channel_ID**
    - Displays the BMC Channel configuration for the specified channel.
    - IPMI Channel ID.

- **BIOS**
  - Displays the current values of the BIOS settings that can be configured with this utility (except the Administrator and User passwords.)

- **BIOSSETTINGS**
  - Displays values of a subset the BIOS settings. The arguments that follow this keyword are used to select the BIOS settings to display.

- **group**
  - Selects the BIOS Settings based on the name of the group in BIOS Setup. If both group and individual keywords are omitted, the default is individual.

- **individual**
  - Selects the individual BIOS Settings anywhere in BIOS Setup. If two or more settings have the same name, the first setting found in BIOS Setup is displayed.

- **BIOS_Group_Name**
  - The name of the page in the BIOS Setup screen. Refer to the Technical Product Specification for your server board for the BIOS Setup screen names.

- **BIOS_Setting_Name**
  - The name of the BIOS settings on the BIOS Setup screen. Refer to the Technical Product Specification for your server board for the BIOS Setup setting names.

- **LAN**
  - Displays the BMC LAN channel configuration.
    - The Operating System settings may be different.
    - The Operating System settings may be different.

- **POWER**
  - Displays the power restore policy.

- **PEF**
  - Displays the Platform Event Filters.

- **SOL**
  - Displays the Serial Over LAN settings.

- **USER**
  - Displays the BMC user settings.
  - IPMI Channel ID.

- **LAN_Alert_Destination_Index**
  - Enter the LAN Alert Destination Index.

- **Filter_Table_Index**
  - Enter the Filter Table Index.
Policy_Table_Index
Enter the PEF Policy Table Index.

User_ID
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).

FWADVCFG
Displays the advanced firmware settings for the channel, users, and SMTP configuration.

Channel_ID
IPMI Channel ID.

User_ID
BMC User ID. When used with the FWADVCFG keyword, the configuration information is displayed for the user.

SMTP_Configuration_Index
Specifies the SMTP configuration in the firmware email alerting tables.

Display the specified BMC and BIOS settings.

Examples:

```
syscfg /d channel 1
syscfg /d lan 1 2
syscfg /d pef 2 1
syscfg /d BIOSSETTINGS individual "Quiet Boot"
syscfg /d BIOSSETTINGS "Set Fan Profile"
syscfg /d BIOSSETTINGS group "Main" "Quiet Boot" "POST Error Pause"
syscfg /d biossettings group "system acoustics and performance configuration" "Set throttling mode" "Altitude" "Set fan profile"
syscfg /d FWADVCFG 3 2 1
```
4.3 BIOS Commands

This section lists the BIOS Commands.

4.3.1 BIOS Administrator Password (/bap)

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

old_password
new_password

The maximum length of the password is seven characters. The password cannot have characters other than alphanumeric (a-z, A-Z, 0-9) and is case insensitive. Use two double quotes (""") to represent a null password.

On S1400/S1600/S2400/S2600/S4600 platform series, the password should be a minimum of 8 characters and maximum 14 characters in length. The password can have characters alphanumeric (a-z, A-Z, 0-9) and special characters mentioned below:

! @ # $ % ^ * ( ) - _ + = ? '

which are case insensitive. Use two double quotes (""") to represent a null password.

Sets or clears the BIOS Administrator password. You must enter the old password, if set, or the null string if the Administrator password is currently not set, before entering the new password. 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 this password is required to enter Setup. If you set or change the BIOS Administrator password, you cannot change any other BIOS option using syscfg except the BIOS User and Administrator passwords. However on S1400/S1600/S2400/S2600/S4600 platform series you can change any other BIOS option using syscfg by providing the Administrator password. You may combine the /bap and /bup commands to set both the BIOS Administrator and User passwords at the same time.

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

Examples:

```
syscfg /bap "" kwm93a3
syscfg /bap kwm93a9 lgts284
syscfg /bap "" lgts284 /bup "" kwm93a3
```
On S1400/S1600/S2400/S2600/S4600 platform series

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

**Note:** The Set BIOS User Password (/bup) option (described in the following section) can only be used if system has a valid Administrator password set. Clearing the BIOS Administrator password will also clear the User password.

### 4.3.2 BIOS User Password (/bup)

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

On S1400/S1600/S2400/S2600/S4600 platform series the command is

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

```
old_password, new_password
```

The maximum length of the password is seven characters. The password cannot have characters other than alphanumeric (a-z, A-Z, 0-9) and is case insensitive. Use two double quotes "" to represent a null password.

On S1400/S1600/S2400/S2600/S4600 platform series, the password should be a minimum of 8 characters and maximum 14 characters in length. The password can have characters alphanumeric (a-z, A-Z, 0-9) and special characters mentioned below!

<table>
<thead>
<tr>
<th>Special Characters</th>
</tr>
</thead>
<tbody>
<tr>
<td>! @ # $ % ^ * ( ) - _ + = ? '</td>
</tr>
</tbody>
</table>

which are case insensitive. Use two double quotes "" to represent a null password.

