



# Intel® System Configuration Utility

## User Guide

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*Syscfg Version 11.0/12.0/13.0*

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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, 11.0, and 12.0 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® Server Board S1200V3RP
- 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
- Intel® Server Board S2600 (Intel® Xeon® processor E5-2600 v3)

**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 1. Operating Systems Supported**

Platforms	System Configuration Utility Version	Operating Systems / Preboot Environment Supported
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	12.0	Windows Server 2008* Enterprise (IA32) Windows Server 2008* R2 Enterprise (EM64T) Windows Server 2012* Enterprise

Platforms	System Configuration Utility Version	Operating Systems / Preboot Environment Supported
		Windows 7* (IA32 & EM64T) FOR Workstation Server Platforms Windows 8* (IA32 & EM64Tia32 AND EM64T) FOR Workstation Server Platforms Windows PE 3.0* (IA32 & EM64T) RHEL6* Update 1 (IA32 & EM64T) RHEL6* Update 2 (IA32 & EM64T) RHEL6* Update 3 (IA32 & EM64T) RHEL6* Update 4 (IA32 & EM64T) SLES11* SP1 (IA32 & EM64T) SLES11* SP2 (IA32 & EM64T)
Intel® Server Board S1200V3RP	12.0	Windows Server 2008* R2 SP1 x64 Windows Server 2012* Enterprise WinPE 3.x/4.x* (IA32 & EM64T) RHEL6* Update 4 (IA32 & EM64T) CentOS* 6.x (32 bit & EM64T) SLES11* SP2 (IA32 & EM64T)
Intel® Server Board S2600 with Intel® Xeon® processor E5-2600 v3	13.0	UEFI 2.3.1 Windows Server 2012* R2 EM64T Windows Server 2012* Enterprise Windows Server 2008* R2 SP1 EM64T Windows 7* (32 bit & EM64T) WinPE 3.x/4.x* (32 bit & EM64T) RHEL6* update1/update2/update3/update4/update5 (32 bit & EM64T) CentOS* 6.x (32 bit & EM64T) SLES* 11 SP1/SP2/SP3 (32 bit & EM64T)

**Note:** SysCfg version or build may be different across different platforms. Download the supported SysCfg version and build for your platform from Intel support website. Also refer to the 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](http://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 2. Terminology**

<b>Term</b>	<b>Definition</b>
ACPI	Advanced Configuration and Power Interface
AES	Advanced Encryption Standard
AMB	Advanced Memory Buffer (there is an AMB on each FBDIMM)
APIC	Advanced Programmable Interrupt Controller
ARP	Address Resolution Protocol
ASF	Alert Standards Forum
ASIC	Application specific integrated circuit
BIST	Built-in self test
BMC	Baseboard management controller
Bridge	Circuitry connecting one computer bus to another, allowing an agent on one to access the other.
BSP	Bootstrap processor
CBC	Chassis bridge controller. A microcontroller connected to one or more other CBCs. Together they bridge the IPMB buses of multiple chassis.
CLI	Command-line interface
CLTT	Closed-loop thermal throttling (memory throttling mode)
CMOS	In terms of this specification, this describes the PC-AT compatible region of battery-backed 128 bytes of memory on the server board.
CSR	Control and status register
D-cache	Data cache. Processor-local cache dedicated for memory locations explicitly loaded and stored by running code.
DHCP	Dynamic Host Configuration Protocol
DIB	Device Information Block
DPC	Direct Platform Control
EEPROM	Electrically erasable programmable read-only memory
EMP	Emergency management port
FML	Fast management link
FNI	Fast management link network interface
FRB	Fault resilient booting
FRU	Field replaceable unit
FSB	Front side bus
FTM	Firmware transfer mode
GPIO	General-purpose input/output
HSBP	Hot-swap backplane
HSC	Hot-swap controller
I-cache	Instruction cache. Processor-local cache dedicated for memory locations retrieved through instruction fetch operations.
I2C	Inter-integrated circuit bus

Term	Definition
IA	Intel® architecture
IBF	Input buffer
ICH	I/O controller hub
IERR	Internal error
INIT	Initialization signal
IPMB	Intelligent Platform Management Bus
IPMI	Intelligent Platform Management Interface
ITP	In-target probe
KCS	Keyboard controller style
KT	Keyboard text
KVM	Keyboard, video, mouse
LAN	Local area network
LCD	Liquid crystal display
LPC	Low pin count
LUN	Logical unit number
MAC	Media Access Control
MD5	Message Digest 5. A hashing algorithm that provides higher security than MD2.
MIB	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.
ms	Millisecond
MUX	Multiplexer
NIC	Network interface card
NMI	Non-maskable interrupt
OBF	Output buffer
OEM	Original equipment manufacturer
OLTT	Open-loop thermal throttling (memory throttling mode)
PCI	Peripheral Component Interconnect
PECI	Platform Environmental Control Interface
PEF	Platform event filtering
PET	Platform event trap
PIA	Platform information area
PLD	Programmable logic device
POST	Power-on self-test
PROM	Programmable read-only memory
PSMI	Power Supply Management Interface
PWM	Pulse Width Modulation. The mechanism used to control the speed of system fans.
RAM	Random Access Memory

Term	Definition
RAS	Reliability, availability, and serviceability
RC4	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.
RMCP+	Remote Management Control Protocol
ROM	Read-only memory
RTC	Real-time clock
SCI	System Control Interrupt. A system interrupt used by hardware to notify the operating system of ACPI events.
SDR	Sensor data record
SDRAM	Synchronous dynamic random access memory
SEL	System event log
SHA1	Secure Hash Algorithm 1
SMBus	A two-wire interface based on the I <sup>2</sup> C protocol. The SMBus is a low-speed bus that provides positive addressing for devices and bus arbitration.
SMI	Server Management Interrupt. SMI is the highest priority non-maskable interrupt.
SMM	Server management mode
SMS	Server management software
SNMP	Simple Network Management Protocol
SOL	Serial-over-LAN
SPT	Straight pass-through
SRAM	Static random access memory
UART	Universal asynchronous receiver and transmitter
UDP	User Datagram Protocol
UHCI	Universal Host Controller Interface
VLAN	Virtual local area network

