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Preface

About this Manual

This document provides the complete command reference for the ROM-DOS* version of the System Configuration Utility. This manual is written for operators or support technicians who are responsible for configuring the BIOS and management firmware on Intel® S5000PAL, S5000PSL, and S5000PSA server boards. 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 the Intelligent Platform Management Interface Specification (2.0) for information on the standard management firmware settings.

Manual Organization

Chapter 1 provides information on how to quickly get started by saving your current settings on one platform and copying them to another (identical) platform.

Chapter 2 provides information on how to run the syscfg.exe utility.

Chapter 3 provides a complete command reference for the utility.

Appendix A is a quick reference that lists the syntax of each command.

Appendix B provides a list of IPMI Channel assignments.

Appendix C provides a list of the BIOS and firmware settings that are saved by the utility.

Related Documentation

IPMI--Intelligent Platform Management Interface Specification, Second Generation, v2.0

Product Guides for BIOS Setup options.

Syntax Conventions Used in the Manual

The following syntax conventions are used in this document:

{a | b} Required element. Choose a or b.

[a | b] Optional element. You may optionally choose a or b.

XYZ Type what is shown.

XYZ Substitute the appropriate value for this element.

[...] The previous element may be repeated.

1..255 Choose a number in the range from 1 to 255.
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1 Quick Start Instructions

Save a Configuration

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

1. Boot to ROM-DOS* 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. Type: `syscfg /s filename`

The binary file `filename.scf` 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.

Restore 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. To restore a configuration, do the following:

1. Boot the system to be restored to ROM-DOS.
2. Change to the directory containing the syscfg executable. (The saved configuration file should also be located in this directory.)
3. Type: `syscfg /r filename.scf`

Syscfg Help

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

Display Current BIOS and Firmware Versions

To display the current BIOS and firmware settings, type: `syscfg /i`
2 Using the 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. Syscfg may be used in a script to automate the process of configuring multiple servers.

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 utility is designed to run from ROM-DOS. (This utility will not run from the Windows command prompt.)
## 3 Command Reference

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<th>Description</th>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
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<td>Display</td>
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<td>BIOS Administrator Password</td>
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<tr>
<td>/bup</td>
<td>BIOS User Password</td>
<td>/pefp</td>
<td>PEF Policy</td>
</tr>
<tr>
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<td>BIOS Hyper-Threading</td>
<td>/prp</td>
<td>Power Restore Policy</td>
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<td>BIOS Quiet Boot</td>
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<td>Save</td>
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<td>/bbo</td>
<td>BIOS Boot Order</td>
<td>/sds</td>
<td>Serial Dial String</td>
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<td>/c</td>
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<td>/h or /?</td>
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<tr>
<td>/lac</td>
<td>LAN Alert Configuration</td>
<td>/sole</td>
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</tr>
<tr>
<td>/lae</td>
<td>LAN Alert Enable</td>
<td>/te</td>
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<td>/le</td>
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<td>/u</td>
<td>Users</td>
</tr>
<tr>
<td>/lc</td>
<td>LAN Enable</td>
<td>/ue</td>
<td>User Enable</td>
</tr>
<tr>
<td>/mc</td>
<td>Modem Configure</td>
<td>/up</td>
<td>User Privilege</td>
</tr>
</tbody>
</table>
Display (/d)

```
syscfg /d {CHANNEL Channel_ID | BIOS | LAN Channel_ID LAN_Alert_Destination_Index | SERIAL Channel_ID Dial_String_Index Page_Destination_Selector Dial_String_Selector | POWER | PEF Filter_Table_Index [Policy_Table_Index] | SOL Channel_ID | USER User_ID [Channel_ID] }
```

<table>
<thead>
<tr>
<th>CHANNEL</th>
<th>Displays the BMC Channel configuration.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOS</td>
<td>Displays the current values of the BIOS settings that can be reset with this utility (except the Administrator and User passwords.)</td>
</tr>
<tr>
<td>LAN</td>
<td>Displays the BMC LAN channel configuration. The Operating System settings may be different.</td>
</tr>
<tr>
<td>SERIAL</td>
<td>Displays the Serial channel configuration for the BMC.</td>
</tr>
<tr>
<td>POWER</td>
<td>Displays the power restore policy.</td>
</tr>
<tr>
<td>PEF</td>
<td>Displays the Platform Event Filters.</td>
</tr>
<tr>
<td>SOL</td>
<td>Displays the Serial Over LAN settings.</td>
</tr>
<tr>
<td>USER</td>
<td>Displays the BMC user settings.</td>
</tr>
<tr>
<td>Channel_ID</td>
<td>IPMI Channel ID.</td>
</tr>
<tr>
<td>LAN_Alert_Destination_Index</td>
<td>Enter the LAN Alert Destination Index.</td>
</tr>
<tr>
<td>Dial_String_Index</td>
<td>Enter the Serial Modem Dial String Index.</td>
</tr>
<tr>
<td>Page_Destination_Selector</td>
<td>Enter the Page Destination Selector.</td>
</tr>
<tr>
<td>Dial_String_Selector</td>
<td>Enter the Dial String Selector.</td>
</tr>
<tr>
<td>Filter_Table_Index</td>
<td>Enter the Filter Table Index.</td>
</tr>
<tr>
<td>Policy_Table_Index</td>
<td>Enter the PEF Policy Table Index.</td>
</tr>
<tr>
<td>User_ID</td>
<td>Enter an integer between 1 and 16 for the BMC User ID. User ID 1 is the anonymous user (no password).</td>
</tr>
</tbody>
</table>