Sets or clears the BIOS User password. You must enter the old password, if set, or the null string if the User password is currently not set, before entering the new password. Enter a null string for the new password to clear the password. The User password controls access to modify the following BIOS Setup fields: time, date, language, and User password. If only one password (Administrator or User) is set, then this password is required to enter Setup. If you set or change the BIOS User password, you cannot change any other BIOS option using syscfg except the BIOS User and Administrator passwords.

However on S1400/S1600/S2400/S2600/S4600 platform series you can change the user password by providing the administrator password as explained below.

Refer to the *Product Guide* for your Intel® Server Board for more information on BIOS Setup options.
Examples:

```
syscfg /bup "" kwm93a3
syscfg /bup kwm93a9 lqts284
syscfg /bup lqts284 ""
syscfg /bap "" lqts284 /bup "" kwm93a3
```

On S1400/S1600/S2400/S2600/S4600 platform series

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

**Note**: The /bup option can only be used if system has a valid Administrator password set. Clearing the Administrator password will also clear the User password.

**Note**: On S1400/S1600/S2400/S2600/S4600 platform series User password cannot be same as administrator password.
4.3.3 System Boot Order (/bbosys)

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

`device_number`  The current ordinal number of the system boot device (1 is the first device, 2 is the second device, and so on.). To change the order, specify an order for the device numbers (for example, if you specify “2 1 4 3” then the second boot device will be the first boot device after the command is executed.

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

Display or set the system boot order.

Examples:

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

On S1400/S1600/S2400/S2600/S4600 platform series to set the BIOS boot order administrator password should be provided as explained below

1. When BIOS administrator password is set and its value is “admin@123”

```
syscfg /bbosys admin@123 2 1 3 4
```

2. When BIOS administrator password is not set

```
syscfg /bbosys "" 2 1 3 4
```

4.3.4 System Boot Order in detail (/bbo)

The “/bbo” switch will display elaborate information of all boot devices present in the system under different groups or classifications.

Display the detailed boot device information.

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

Changing the boot order of bootable devices types.

Example:

```bash
syscfg /bbo EFI NW DVD HDD
```

Here, EFI is now the first system boot option and Network boot is the second option, followed by CD/DVD, Hard Disk Drive and so on.

Changing the order of bootable devices within a particular boot device class

```bash
syscfg /bbo NW 2 1
```

Here, IBA GE Slot 0101 v1327 has been chosen as the first bootable option and IBA GE Slot 0100 v1327 has been chosen as the second bootable option in network boot device category.

On S1400/S1600/S2400/S2600/S4600 platform series to set the detailed system boot order administrator password should be provided as explained below

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

If Administrator password is not set use:

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

**Note:**

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

2. /bbo commands cannot be cascaded; for example,

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

or

```bash
syscfg /bbo NW 2 1
```
are valid

but

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

is not a valid command.

### 4.3.5 Configure BIOS Settings (/bcs)

```
syscfg /bcs [BIOS_Group_Name] BIOS_Setting_Name Value [BIOS_Setting_Name Value [...]]
```

On S1400/S1600/S2400/S2600/S4600 platform series the command is

```
syscfg /bcs [BIOS administrator password] [BIOS_Group_Name] BIOS_Setting_Name Value [BIOS_Setting_Name Value [...]]
```

- **BIOS_Setting_Name**: The name of the BIOS settings on the BIOS Setup screen. Refer to the Technical Product Specification for your server board for the BIOS Setup setting names.

- **BIOS_Group_Name**: The name of the page in the BIOS Setup screen. Refer to the Technical Product Specification for your server board for the BIOS Setup screen names.

- **Value**: The value for the BIOS Setting.

Set the value of individual BIOS Settings.

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

Examples:

```
syscfg /bcs "Quiet Boot" 0
syscfg /bcs "Main" "Quiet Boot" 0 "POST Error Pause" 1
syscfg /bcs "system acoustic and performance configuration" "Set throttling mode" 2 "Altitude" 900 "Set fan profile" 2
```

On S1400/S1600/S2400/S2600/S4600 platform series.

1. When BIOS administrator password is set and it value is “admin@123”

```
syscfg /bcs "admin@123" "Quiet Boot" 0
syscfg /bcs "admin@123" "Main" "Quiet Boot" 0 "POST Error Pause" 1
syscfg /bcs "admin@123" "system acoustic and performance configuration" "Set throttling mode" 2 "Altitude" 900 "Set fan profile" 2
```

2. When BIOS administrator is not set.

```
syscfg /bcs "" "Quiet Boot" 0
syscfg /bcs "" "Main" "Quiet Boot" 0 "POST Error Pause" 1
syscfg /bcs "" "system acoustic and performance configuration" "Set throttling mode" 2 "Altitude" 900 "Set fan profile" 2
```
Use the `syscfg /d biossettings` command to show the possible values for the BIOS Setting. For example:

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

**Note:**

Intel® S1200BT and S1400/S1600/S2400/S2600/S4600 Series Server Boards utility does not support configuring “BMC Configuration” under BIOS “Server Management” settings using the switches “/bcs” and “/d biossettings”.