## 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/>.

## 2 Using the Intel® System Configuration Utility

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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 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

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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 the file to get the syscfg binaries. Run "chmod 755" to change executable and execute the syscfg commands.
  - c. To uninstall syscfg, 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 (in Linux/RHEL or Linux/SLES) to a local folder.
  - b. Install syscfg utility by using `rpm -Uvh syscfgxx.rpm`. This will install the utility in `/usr/bin/syscfg/`.
  - c. 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`).
  - d. To uninstall syscfg, execute the following 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, 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 (for example, `C:\syscfg`).
- b. Unzip the zip file.
- c. The following folders contain windows binaries and drivers in `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 the 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, do the following:
  - Delete the contents of the directory where the utility is installed.
  - Manually uninstall the 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
```

The file 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 will be `INI`. So if you neither provide file type nor filename, the default filename will be `syscfg.INI`.

## 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 /b
```

In Linux\*, type:

```
./syscfg /r filename /b
```

4. On S1200V3RP, S1400, S1600, S2400, S2600, S4600, and S2600 with Intel® Xeon® processor E5-2600 v3 platform series, the BIOS administrator password must be supplied.

- a. If the BIOS administrator password is set

In Windows\*, Windows Pre-installation Environment\*, or EFI, type:

```
syscfg /r filename /b /bap <BIOS administrator password>
```

In Linux\*, type:

```
./syscfg /r filename /b /bap <BIOS administrator password>
```

- b. If the BIOS administrator password is not set

In Windows\*, Windows Pre-installation Environment\*, or EFI, type:

```
syscfg /r filename /b
```

In Linux\*, type:

```
./syscfg /r filename /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/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.

Generic Commands/ Switches	BIOS Commands	Firmware Commands			
		Channel Commands	LAN Commands	PEF Commands	User Commands
<a href="#">/d</a> Display <a href="#">/i</a> Information <a href="#">/q</a> Quiet Mode switch <a href="#">/r</a> Restore <a href="#">/s</a> Save	<a href="#">/bap</a> BIOS Administrator Password <a href="#">/bup</a> BIOS User Password <a href="#">/bbosys</a> System Boot Order <a href="#">/bbo</a> System Boot Order in detail <a href="#">/bcs</a> BIOS Configure Setting <a href="#">/bldfs</a> BIOS Load Default Factory Settings <a href="#">/bvar</a> This command creates a new UEFI variable	<a href="#">/c</a> Channels <a href="#">/cse</a> Clear SEL <a href="#">/dt</a> Date and Time <a href="#">/eac</a> Email Alert Configuration <a href="#">/eae</a> Email Alert Enable <a href="#">/h</a> Help	<a href="#">/lac</a> LAN Alert Configuration <a href="#">/lae</a> LAN Alert Enable <a href="#">/lc</a> LAN Configuration <a href="#">/le</a> LAN Enable <a href="#">/lfo</a> LAN Failover	<a href="#">/pefc</a> PEF Configure <a href="#">/peff</a> PEF Filter <a href="#">/pefp</a> PEF Policy <a href="#">/prp</a> Power Restore Policy <a href="#">/rbmc</a> Reset BMC <a href="#">/rfs</a> Restore firmware settings <a href="#">/rnm</a> Reset Node Manager <a href="#">/sbmcdl</a> Save BMC debug log	<a href="#">/u</a> Users <a href="#">/ue</a> User Enable <a href="#">/up</a> User privilege

## 4.2 Generic Commands/Switches

### 4.2.1 Information (/i)

**syscfg /i** [*filename.INI*] or **syscfg /i** [*filename.INI*]

*Filename*

File name for a System Configuration File (.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
```

### 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.

**/q**

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

Suppress all messages.

Example:

```
syscfg /r /f /b /q
```

### 4.2.3 Restore (/r)

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

*Filename*

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

Examples:

```
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 saved.ini /f
syscfg /r myscfg.ini /b /bap kwqt128
```

Notes:

- One or both of the /b and /f options are required.
- If the BIOS Administrator password is set, you must use the /bap command to enter the password.

## 4.2.4 Save (/s)

**syscfg /s [filename.INI] [/f | /b | /f /b] or syscfg /s [filename.INI] [/f | /b | /f /b]**

*Filename*

File name to be used for the syscfg configuration file (.INI) in the current working directory. If no filename is specified, the default file name `syscfg.INI` is used based on the parameter supplied explained in the example below. The filename suffix must be `.INI`; if omitted, syscfg will add the `.INI` 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 an INI file.

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:

- 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 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 S1200BT, S1200V3RP, S1400/S1600/S2400/S2600/S4600 and S2600 with Intel® Xeon® processor E5-2600 v3 platform series.

## 4.2.5 Display (/d)

**syscfg /d** {**CHANNEL** *Channel\_ID* | **BIOS** | **BIOSSETTINGS** *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	Displays the BMC Channel configuration for the specified channel.
<i>Channel_ID</i>	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 of the BIOS settings. The arguments that follow this keyword are used to select the BIOS settings to display.
<i>BIOS_Setting_Name</i>	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.
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.
<i>Channel_ID</i>	IPMI Channel ID.
<i>LAN_Alert_Destination_Index</i>	Enter the LAN Alert Destination Index.
<i>Filter_Table_Index</i>	Enter the Filter Table Index.
<i>Policy_Table_Index</i>	Enter the PEF Policy Table Index.
<i>User_ID</i>	Enter an integer between 1 and <i>n</i> , where <i>n</i> 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.
<i>Channel_ID</i>	IPMI Channel ID.
<i>User_ID</i>	BMC User ID. When used with the FWADVCFG keyword, the configuration information is displayed for the user.
<i>SMTP_Configuration_Index</i>	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 "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