### 4.3.6 BIOS Load Default Factory Settings (/bldfs)

```
syscfg /bldfs
```

On S1400/S1600/S2400/S2600/S4600 platform series the command is

```
syscfg /bldfs [BIOS administrator password]
```

Refer to the *Product Guide* for your Intel® Server Board for more information on BIOS Setup default settings.

Load the default factory BIOS settings.

If the /bldfs option requires a reboot to reset the default settings.

Examples:

```
syscfg /bldfs
```

On S1400/S1600/S2400/S2600/S4600 platform series.

1. When BIOS administrator password is set and it value is “admin@123”

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

2. When BIOS administrator is not set.

```
syscfg /bldfs **
```

### 4.3.7 BIOS Variable (/bvar)

```
syscfg /bvar
```

On S1400/S1600/S2400/S2600/S4600 platform series the command is

```
syscfg /bvar [BIOS administrator password]
```

The utility provides BIOS switch to create, modify, or delete a new EFI variable of user choice. The command line option of each of these commands is depicted in the following
The command is supported for Linux*, Windows* and UEFI environment.

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
</table>
| /bvar create   | This command creates a new EFI variable. The parameters that "create" command takes are as follows –
|                | • 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 will take an attribute value of 7
|                | The command will be successful when the command is executed successfully and the variable is created. However if a variable with the same name and GUID is already existing, utility will provide appropriate message. |
| /bvar overwrite| This command will overwrite the data value of an existing EFI variable. Following are the parameters passed to this command –
|                | Name: Name of the existing variable
|                | GUID: Optional, however if the name is not unique then the utility will provide message for providing GUID as an additional parameter.
|                | Data: Data that are to be overwritten |
| /bvar delete   | This command will delete an existing EFI variable. The parameters passed are as follows –
|                | Name: Name of variable
|                | GUID: Optional and needed if name is not unique |

**Note:**

1. Caution should be taken before deleting any EFI variable or rewrite the data of an existing variable. If done wrongly this may lead to the system be unstable.

2. The attributes 0, 1, 2, 4, 5 and 6 are not supported with this switch.

3. The supported attributes are 3 and 7

<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 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
```

On S1400/S1600/S2400/S2600/S4600 platform series.

1. When BIOS administrator password is set and it value is “admin@123”

```
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
```
2. When BIOS administrator is not set.

```
syscfg /bvar "admin@123" overwrite testvar testvarnewdata
syscfg /bvar "admin@123" delete testvar
```

```
syscfg /bvar "" create testvar 33838512-0BC7-4ba4-98C0-0219C2B61BF9 testvardata
syscfg /bvar "" create testvar 33838512-0BC7-4ba4-98C0-0219C2B61BF9 testvardata
syscfg /bvar "" overwrite testvar testvarnewdata
syscfg /bvar "" delete testvar
```
4.4 Firmware Commands

This section lists the Firmware commands.

4.4.1 Channels (/c)

syscfg [/c | /channel] [channel_ID { 1 {none | straight | MD5} | 2 {none | straight | MD5} | 3 {none | straight | MD5} | 4 {none | straight | MD5} | 5 {enable | disable} | 6 {enable | disable} | 7 {disabled | preboot | always | shared} | 8 {callback | user | operator | admin} | 9 {enable | disable} } ]

Channel_ID

BMC channel ID number.

1
Selects the authentication types for callback privilege level.

2
Selects the authentication types for user privilege level.

3
Selects the authentication types for operator privilege level.

4
Selects the authentication types for Admin privilege level.

5
Selects the Per message authentication.

6
Selects User Level Authentication enable.

7
Selects the Access Mode. Values of preboot and shared are only valid for serial channels.

8
Selects the Privilege level limit for the channel.

9
Selects Enable PEF on the specified channel.

none | straight | MD5

Authentication method for callback, user, operator, and admin privilege levels. You can enable multiple authentication methods by separating the possible values with the plus sign.

disabled | preboot | always | shared

Access Mode. Values of preboot and shared are only valid for serial channels.

callback | user | operator | admin

Privilege Level.

enable | disable

Enable or Disable Per Message Authentication, User Level Authentication, and PEF.

Configure the BMC channels. Use this command to change a single parameter (selected by the number 1..9)

Examples:

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

Note: Callback privilege option is not supported for S1200BT and S1400/S1600/S2400/S2600/S4600 series of platforms.
4.4.2  Clear SEL (/csel)

syscfg /csel | /clearSEL

Clears the System Event Log (SEL).

syscfg /csel
syscfg /clearSEL

4.4.3  Date and Time (/dt)

syscfg /dt | /timeofday hh:mm:ss mm/dd/yyyy

On S1400/S1600/S2400/S2600/S4600 platform series the command is

syscfg /dt | /timeofday [BIOS administrator password] hh:mm:ss mm/dd/yyyy

Where:

hh:mm:ss  Hours (24 hour clock), minutes, and seconds.

mm/dd/yyyy  Month, day, and year.

Sets the time of day stored in the Real Time Clock (RTC) by the BIOS.

Example:

syscfg /dt 18:45:00 12/20/2007

On S1400/S1600/S2400/S2600/S4600 platform series.

1. When BIOS administrator password is set and it value is “admin@123”

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

2. When BIOS administrator is not set.

   syscfg /dt "" 18:45:00 08/15/2011

4.4.4  email Alert Configure (/eac)

syscfg (/eac | /emailalertconf) SMTP_Configuratiion_Index {0|1 | 2 | 3 | 4 | 5 | 6 | 7} ASCII_String

Channel number

SMTP_Configuratiion_Index  1 to n. An index into the SMTP configuration table in firmware. The maximum number n depends on the firmware on your server board (refer to your server documentation for details).

{0|1 | 2 | 3 | 4 | 5 | 6 | 7}

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

This is the value for the selected parameter.
Use double quotes ("") to enclose strings that include space characters.
The possible values for these parameters are
Valid LAN Channel

Channel Number

Configures the SMTP Enable/Disable From, To, Subject, SMTP User Name, User Password, Server Address and Message Content lines in the firmware email alerting SMTP configuration table.

Example:
```
syscfg /eac 1 1 server2@companyyx.com
```

### 4.4.5 email Alert Enable (/eae)

**syscfg** `{/eae | /emailalertenable} {Sender_Name Channel_Number}`

Sender_Name

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

Example:
```
syscfg /eae dupont01 3
```

### 4.4.6 help (/h)

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

Displays help in the specified area.

**Note:** In Linux*, to use the /? option, you must enclose it in double quotes.

Displays help on the system configuration utility.
Examples:

```
syscfg /h lan
syscfg /? power
```
4.4.7 LAN Alert Configuration (/lac)

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

- **Channel_ID**: IPMI Channel number.
- **Alert_Destination_Index**: Index into the Alert Destination table.
- **Alert_Destination_IP_Address**: 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.
- **Alert_ID_MAC_Address**: 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.
- **enable | disable**: Backup Gateway state.
- **enable | disable**: Alert Acknowledge state.
- **1..7**: Retry count.
- **1..255**: Retry interval in seconds.
- **SNMP | SMTP**: Alert destination type: SNMP (Simple Network Management Protocol) or SMTP (Simple Mail Transport Protocol). The default is SNMP.

Configures the LAN Alert destinations for a channel. See *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)

```bash
syscfg /lae Channel_ID Gateway_IP_Address {Gateway_MAC_Address | “resolve”} SNMP_Community_String {Backup_Gateway_IP_Address | “resolve”}
```

- **Channel_ID**: IPMI Channel ID
- **Gateway_IP_Address**: Gateway IP Address for the specified LAN channel.
- **Gateway_MAC_Address**: Gateway MAC Address for the specified LAN channel or “resolve” to automatically resolve the MAC Address.
- **SNMP_Community_String**: Enter the SNMP community string, or the null string ("")
**Backup_Gateway_IP_Address**  
Gateway IP Address for the specified LAN channel

**Backup_Gateway_MAC_Address**  
Gateway MAC Address for the specified LAN channel or “resolve”

**Notes:**

- The Gateway_MAC_Address and Backup_Gateway_MAC_Address may optionally be set to “resolve”. If set to “resolve”, syscfg will attempt 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.

- On S1200BT and S1400/S1600/S2400/S2600/S4600 platform series, the “Resolve” option is not supported across different subnets. Also, use of resolve command is not encouraged.

Enables LAN alerting on the specified channel. See *IPMI 2.0 Specification* for more information.

```
syscfg /lae 2 10.110.40.3 03-FE-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)

sysofg {/lc | /lanconf} Channel_ID {2a (none | straight | MD5) | 2b (none | straight | MD5) | 2c (none | straight | MD5) | 2d (none | straight | MD5) | 3 IP_Address | 4 (static | DHCP) | 6 IP_Address | 10 (enable | disable) | 10b (enable | disable) | 11 {0..127500} | 12 IP_Address | 13 MAC_Address | 14 IP_Address | 15 MAC_Address | 16 SNMP_Community_String }

Channel_ID
IPMI Channel ID (LAN channel)

2a
Selects authentication type for callback privilege level. Multiple privilege levels may be specified by using the plus sign (see example below).

2b
Selects authentication type for user privilege level. Multiple privilege levels may be specified by using the plus sign (see example below).

2c
Selects authentication type for operator privilege level. Multiple privilege levels may be specified by using the plus sign (see example below).

2d
Selects authentication type for administrator privilege level. Multiple privilege levels may be specified by using the plus sign (see example below).

3
Selects IP Address for the specified LAN channel. (This is not a valid option when the source is set to DHCP.)

4
Selects source for IP Address

6
Selects subnet mask. (This is not a valid option when the source is set to DHCP.)

10
Enables Gratuitous ARP. The BMC will generate ARP packets at regular intervals. (LAN channels 1 and 2 only.) Not supported on Intel® Server Boards X38MLST and S3200SH.

10b
Enables the BMC to generated ARP responses when an ARP request is received. (LAN channels 1 and 2 only.) ARP responses cannot be disabled on Intel® Server Boards X38MLST and S3200SH.