S1200V3RP/S1400/S1600/S2400/S2600/S4600 and S2600 with Intel® Xeon® processor E5-2600 v3 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 the following special characters

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

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

Set or clear 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 S1200V3RP/S1400/S1600/S2400/S2600/S4600 and S2600 with Intel® Xeon® processor E5-2600 v3 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 lqts284
syscfg /bap "" lqts284 /bup "" kwm93a3
```

On S1200V3RP/S1400/S1600/S2400/S2600/S4600 and S2600 with Intel® Xeon® processor E5-2600 v3 platform series

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

#### Notes:

- The Set BIOS User Password (/bup) option (described in the following section) can only be used if the system has a valid Administrator password set. Clearing the BIOS Administrator password will also clear the User password.
- On Intel® S1200V3RP Series Server Boards, the maximum length of password is 14 characters.

## 4.3.2 BIOS User Password (/bup)

**syscfg /bup** {*old\_password* | ""} [*new\_password* | ""]

On S1200V3RP/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 S1200V3RP/S1400/S1600/S2400/S2600/S4600 and S2600 with Intel® Xeon® processor E5-2600 v3 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 the following special characters

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

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

Set or clear 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 S1200V3RP/S1400/S1600/S2400/S2600/S4600 and S2600 with Intel® Xeon® processor E5-2600 v3 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 S1200V3RP/S1400/S1600/S2400/S2600/S4600 and S2600 with Intel® Xeon® processor E5-2600 v3 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)
```

#### Notes:

- 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.
- On S1200V3RP/S1400/S1600/S2400/S2600/S4600 platform series User password cannot be the same as administrator password.
- On Intel® S1200V3RP Series Server Boards, the maximum length of password is 14 characters.

### 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 S1200V3RP/S1400/S1600/S2400/S2600/S4600 and S2600 with Intel® Xeon® processor E5-2600 v3 platform series, to set the BIOS boot order, the administrator password should be provided as explained below.

1. When the BIOS administrator password is set and its value is "admin@123"

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

2. When the 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

```
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

```
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 S1200V3RP/S1400/S1600/S2400/S2600/S4600 and S2600 with Intel® Xeon® processor E5-2600 v3 platform series, to set the detailed system boot order, the administrator password should be provided as explained below.

```
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 IPMI spec. Otherwise an immediate display command using /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 (/bcs)

**syscfg /bcs** [*BIOS\_Group\_Name*] *BIOS\_Setting\_Name* *Value* [*BIOS\_Setting\_Name* *Value* [...]]

On S1200V3RP/S1400/S1600/S2400/S2600/S4600 and S2600 with Intel® Xeon® processor E5-2600 v3 platform series the command is

**syscfg /bcs** [*BIOS administrator password*] [*BIOS\_Group\_Name*] *BIOS\_Setting\_Name* *Value* [*BIOS\_Setting\_Name* *Value* [...]]

<i>BIOS_Setting_Name</i>	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.
<i>BIOS_Group_Name</i>	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.
<i>Value</i>	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 S1200V3RP/S1400/S1600/S2400/S2600/S4600 platform series

1. When the BIOS administrator password is set and its 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 the 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"
```

#### Notes:

- Intel® S1200BT, S1200V3RP, 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`.
- Intel® S1200V3RP and S2600 with Intel® Xeon® processor E5-2600 v3 Series Server Boards utility does not support group setting any more.

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

### **syscfg /bldfs**

On S1200V3RP/S1400/S1600/S2400/S2600/S4600 and S2600 with Intel® Xeon® processor E5-2600 v3 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.

The `/bldfs` option requires a reboot to reset the default settings. Any changes to the BIOS together with `/bldfs` will be ignored after reboot.

Examples:

```
syscfg /bldfs
```

On S1200V3RP/S1400/S1600/S2400/S2600/S4600 and S2600 with Intel® Xeon® processor E5-2600 v3 platform series

1. When the BIOS administrator password is set and its value is "admin@123"

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

2. When the BIOS administrator is not set

```
syscfg /bldfs ""
```

## 4.3.7 BIOS Variable (/bvar)

### syscfg /bvar

On S1200V3RP/S1400/S1600/S2400/S2600/S4600 and S2600 with Intel® Xeon® processor E5-2600 v3 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 table. The command is supported for Linux\*, Windows\* and UEFI environment.

Command	Description
/bvar create	<p>This command creates a new EFI variable. The parameters that "create" command takes are as follows:</p> <ul style="list-style-type: none"><li>• Name: Name of the EFI variable that to be created</li><li>• GUID: GUID of the EFI variables</li><li>• Data: Data for the variable</li><li>• Attributes: Attribute is optional while creating; if not provided it will take an attribute value of 7.</li></ul> <p>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 already exists, the utility will provide an appropriate message.</p>
/bvar overwrite	<p>This command will overwrite the data value of an existing EFI variable. Following are the parameters passed to this command:</p> <ul style="list-style-type: none"><li>• Name: Name of the existing variable</li><li>• GUID: Optional. However, if the name is not unique, the utility will provide a message for providing GUID as an additional parameter.</li><li>• Data: Data to be overwritten</li></ul>
/bvar delete	<p>This command will delete an existing EFI variable. The parameters passed are as follows:</p>

- 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 attributes 0, 1, 2, 4, 5, and 6 are not supported with this switch.
- The supported attributes are 3 and 7.

Attributes	Description
3	Non-Volatile(NV) + Boot Service Access(BS)
7	Non-Volatile(NV) + Boot Service Access(BS) + Real Time(RT)

#### 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 S1200V3RP/S1400/S1600/S2400/S2600/S4600 and S2600 with Intel® Xeon® processor E5-2600 v3 platform series

1. When the BIOS administrator password is set and its 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
syscfg /bvar "admin@123" overwrite testvar testvarnewdata
syscfg /bvar "admin@123" delete testvar
```

2. 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
```

## 4.4 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} }]**

<i>Channel_ID</i>	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 <code>preboot</code> and <code>shared</code> are only valid for serial channels.
8	Selects the Privilege level limit for the channel.
9	Selects Enable PEF on the specified channel.
<code>none   straight   MD5</code>	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.
<code>disabled   preboot   always   shared</code>	Access Mode. Values of <code>preboot</code> and <code>shared</code> are only valid for serial channels.
<code>callback   user   operator   admin</code>	Privilege Level.
<code>enable   disable</code>	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
```

#### Notes:

- Callback privilege option is not supported for S1200BT, S1200V3RP, and S1400/S1600/S2400/S2600/S4600 series of platforms.
- Intel® S1200V3RP and S2600 with Intel® Xeon® processor E5-2600 v3 Series Server Boards utility does not support serial channels configuration.
- The channel configuration parameter of "None" is not supported for S1200RP, S1400/S1600/S2400/S2600/S4600, and S2600 with Intel® Xeon® processor E5-2600 v3 platform series.

## 4.4.2 Clear SEL (/csel)

**syscfg {/csel | /clearSEL}**

Clear 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 S1200V3RP/S1400/S1600/S2400/S2600/S4600 and S2600 with Intel® Xeon® processor E5-2600 v3 platform series the command is

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

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

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

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

Example:

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

On S1200V3RP/S1400/S1600/S2400/S2600/S4600 and S2600 with Intel® Xeon® processor E5-2600 v3 platform series

1. When the BIOS administrator password is set and its 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\_Configuration\_Index {0|1 | 2 | 3 | 4 | 5 | 6 | 7} ASCII\_String Channel\_number**

*SMTP\_Configuration\_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

*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.

Configure 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 1
```

## 4.4.5 Email Alert Enable (/eae)

**syscfg {/eae | /emailalertenable} Sender\_Name Channel\_Number**

*Sender\_Name* Sender machine name. This string identifies the managed server to the SMTP server.

*Channel\_Number* Valid LAN channel number.

Set 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}

lan | user | pef | sol | power | channel | system | fwadvcfg | bios      Displays help in the specified area.

Display help on the system configuration utility.

Examples:

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

### Notes:

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

## 4.4.7 LAN Alert Configuration (/lac)

**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}

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: <i>n.n.n.n</i> , where <i>n</i> is a number between 0 and 255.
Alert_ID_MAC_Address	MAC address of the alert destination in the hexadecimal format separated by hyphens: <i>hh-hh-hh-hh-hh-hh</i> , where <i>h</i> 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.

Configure the LAN Alert destinations for a channel. See *IPMI 2.0 Specification* for more information.

Example:

```
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)

**syscfg {/lae | /lanalertenable} Channel\_ID Gateway\_IP\_Address {Gateway\_MAC\_Address | "resolve"} SNMP\_Community\_String [Backup\_Gateway\_IP\_Address {Backup\_Gateway\_MAC\_Address | "resolve"}]**

<i>Channel_ID</i>	IPMI Channel ID.
<i>Gateway_IP_Address</i>	Gateway IP Address for the specified LAN channel.
<i>Gateway_MAC_Address</i>	Gateway MAC Address for the specified LAN channel or "resolve" to automatically resolve the MAC Address.
<i>SNMP_Community_String</i>	Enter the SNMP community string, or the null string ("").
<i>Backup_Gateway_IP_Address</i>	Gateway IP Address for the specified LAN channel.
<i>Backup_Gateway_MAC_Address</i>	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, S1200V3RP, S1400/S1600/S2400/S2600/S4600, and S2600 with Intel® Xeon® processor E5-2600 v3 platform series, the "resolve" option is not supported across different subnets. Also, use of resolve command is not encouraged.

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

Examples:

```
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)

**syscfg {/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}**

<i>Channel_ID</i>	IPMI Channel ID (LAN channel).
<i>2a</i>	Selects authentication type for callback privilege level. Multiple privilege levels may be specified by using the plus sign (see examples below).

2b	Selects authentication type for user privilege level. Multiple privilege levels may be specified by using the plus sign (see examples below).
2c	Selects authentication type for operator privilege level. Multiple privilege levels may be specified by using the plus sign (see examples below).
2d	Selects authentication type for administrator privilege level. Multiple privilege levels may be specified by using the plus sign (see examples 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 DHCP.)
13	Selects Gateway MAC Address.
14	Selects Backup Gateway IP Address.
15	Selects Backup Gateway MAC Address.
16	Selects Community String.
C7	Up to a 64-byte ASCII string (printable characters in the range 0x21 to 0x7e) DHCP Host Name String.
102	IPV6 Enable. Use Enable or Disable to Enable/Disable "IPV6 Enable" parameter.
103	Selects source for IPV6 IP Address. Values to be used are STATIC, DHCPV6, and AUTO.
104	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
105	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.
106	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

Configure 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 S1200V3RP/S1400/S1600/S2400/S2600/S4600 platform series.
- The Gratuitous ARP interval value cannot be set on S1200BT and S1200V3RP/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.

Examples:

```
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

Configure 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 S1200V3RP/S1400/S1600/S2400/S2600/S4600 and S2600 with Intel® Xeon® processor E5-2600 v3 platform BMC FW provides a LAN failover capability so 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:

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

**Note:** Intel® S1200V3RP Series Server Boards utility does not support diagint option.

## 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.

<code>none   alert   pdown   reset   pcycle</code>	PEF Action. Enable multiple actions by using a plus sign to concatenate the values. <code>none</code> may not be combined with other options. <code>pdown</code> means "power down." <code>pcycle</code> means "power cycle."
<code>1..15</code>	Policy number. This number maps to the Alert Policy Table. (See also <code>/pefp</code> option.)

Configure 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:

```
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***

<i>Policy_table_index</i>	Policy Table Index
<code>enable   disable</code>	Enable policy
<code>1..15</code>	Policy number
<code>ALWAYS   NEXT_E   STOP   NEXT_C   NEXT_T</code>	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, 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, 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 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 with a different destination type.