11
Selects Gratuitous ARP interval in milliseconds (rounded down to a value that is a multiple of 500 ms). (LAN channels 1 and 2 only.) Not supported on Intel® Server Boards X38MLST and S3200SH.

12
Selects Gateway IP Address. (This is not a valid option when the source is set to
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 number listed above (2a, 2b, ... 16) followed by a value. See IPMI 2.0 Specification for more information

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 BMC-generated ARP responses cannot be set to “disable” on S1200BT and S1400/S1600/S2400/S2600/S4600 platform series.
- The Gratuitous ARP is not supported on S1200BT and S1400/S1600/S2400/S2600/S4600 platform series.
- The Gratuitous ARP interval value cannot be set on S1200BT and S1400/S1600/S2400/S2600/S4600 platform series.
- The DHCP Host Name is common for all LAN Channels.
The set DHCP Host name will be used on the next DHCP lease renewal or at the current lease expiration

Example:

```bash
syscfg /lc 1 2b none+straight+md5
syscfg /lc 1 C7 TestDHCPHostName
syscfg /lc 1 102 ENABLE
syscfg /lc 1 103 AUTO
```
4.4.10 LAN Enable (/le)

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

- `Channel_ID`: BMC LAN Channel ID
- `static|dhcp`: IP Address source
- `IP_Address`: IP Address
- `Subnet_Mask`: Subnet mask

Configures the LAN channel used by the BMC on the specified channel. See *IPMI 2.0 Specification* for more information.

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

4.4.11 LAN Failover Mode (/lfo)

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

`ENABLE | ENABLE` Enable or Disable LAN Failover

On S1400/S1600/S2400/S2600/S4600 platform BMC FW provides a LAN failover capability such that the failure of the system HW associated with one LAN link will result in traffic being rerouted to an alternate link.

4.4.12 PEF Configure (/pefc)

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

- `enable|disable`: Global PEF enable.
- `none|alert|pdown|reset|pcycle|diagint`: PEF Action. Enable multiple actions by using a plus sign to concatenate the values. `none` may not be combined with other options. `pdown` means “power down,” `pcycle` means “power cycle,” and `diagint` means “diagnostic interrupt.”

Global enable of the Platform Event Filters used by the BMC. See *IPMI 2.0 Specification*, Chapter 17, for more information on Platform Event Filtering.
Example:

```bash
syscfg /pefc enable alert+pdown+reset+pcycle
```

### 4.4.13 PEF Filter (/peff)

**syscfg {[/peff | /peffilter] Filter_table_index {enable | disable} {none | alert | pdown | reset | pcycle | diagint} {1..15}}**

- **Filter_table_index**: Index into the PEF filter table for a particular filter.
- **enable | disable**: Enable specified filter.
- **none | alert | pdown | reset | pcycle**: PEF Action. Enable multiple actions by using a plus sign to concatenate the values. `none` may not be combined with other options. `pdown` means “power down.” `pcycle` means “power cycle.”
- **1..15**: Policy number. This number maps to the Alert Policy Table. (See also /pefp option.)

Configures the Platform Event Filters used by the BMC on the specified channel. See *IPMI 2.0 Specification*, Chapter 17, for more information on Platform Event Filtering.

Example:

```bash
syscfg /peff 3 enable pdown 1 /peff 4 enable pdown 1
```

### 4.4.14 PEF Policy (/pefp)

**syscfg {[/pefp | /pefpolicy] Policy_table_index {enable | disable} {1.15} {ALWAYS | NEXT_E | STOP | NEXT_C | NEXT_T} Channel_ID Destination_table_index**

- **Policy_table_index**: Policy Table Index
- **enable | disable**: Enable policy
- **1..15**: Policy number
- **ALWAYS | NEXT_E | STOP | NEXT_C | NEXT_T**: Alert Policy:
  - ALWAYS = always send an alert to the destination indicated in the policy table entry specified by argument 1.
  - NEXT_E = if an alert was successfully sent to the previous destination attempted, then do not send an alert to the destination indicated in the policy table entry specified in argument 1, but go to the next policy table entry with the same policy number instead.
  - STOP = if an alert was successfully sent to the
previous destination attempted, then do not send an alert to the destination indicated in the policy table entry specified in argument 1, and do not process any more policy table entries.

NEXT_C = if an alert was successfully sent to the previous destination attempted, do not send an alert to the destination indicated in the policy table entry specified in argument 1, but go to the next policy table entry with the same policy number but that will send an alert on a different channel.

NEXT_T = if an alert was successfully sent to the previous destination attempted, do not send an alert to the destination indicated in the policy table entry specified in argument 1, but go to the next policy table entry with the same policy number but a different destination type.

 Channel_ID
IPMI Channel ID for a BMC channel

 Destination_table_index
Destination Table Index

Configures the Platform Event Filter policy table used by the BMC on the specified channel. See *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)

```
syscfg /prp {off | on | restore}
```

*off | on | restore*  
Power restore policy

Sets the power restore policy. See *IPMI 2.0 Specification*, §28.8, for more information on the Set Power Restore Policy IPMI Command.