*Channel\_ID*

IPMI Channel ID for a BMC channel

*Destination\_table\_index*

Destination Table Index

Configure 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

Set 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 Configure Power Supply Cold Redundancy Setting (/cr)

On S1400/S1600/S2400/S2600/S4600 platform series, SYSCFG utility provides an option to configure Cold Redundancy settings in the server management firmware.

Commands using this option can have the following format:

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

The table below describes the arguments for this option.

**Table 3. Cold Redundancy Configuration Command-line Arguments**

Argument #	Possible Values	Description
1	Enable   Disable	Enables/Disables Cold Redundancy feature; refer to the Example 1 below.
1 2	Rotation Enable   Disable	Enables/Disables Cold Redundancy Rotation; refer to the Example 2 below.
1 2	Timeout Timeout value in number of days	Sets the timeout value for Cold Redundancy Rotation feature; refer to the Example 3 below. Valid values are between 1-180 days (6months).

1	Rank	Sets the Rank Order of Power supplies; refer to the Example 4 below.
2	Rank Value	When the user sets the rank order of power supplies, utility internally sets the rank type to USER_SPECIFIC. The rank order should be only for max number of power supplies supported by the system.

#### Example 1:

```
syscfg /cr enable
```

The example above enables the Cold Redundancy feature.

#### Example 2:

```
syscfg /cr rotation enable
```

The example above enables the Cold Redundancy Rotation feature.

#### Example 3:

```
syscfg /cr timeout 10
```

The example above sets the rotation timeout to 10 days.

#### Example 4:

```
syscfg /cr rank "2 1"
```

The example above sets the rank order to 2, 1.

## 4.4.17 Reset BMC (/rbmc)

**syscfg {/rbmc | resetBMC}**

Reset the Baseboard Management Controller.

Example:

```
syscfg /rbmc
```

**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.

## 4.4.18 Restore Firmware Settings (/rfs)

**syscfg {/rfs | restorefirmwaresettings}**

Restore the factory default Baseboard Management Controller settings.

Example:

```
syscfg /rfs
```

**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.

## 4.4.19 Reset Node Manager (/rnm)

**syscfg {/rnm | resetnodemanager}**

Reset 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 “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 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:

```
syscfg /rnm or syscfg /resetnodemanager
```

## 4.4.20 Serial Over LAN (/sole)

**syscfg {/sole | /soleenable} Channel\_ID {enable | disable} {user | operator | admin} {9600 | 19200 | 38400 | 115200} {0..7} {0..2550}**

<i>Channel_ID</i>	IPMI Channel ID
<b>enable   disable</b>	SOL enable
<b>user   operator   admin</b>	Privilege Level Limit
<b>9600   19200   38400   115200</b>	Baud Rate
<b>0..7</b>	Retry count
<b>0..2550</b>	Retry interval in milliseconds, rounded to the nearest 10 ms

Enable 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 S1200V3RP/S1400/S1600/S2400/S2600/S4600 and S2600 with Intel® Xeon® processor E5-2600 v3 platform series Serial Baud Rate is not supported.

Example:

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



## 4.4.21 Save BMC debug log

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

<b>Public</b>	Regular System Diagnostics
<b>Filename</b>	Name of the file to save the BMC diagnostics data. The extension should be .zip or .ZIP.

On S1200V3RP/S1400/S1600/S2400/S2600/S4600 and S2600 with Intel® Xeon® processor E5-2600 v3 platform series SysCfg utility provides an option to save BMC debug log to a ZIP file for system diagnostics purpose.

## 4.4.22 Users (/u)

**syscfg** {/u | /user} *User\_ID* *User\_name* *Password*

<b>User_ID</b>	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.
<b>User_name</b>	BMC User name consisting of up to 16 ASCII characters in the range 0x21 to 0x7e, except "[" and "]". Use "" to leave user name as anonymous.
<b>Password</b>	User BMC Password. ASCII string of up to 20 characters.

Set the user name and password for the specified BMC user. See *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 on Intel® S1200BT, S1200V3RP, S1400/S1600/S2400/S2600/S4600, and S2600 with Intel® Xeon® processor E5-2600 v3 platform series.
- Duplicate user names are not supported on Intel® S1200BT, S1200V3RP, S1400/S1600/S2400/S2600/S4600, and S2600 with Intel® Xeon® processor E5-2600 v3 platform series.

Examples:

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

## 4.4.23 User Enable (/ue)

**syscfg** {/ue | /userenable} *User\_ID* {**enable** | **disable**} *Channel\_ID*

<b>User_ID</b>	User ID. Use a decimal integer in the range [1..n], where <i>n</i> is the number of users
----------------	---

**enable | disable**

*Channel\_ID*

supported by the platform BMC. User ID 1 is usually the anonymous user.