Example:

```
syscfg /prp off
```

## 4.4.16 Reset BMC (/rbmc)

```
syscfg /rbmc | resetBMC
```

Resets the Baseboard Management Controller.
Examples:

<table>
<thead>
<tr>
<th>Example</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>syscfg /rbmc</code></td>
<td>Note: This command should be used by itself. Do not issue Syscfg commands for a few seconds (approx 50 sec) after this command to allow the BMC to initialize.</td>
</tr>
</tbody>
</table>

### 4.4.17 Restore Firmware Settings (/rfs)

**syscfg (/rfs | restorefirmwaresettings)**

Restores the factory default Baseboard Management Controller settings.

Example:

<table>
<thead>
<tr>
<th>Example</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>syscfg /rfs</code></td>
<td>Note: This command should be used by itself. Do not issue Syscfg commands for a few seconds (approx 50 sec) after this command to allow the BMC to initialize. After a few seconds, follow this command with the Reset BMC or AC Power Cycle. Unpredictable operation may occur if you do not reset the BMC after this command.</td>
</tr>
</tbody>
</table>

### 4.4.18 Reset Node Manager (/rnm)

**syscfg (/rnm | resetnodemanager)**

Resets the Node Manager (NM).

Node Manager (NM) provides a mechanism for the customer to configure multiple power policies on a platform. These policies can have a defined action to “shutdown” the platform. If the customer configures a power policy that performs a “shutdown” and the power threshold is set too low, the platform will 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.

Example:

<table>
<thead>
<tr>
<th>Example</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>syscfg /rnm or syscfg /resetnodemanager</code></td>
<td></td>
</tr>
</tbody>
</table>

### 4.4.19 Serial Over LAN (/sole)

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

- **Channel_ID**: IPMI Channel ID
- **enable | disable**: SOL enable
- **user | operator | admin**: Privilege Level Limit


<table>
<thead>
<tr>
<th>Baud Rate</th>
<th>Retry count</th>
<th>Retry interval in milliseconds, rounded to the nearest 10 ms</th>
</tr>
</thead>
<tbody>
<tr>
<td>9600</td>
<td>0..7</td>
<td></td>
</tr>
<tr>
<td>19200</td>
<td>0..2550</td>
<td></td>
</tr>
<tr>
<td>38400</td>
<td></td>
<td></td>
</tr>
<tr>
<td>115200</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Enables Serial Over LAN (SOL) on the specified LAN channel. See *IPMI 2.0 Specification*, Chapter 26, for more information on IPMI SOL commands.

Example:

```
syscfg /sole 1 Enable Operator 19200 6 200
```

On S1400/S1600/S2400/S2600/S4600 platform series Serial Baud Rate is not supported.

Example:

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

### 4.4.20 Save BMC debug log

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

- **Public / Private**
  - Regular System Diagnostics or Intel System Diagnostics
- **Filename**
  - Name of the file to save the BMC diagnostics data, the extension should be .zip or .ZIP

On S1400/S1600/S2400/S2600/S4600 platform series SysCfg utility provides an option to save BMC debug log to a ZIP file for system diagnostics purpose.

### 4.4.21 Users (/u)

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

- **User_ID**
  - 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.
- **User_name**
  - BMC User name consisting of up to 16 ASCII characters in the range 0x21 to 0x7e, except “[” and “]”. Use “” to leave user name as
Sets the user name and password for the specified BMC user. See *IPMI 2.0 Specification* for more information on user passwords.

**Note:**

- The user names for User 1 (NULL) and User 2 (Root) cannot be changed on Intel® S1200BT and S1400/S1600/S2400/S2600/S4600 platform series.
- Duplicate user names are not supported on Intel® S1200BT and S1400/S1600/S2400/S2600/S4600 platform series.

Examples:

```plaintext
syscfg /u 3 BobT gofps
syscfg /u 2 "" ""
```
4.4.22 User Enable (/ue)

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

- **User_ID**: 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.
- **enable | disable**: Enable or disable the specified user
- **Channel_ID**: IPMI Channel ID

Enables or disables the BMC user on the specified BMC channel. See *IPMI 2.0 Specification* for more information on user configuration settings.

Example:
```
syscfg /ue 3 enable 1
```

4.4.23 User Privilege (/up)

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

- **User_ID**: BMC user ID.
- **Channel_ID**: BMC channel number.
- **callback | user | operator | admin | none**: IPMI privilege level. Privilege level “none” is not supported on Intel® Server Boards X38MLST, S3200SH, S55XX and S3420GP.
- **SOL | KVM | SOL+KVM**: Specifies the type of payload: Serial Over LAN, KVM, or both.

Enables or disables the BMC user on the specified BMC channel. See *IPMI 2.0 Specification* for more information on user privilege levels.