Enable or disable the specified user

IPMI Channel ID

Enable or disable 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
```

## 4.4.24 User Privilege (/up)

**syscfg {/up | /userprivilege} *User\_ID* *Channel\_ID* {callback | user | operator | admin | none} [SOL | Disable]**

*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 | Disable**

Specifies the type of payload: Serial Over LAN, KVM, or both.

Enable or disable 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, S1200V3RP, S1400/S1600/S2400/S2600/S4600, and S2600 with Intel® Xeon® processor E5-2600 v3 platform series.
- Privilege level none is not supported on Intel® S1200BT, S1200V3RP, S1400/S1600/S2400/S2600/S4600, and S2600 with Intel® Xeon® processor E5-2600 v3 platform series.
- Maximum five users are supported by the utility irrespective of number of users supported 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.

Server Board	IPMI Channel Assignment	
Intel® S1200BT platform series	Channel 1 Channel 3	Baseboard LAN Channel A Optional Intel® RMM NIC
Intel® Server Board S1400 Intel® Server Board S1600 Intel® Server Board S2400 Intel® Server Board S2600 Intel® Server Board S4600	Channel 1 Channel 2 Channel 3	Baseboard LAN Channel Baseboard LAN Channel Optional Intel® RMM4 NIC

# 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 4. Saved Firmware Settings**

Component	Setting
Power Configuration Settings	Power Restore Policy
LAN Channel Settings	Alert Enable
	Per Message Authentication
	User Level Authentication Enable
	Access Mode
	Privilege Level Limit
	Community String
	Gratuitous ARP enable
	ARP interval
	Authentication Types
	DHCP enabled
	DHCP Host Name
	Subnet Mask
	Gateway IP
	Gateway MAC
	Backup Gateway IP
	Backup Gateway MAC
	BMC ARP Response Enable
<b>Note:</b> <i>On S1200BT, S1200V3RP, 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.</i>	
LAN Alert Settings <sup>†</sup>	Alert Acknowledge Enabled
	Alert IP
	Alert MAC
	Gateway Selector

Component	Setting
	Retry Count
	Retry Interval
User Settings	User Name
	User Password
	Privilege Level Limit
	Callback Status
	Link Authentication Enable
	IPMI messaging enabled
	User Payload
Platform Event Filter Settings <sup>†</sup>	PEF Enable
	Event Message for PEF Action
	Startup Delay
	Alert Startup Delay
	Global Control Actions
	Event Filters
	Alert Policies
Serial Over LAN Settings	SOL Enable
	SOL Privilege Level
	SOL Retry Count
	SOL Retry Interval
	SOL Baud Rate*
	SOL Authentication Enable
SMTP Alert Settings	Enable/Disable SMTP
	Sender Machine Name
	From Address
	To Address
	Subject Line
	User Name
	User Password
	Server Address
	Message Content
	LAN Alert Destination/SNMP Alert Index Mapping

Note: On S1400, S1200V3RP, 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 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=SE5C610.86B.01.01.0599.080120140224      ; This field should not
be edited
FWBootVersion=01.00                                  ; This field should not
be edited
FWOpcodeVersion=1.00.6572                             ; This field should not
be edited

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

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

[USERS::USER1]
UserName=                                              ; This field should not
be edited
GlobalUserStatus=ENABLE                               ; Options: Enable or
Disable
PrivilegeCh11=ADMIN                                   ; Options: User,
Operator, Admin, NoAccess
UserAccessCh1=ENABLE                                 ; Options: Enable or
Disable
SOLEnableCh1=ENABLE                                  ; Options: Enable or
Disable
```

```

PrivilegeCh12=ADMIN ; Options: User,
Operator, Admin, NoAccess
UserAccessCh2=DISABLE ; Options: Enable or
Disable
SOLEnableCh2=ENABLE ; Options: Enable or
Disable
PrivilegeCh13=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=ENABLE ; Options: Enable or
Disable
PrivilegeCh11=ADMIN ; This field should not
be edited
UserAccessCh1=ENABLE ; This field should not
be edited
SOLEnableCh1=ENABLE ; This field should not
be edited
PrivilegeCh12=ADMIN ; This field should not
be edited
UserAccessCh2=ENABLE ; This field should not
be edited
SOLEnableCh2=ENABLE ; This field should not
be edited
PrivilegeCh13=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
PrivilegeCh11=ADMIN ; Options: User,
Operator, Admin, NoAccess
UserAccessCh1=ENABLE ; Options: Enable or
Disable
SOLEnableCh1=ENABLE ; Options: Enable or
Disable
PrivilegeCh12=ADMIN ; Options: User,
Operator, Admin, NoAccess

```

```

UserAccessCh2=DISABLE ; Options: Enable or
Disable
SOLEnableCh2=ENABLE ; Options: Enable or
Disable
PrivilegeCh13=ADMIN ; Options: User,
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
PrivilegeCh11=ADMIN ; Options: User,
Operator, Admin, NoAccess
UserAccessCh1=ENABLE ; Options: Enable or
Disable
SOLEnableCh1=ENABLE ; Options: Enable or
Disable
PrivilegeCh12=ADMIN ; Options: User,
Operator, Admin, NoAccess
UserAccessCh2=DISABLE ; Options: Enable or
Disable
SOLEnableCh2=ENABLE ; Options: Enable or
Disable
PrivilegeCh13=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
PrivilegeCh11=ADMIN ; Options: User,
Operator, Admin, NoAccess
UserAccessCh1=DISABLE ; Options: Enable or
Disable
SOLEnableCh1=ENABLE ; Options: Enable or
Disable
PrivilegeCh12=ADMIN ; Options: User,
Operator, Admin, NoAccess
UserAccessCh2=DISABLE ; Options: Enable or
Disable

```



```

SOLEnableCh2=ENABLE ; Options: Enable or
Disable
PrivilegeCh13=ADMIN ; Options: User,
Operator, Admin, NoAccess
UserAccessCh3=DISABLE ; Options: Enable or
Disable
SOLEnableCh3=ENABLE ; Options: Enable or
Disable

[PEF]
PEFEnable=DISABLE ; 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=DCMI001E679636AC ; 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: Disabled,
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::LAN2]	
AlertEnable=ENABLE	; Options: Enable,
Disable	
PerMessageAuthentication=ENABLE	; Options: Enable,
Disable	
UserLevelAuthentication=ENABLE	; Options: Enable,
Disable	

AccessMode=ALWAYS	; Options: Disabled,
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: Disabled,
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=ENABLE ; Options: Enable or
Disable
IPV6Source=STATIC ; Options: STATIC,
DHCPV6 or AUTO
IPV6PrefixLength=64 ; This field should not
be edited
IPV6=000:000:000:000:000:000:000:000 ; This field should not
be edited
IPV6GatewayIP=000:000:000:000:000:000:000:000 ; This field should not
be edited
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=DISABLE ; 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