**Notes:**

- User 2 (Root) privileges cannot be changed on Intel® S1200BT and S1400/S1600/S2400/S2600/S4600 platform series.
- Privilege level “none” is not supported on Intel® S1200BT and S1400/S1600/S2400/S2600/S4600 platform series.
- Maximum five users will be supported by the utility irrespective of number of users support in the FW

Examples:
```
syscfg /up 1 1 admin
syscfg /up 1 1 admin sol
```
## Appendix A: IPMI Channel Assignments

The following table lists the Intel® Server Boards and their corresponding IPMI Channel assignments:

<table>
<thead>
<tr>
<th>Server Board</th>
<th>IPMI Channel Assignment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intel® S1200BT platform series</td>
<td>Channel 1: Baseboard LAN Channel A</td>
</tr>
<tr>
<td></td>
<td>Channel 3: Optional Intel® RMM NIC</td>
</tr>
<tr>
<td>Intel® Server Board S1400</td>
<td>Channel 1: Baseboard LAN Channel</td>
</tr>
<tr>
<td>Intel® Server Board S1600</td>
<td>Channel 2: Baseboard LAN Channel</td>
</tr>
<tr>
<td>Intel® Server Board S2400</td>
<td>Channel 3: Optional Intel® RMM4 NIC</td>
</tr>
<tr>
<td>Intel® Server Board S2600</td>
<td></td>
</tr>
<tr>
<td>Intel® Server Board S4600</td>
<td></td>
</tr>
</tbody>
</table>
Appendix B: Saved Firmware Settings

This section describes firmware settings that are saved and restored with syscfg in binary and INI formats.

Binary Format

The following table 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 Settings</td>
<td>Power Restore Policy</td>
</tr>
<tr>
<td>LAN Channel Settings</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></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>
</tbody>
</table>

Note:

On S1200BT and S1400/S1600/S2400/S2600/S4600 Platform series Save and Restore of Host IP, Subnet Mask, Default Gateway IP and Backup Gateway IP is not supported.

<table>
<thead>
<tr>
<th>LAN Alert Settings†</th>
<th>Alert Acknowledge Enabled</th>
</tr>
</thead>
<tbody>
<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>Component</td>
<td>Setting</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>-------------------------------------------------------------------------</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></td>
<td>Event Filters</td>
</tr>
<tr>
<td></td>
<td>Alert Policies</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: On S1400, S1600, S2400, S2600 and S4600 platform series SOL Baud Rate is not supported.
Example of INI File

Instructions for using 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 will be available – only those that are required for the user to configure
- The section headers are generated automatically depending on the platform and 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.x032.0725201111118 ; 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
PrivilegeChl1=ADMIN                                 ; Options: User,
Operator, Admin, NoAccess
UserAccessCh1=DISABLE                                ; Options: Enable or
Disable
SOLEnableCh1=ENABLE                                 ; Options: Enable or
Disable
PrivilegeChl2=ADMIN                                 ; Options: User,
Operator, Admin, NoAccess
UserAccessCh2=DISABLE                                ; Options: Enable or
Disable
SOLEnableCh2=ENABLE                                 ; Options: Enable or
Disable
PrivilegeChl3=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
PrivilegeChl1=ADMIN                                 ; This field should not
be edited
UserAccessCh1=ENABLE                                ; This field should not
be edited
SOLEnableCh1=ENABLE                                 ; This field should not
be edited
PrivilegeChl2=ADMIN                                 ; This field should not
be edited
UserAccessCh2=ENABLE                                ; This field should not
be edited
SOLEnableCh2=ENABLE                                 ; This field should not
be edited
PrivilegeChl3=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
PrivilegeChl1=ADMIN                                 ; Options: User,
Operator, Admin, NoAccess
UserAccessCh1=DISABLE ; Options: Enable or Disable
SOLEnableCh1=ENABLE ; Options: Enable or Disable
PrivilegeCh2=ADMIN, Operator, Admin, NoAccess
UserAccessCh2=DISABLE ; Options: Enable or Disable
SOLEnableCh2=ENABLE ; Options: Enable or Disable
PrivilegeCh3=ADMIN, Operator, Admin, NoAccess
UserAccessCh3=DISABLE ; Options: Enable or Disable
SOLEnableCh3=ENABLE ; 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, Operator, Admin, NoAccess
UserAccessCh1=DISABLE ; Options: Enable or Disable
SOLEnableCh1=ENABLE ; Options: Enable or Disable
PrivilegeCh2=ADMIN, Operator, Admin, NoAccess
UserAccessCh2=DISABLE ; Options: Enable or Disable
SOLEnableCh2=ENABLE ; Options: Enable or Disable
PrivilegeCh3=ADMIN, 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, Operator, Admin, NoAccess
UserAccessCh1=DISABLE ; Options: Enable or Disable
SOLEnableCh1=ENABLE ; Options: Enable or Disable
PrivilegeCh2=ADMIN, Operator, Admin, NoAccess
UserAccessCh2=DISABLE ; Options: Enable or Disable
SOLEnableCh2=ENABLE ; Options: Enable or Disable
PrivilegeCh3=ADMIN, Operator, Admin, NoAccess
UserAccessCh3=DISABLE ; Options: Enable or Disable
SOLEnableCh3=ENABLE ; Options: Enable or Disable
SOLEnableCh1=ENABLE ; Options: Enable or Disable
PrivilegeCh12=ADMIN ; Options: User, Operator, Admin, NoAccess
UserAccessCh12=DISABLE ; Options: Enable or Disable
SOLEnableCh2=ENABLE ; Options: Enable or Disable
PrivilegeCh13=ADMIN ; Options: User, Operator, Admin, NoAccess
UserAccessCh13=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
DHCPPHostName=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
ARPRole=ENABLE ; Options: Enable, Disable
ARPIpInterval=0 ; Decimal value between 0 & 255. This value 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 ; This field should not be edited
SubnetMask=0.0.0.0 ; This field should not be edited
GatewayIP=0.0.0.0 ; This field should not be edited
GatewayMAC=00-00-00-00-00-00 ; This field should not be edited
BackupGatewayIP=0.0.0.0 ; This field should not be edited
BackupGatewayMAC=00-00-00-00-00-00 ; This field should not be edited
IPV6Status=DISABLE ; Options: Enable or Disable
AlertIP0=0.0.0.0 ; In xxx.xxx.xxx.xxx form
AlertMAC0=00-00-00-00-00-00 ; In xx-xx-xx-xx-xx-xx form
AlertIP1=0.0.0.0 ; In xxx.xxx.xxx.xxx form
AlertMAC1=00-00-00-00-00-00 ; In xx-xx-xx-xx-xx-xx form