```

```
[CHANNEL::LAN2::SOL]
SOLEnable=DISABLE ; 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
```

```
[CHANNEL::LAN3::SOL]
SOLEnable=DISABLE ; 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
```

```
[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::Main]
Quiet Boot=Disabled                          ;Options: Disabled=00:
Enabled=01
POST Error Pause=Disabled                    ;Options: Disabled=00:
Enabled=01

[BIOS::Advanced]

[BIOS::Advanced::Processor Configuration]
Intel(R) Hyper-Threading Tech=Enabled        ;Options: Enabled=00:
Disabled=01
Active Processor Cores=All                    ;Options: All=00: 1=01:
2=02: 3=03: 4=04: 5=05: 6=06: 7=07: 8=08: 9=09: 10=0A: 11=0B: 12=0C: 13=0D
Execute Disable Bit=Enabled                  ;Options: Disabled=00:
Enabled=01
Intel(R) Virtualization Technology=Disabled  ;Options: Disabled=00:
Enabled=01
Enhanced Error Containment Mode=Disabled      ;Options: Disabled=00:
Enabled=01
MLC Streamer=Enabled                         ;Options: Disabled=00:
Enabled=01
MLC Spatial Prefetcher=Enabled               ;Options: Disabled=00:
Enabled=01
DCU Data Prefetcher=Enabled                  ;Options: Disabled=00:
Enabled=01

```

```

DCU Instruction Prefetcher=Enabled                ;Options: Disabled=00:
Enabled=01
Direct Cache Access (DCA)=Enabled                ;Options: Disabled=00:
Enabled=01
Extended ATR=0x03                                ;Options: 0x01=01: 0x03=03
PFloor Tuning=12                                  ;Options: 100=Max: 0=Min:
1=Step

[BIOS::Advanced::Power & Performance]
CPU Power and Performance Policy=Balanced Performance ;Options: Balanced
Performance=00: Performance=01: Balanced Power=02: Power=03
Workload Configuration=Balanced                  ;Options: Balanced=00: I/O
Sensitive=02

[BIOS::Advanced::Power & Performance::CPU C State Control]
CPU C-State=Enabled                              ;Options: Disabled=00:
Enabled=01
C1E Autopromote=Enabled                          ;Options: Disabled=00:
Enabled=01
Processor C3=Disabled                            ;Options: Disabled=00:
Enabled=01

[BIOS::Advanced::Power & Performance::CPU P State Control]
Enhanced Intel SpeedStep(R) Tech=Enabled         ;Options: Disabled=00:
Enabled=01
Intel Configurable TDP=Disabled                  ;Options: Disabled=00:
Enabled=01
Intel(R) Turbo Boost Technology=Enabled          ;Options: Disabled=00:
Enabled=01
Energy Efficient Turbo=Enabled                   ;Options: Enabled=00:
Disabled=01

[BIOS::Advanced::Power & Performance::Uncore Power Management]
Uncore Frequency Scaling=Enabled                 ;Options: Enabled=00:
Disabled=01

[BIOS::Advanced::QPI Configuration]

[BIOS::Advanced::Memory Configuration]
Memory Operating Speed Selection=Auto             ;Options: Auto=00: 1333=05:
1600=07: 1866=09: 2133=0B

[BIOS::Advanced::Memory Configuration::Memory RAS and Performance
Configuration]
Select Memory RAS Configuration=Maximum Performance ;Options: Maximum
Performance=00
Cluster-on-Die=Disabled                          ;Options: Disabled=00:
Enabled=01

```

```

Patrol Scrub=Enabled                                ;Options: Disabled=00:
Enabled=01
Demand Scrub=Enabled                                ;Options: Disabled=00:
Enabled=01
Correctable Error Threshold=20                      ;Options: None=00: All=01:
5=05: 10=0A: 20=14

[BIOS::Advanced::Integrated IO Configuration]
NTB PCIe Port on CPU socket 1=Transparent Bridge    ;Options: Transparent
Bridge=00: NTB to NTB=01: NTB to RP=02
Intel(R) VT for Directed I/O=Disabled              ;Options: Disabled=00:
Enabled=01

[BIOS::Advanced::Mass Storage Controller Configuration]

[BIOS::Advanced::Mass Storage Controller Configuration::sATA Port 0-3]
AHCI Capable sATA Controller=AHCI                  ;Options: Enhanced=00:
AHCI=01: RAID Mode=02: Disabled=04
AHCI HDD Staggered Spin-Up=Disabled                ;Options: Disabled=00:
Enabled=01

[BIOS::Advanced::Mass Storage Controller Configuration::SATA Port 0-5]
AHCI Capable SATA Controller=AHCI                  ;Options: Enhanced=00:
AHCI=01: RAID Mode=02: Disabled=04
AHCI HDD Staggered Spin-Up=Disabled                ;Options: Disabled=00:
Enabled=01

[BIOS::Advanced::PCI Configuration]
Memory Mapped I/O above 4 GB=Disabled              ;Options: Disabled=00:
Enabled=01
Add-in Video Adapter=Disabled                      ;Options: Disabled=00:
Enabled=01
Onboard Video=Enabled                              ;Options: Disabled=00:
Enabled=01
Legacy VGA Socket=CPU Socket 1                    ;Options: CPU Socket 1=00:
CPU Socket 2=01

[BIOS::Advanced::PCI Configuration::Processor PCIe Link Speed]

[BIOS::Advanced::PCI Configuration::Processor PCIe Link Speed::Socket 1 PCIe
Ports Link Speed]
Socket 1, PCIe Port 1a=Auto                        ;Options: Auto=00: Gen 1
(2.5 GT/s)=01: Gen 2 (5 GT/s)=02: Gen 3 (8 GT/s)=03
Socket 1, PCIe Port 2a=Auto                        ;Options: Auto=00: Gen 1
(2.5 GT/s)=01: Gen 2 (5 GT/s)=02: Gen 3 (8 GT/s)=03
Socket 1, PCIe Port 3a=Auto                        ;Options: Auto=00: Gen 1
(2.5 GT/s)=01: Gen 2 (5 GT/s)=02: Gen 3 (8 GT/s)=03

```



```

[BIOS::Advanced::PCI Configuration::PCIe Port Oprom Control]

[BIOS::Advanced::PCI Configuration::PCIe Port Oprom Control::CPU socket 1]
PCIe Port 1a OpROM control=Enabled                ;Options: Disabled=00:
Enabled=01
PCIe Port 2a OpROM control=Enabled                ;Options: Disabled=00:
Enabled=01
PCIe Port 3a OpROM control=Enabled                ;Options: Disabled=00:
Enabled=01

[BIOS::Advanced::PCI Configuration::UEFI Option ROM Control]

[BIOS::Advanced::PCI Configuration::UEFI Network Stack]
UEFI Network Stack=Enabled                        ;Options: Enabled=00:
Disabled=01
IPv4 PXE Support=Enabled                          ;Options: Enabled=00:
Disabled=01
IPv6 PXE Support=Enabled                          ;Options: Enabled=00:
Disabled=01

[BIOS::Advanced::PCI Configuration::NIC Configuration]
PXE 1GbE Option ROM=Enabled                       ;Options: Disabled=00:
Enabled=01
NIC1 Controller=Enabled                          ;Options: Disabled=00:
Enabled=01
NIC1 Port1=Enabled                               ;Options: Disabled=00:
Enabled=01
NIC1 Port2=Enabled                               ;Options: Disabled=00:
Enabled=01
NIC1 Port1 PXE=Enabled                           ;Options: Disabled=00:
Enabled=01
NIC1 Port2 PXE=Enabled                           ;Options: Disabled=00:
Enabled=01

[BIOS::Advanced::PCI Configuration::PCIe Slot Bifurcation Setting]
Riser_Slot_1 Bifurcation=Auto                    ;Options: x4x4x8=01:
x8x8=03: x16=04: Auto=FF
Riser_Slot_2 Bifurcation=Auto                    ;Options: x4x4x8=01:
x8x8=03: x16=04: Auto=FF
Riser_Slot_3 Bifurcation=Auto                    ;Options: x4x4x8=01:
x8x8=03: x16=04: Auto=FF

[BIOS::Advanced::Serial Port Configuration]
Serial A Enable=Enabled                          ;Options: Disabled=00:
Enabled=01
Serial A Address=3F8h                            ;Options: 3F8h=00: 2F8h=01:
3E8h=02: 2E8h=03
Serial A IRQ=4                                    ;Options: 3=00: 4=01

```

```

[BIOS::Advanced::USB Configuration]
USB Controller=Enabled                ;Options: Disabled=00:
Enabled=01
Legacy USB Support=Enabled            ;Options: Enabled=00:
Disabled=01: Auto=02
Port 60/64 Emulation=Enabled          ;Options: Disabled=00:
Enabled=01
Make USB Devices Non-Bootable=Disabled ;Options: Disabled=00:
Enabled=01
Device Reset Timeout=20 seconds        ;Options: 10 seconds=00: 20
seconds=01: 30 seconds=02: 40 seconds=03
SanDisk=Auto                          ;Options: Auto=00:
Floppy=01: Forced FDD=02: Hard Disk=03: CD-ROM=04

[BIOS::Advanced::System Acoustic and Performance Configuration]
Set Fan Profile=Performance           ;Options: Performance=01:
Acoustic=02
Fan PWM Offset=0                      ;Options: 100=Max: 0=Min:
1=Step

[BIOS::Security]
Front Panel Lockout=Disabled          ;Options: Disabled=00:
Enabled=01

[BIOS::Server Management]
Assert NMI on SERR=Enabled            ;Options: Disabled=00:
Enabled=01
Assert NMI on PERR=Enabled            ;Options: Disabled=00:
Enabled=01
PCIe AER Support=Enabled              ;Options: Disabled=00:
Enabled=01
Log Correctable Errors=Disabled       ;Options: Disabled=00:
Enabled=01
WHEA Support=Enabled                 ;Options: Disabled=00:
Enabled=01
Reset on CATERR=Enabled               ;Options: Disabled=00:
Enabled=01
Reset on ERR2=Enabled                 ;Options: Disabled=00:
Enabled=01
Resume on AC Power Loss=Stay Off      ;Options: Stay Off=00: Last
State=01: Power On=02
FRB-2 Enable=Enabled                 ;Options: Disabled=00:
Enabled=01
OS Boot Watchdog Timer=Disabled       ;Options: Disabled=00:
Enabled=01
Plug & Play BMC Detection=Disabled    ;Options: Disabled=00:
Enabled=01
Shutdown Policy=Disabled              ;Options: Disabled=00:

```

Enabled=01

[BIOS::Server Management::Console Redirection]

SOL for Baseboard Mgmt=Disabled ;Options: Disabled=00:

Enabled=01

SOL for Baseboard Mgmt 2=Disabled ;Options: Disabled=00:

Enabled=01

SOL for Dedicated Mgmt NIC=Disabled ;Options: Disabled=00:

Enabled=01

Console Redirection=Disabled ;Options: Disabled=00:

Serial Port A=01

[BIOS::Server Management::System Information]

[BIOS::Advanced Boot Options]

System Boot Timeout=0 ;Options: 65535=Max: 0=Min:

1=Step

Boot Mode=UEFI ;Options: Legacy=00:

UEFI=01

Video BIOS=UEFI ;Options: UEFI=00:

Legacy=01

Boot Option Retry=Disabled ;Options: Disabled=00:

Enabled=01

USB Boot Priority=Enabled ;Options: Disabled=00:

Enabled=01

[BIOS::BootOrder]

Launch EFI Shell=1

UEFI IPv4: Intel I350 Network 00 at Baseboard=2

UEFI IPv6: Intel I350 Network 00 at Baseboard=3

UEFI IPv4: Intel I350 Network 01 at Baseboard=4

UEFI IPv6: Intel I350 Network 01 at Baseboard=5

UEFI SanDisk=6