[CHANNEL::LAN2]
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 ; This field should not be edited
SubnetMask=0.0.0.0 ; This field should not be edited
GatewayIP=0.0.0.0 ; This field should not be edited
GatewayMAC=00-00-00-00-00-00 ; This field should not be edited
BackupGatewayIP=0.0.0.0 ; This field should not be edited
BackupGatewayMAC=00-00-00-00-00-00 ; This field should not be edited
IPV6Status=DISABLE ; Options: Enable or Disable
AlertIP0=0.0.0.0 ; In xxx.xxx.xxx.xxx form
AlertMAC0=00-00-00-00-00-00 ; In xx-xx-xx-xx-xx-xx form
AlertIP1=0.0.0.0 ; In xxx.xxx.xxx.xxx form
AlertMAC1=00-00-00-00-00-00 ; In xx-xx-xx-xx-xx-xx form

[CHANNEL::LAN3]
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 value 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 ; This field should not be edited
SubnetMask=0.0.0.0 ; This field should not be edited
GatewayIP=0.0.0.0 ; This field should not be edited
GatewayMAC=00-00-00-00-00-00 ; This field should not be edited
BackupGatewayIP=0.0.0.0 ; This field should not be edited
BackupGatewayMAC=00-00-00-00-00-00 ; This field should not be edited
IPV6Status=DISABLE ; Options: Enable or Disable
AlertIP0=0.0.0.0 ; In xxx.xxx.xxx.xxx form
AlertMAC0=00-00-00-00-00-00 ; In xx-xx-xx-xx-xx-xx form
AlertIP1=0.0.0.0 ; In xxx.xxx.xxx.xxx form
AlertMAC1=00-00-00-00-00-00 ; In xx-xx-xx-xx-xx-xx form

[CHANNEL::LAN1::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
[CHANNEL::LAN2::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

[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
toAddress= ; ASCII printable
toAddress= ; ASCII printable
Subject= ; ASCII printable
SMTPUserName= ; ASCII printable
Message= ; ASCII printable
ServerAddress=0.0.0.0 ; In xxx.xxx.xxx.xxx
form

[EMAILCONFIG::CHANNEL3::INFO]
SenderName= ; ASCII printable
FromAddress= ; ASCII printable
toAddress= ; ASCII printable
Subject= ; ASCII printable
SMTPUserName= ; ASCII printable
Message= ; ASCII printable
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: 2=1067: 3=1333: 1=800: 0=Auto
Phase Shedding=1                                   ;Options: 1=Auto: 0=Disabled
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                                     ;Options: 0=Disabled: 1=Enabled
PCCT Support=0                                     ;Options: 0=Disabled: 1=Enabled
ECC Support=1                                      ;Options: 0=Disabled: 1=Enabled
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:
l=Enabled
Battery Back Ch 3=1 ;Options: 0=Disabled:
l=Enabled
Check PCH_PM_STS=0 ;Options: 0=Disabled:
l=Enabled
Check PlatformDetectADR=1 ;Options: 0=Disabled:
l=Enabled
Patrol Scrub=1 ;Options: 0=Disabled:
l=Enabled
Demand Scrub=1 ;Options: 0=Disabled:
l=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:
l=Enabled
Memory Mapped I/O above 4GB=0 ;Options: 0=Disabled:
l=Enabled
Onboard Video=1 ;Options: 0=Disabled:
l=Enabled
Dual Monitor Video=0 ;Options: 0=Disabled:
l=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:
l=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:
l=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:
l=Enabled
Legacy USB Support=0 ;Options: 2=Auto:
l=Disabled: 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: 1=20 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 ;Options: 1=COM0: 2=COM1:
3=COM2 (Disabled): 4=COM3 (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
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