Displays the specified BMC and BIOS settings.

Examples:
```
syscfg /d channel 1
syscfg /d lan 1 2
syscfg /d serial 1 2 3 4
syscfg /d pef 2 1
```
BIOS Administrator Password (/bap)

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

<table>
<thead>
<tr>
<th>old_password</th>
<th>new_password</th>
</tr>
</thead>
</table>

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. 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
```

**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.
BIOS User Password (/bup)

```
sysefg /bup [old_password | ""] [new_password | "]"
```

**old_password, new_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 sysefg except the BIOS User and Administrator passwords.

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

**Examples:**

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

**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.
### BIOS Hyper-Threading (/bht)

**syscfg /bht {enable | disable}**

<table>
<thead>
<tr>
<th>enable, disable</th>
<th>Enables or disables Hyper-Threading Technology in the BIOS.</th>
</tr>
</thead>
</table>

Enable Hyper-Threading Technology (HT Technology) in the BIOS. The BIOS default is to enable HT Technology.

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

Examples:

```bash
syscfg /bht enable
syscfg /bht disable
```
BIOS Console Redirection (/bcr)

```
syscfg /bcr {disable | COM1 | COM2} {9600 | 19200 | 38400 | 11520} {none | CTS} {PCANSI | VT100 | VTUTF8}
```

- **disable | COM1 | COM2**: COM port number.
- **9600 | 19200 | 38400 | 11520**: Baud rate options in BIOS Setup.
- **none | CTS**: Flow control options in BIOS Setup. (CTS is RTS/CTS)
- **PCANSI | VT100 | VTUTF8**: Terminal type in BIOS Setup. (PCANSI is PC-ANSI; VT100 is VT100; and VTUTF8 is VT-UTF8)

Enables BIOS serial console redirection.

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

**Examples:**

```
syscfg /bcr COM1 19200 none VT100
syscfg /bcr disable 19200 none VT100
```

**NOTE**

If the /bcr option is enabled, the quiet boot option cannot be enabled.
**BIOS Quiet Boot (/bqb)**

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>`syscfg /bqb {enable</td>
<td>Enables or disables the BIOS Quiet Boot feature.</td>
</tr>
<tr>
<td>disable}`</td>
<td></td>
</tr>
</tbody>
</table>

Enable quiet boot option in the BIOS. The BIOS default is to enable the quiet boot option.

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

Examples:

```
syscfg /bqb enable
syscfg /bqb disable
```

**NOTE**

If the /bcr option is enabled, the quiet boot option cannot be enabled.
**BIOS Boot Order (/bbo)**

`syscfg /bbo [device_number [device_number [...]]]`

*device_number*  
The current ordinal number of the BIOS boot device (1 is the first device, 2 is the second device, and so on.). To change the order, specify a 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 BIOS boot order.

Examples:

```
syscfg /bbo
syscfg /bbo 2 1 3 4
```
**Channels (/c)**

```bash
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 \{disable | preboot | always | shared\} | 8 \{callback | user | operator | admin\} | 9 \{enable | disable\}\}
```

**Channel_ID**

1. BMC channel ID number.
2. Selects the authentication types for callback privilege level.
3. Selects the authentication types for user privilege level.
4. Selects the authentication types for operator privilege level.
5. Selects the authentication types for Admin privilege level.
6. Selects the Per message authentication.
7. Selects User Level Authentication enable.
8. Selects the Access Mode. Values of `preboot` and `shared` are only valid for serial channels.
9. Selects the Privilege level limit for the channel.

**none | straight | MD5**

Authentication method for callback, user, operator, and admin privilege levels.

**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.

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

**Examples:**

```bash
syscfg /c
syscfg /c 1 7 always
syscfg /c 1 7 always /c 1 8 admin
```
Help (/h)

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

  lan | user | serial | pef | sol | power | channel | system | bios

  Displays help in the specified area.

  Displays help on the system configuration utility.

Examples:
```
syscfg /h lan
syscfg /? power
```
**Information (/i)**

```
syscfg /i [filename.SCFCF]
```

*filename*

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

Displays 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 bd2.scf
```
## LAN Alert Configuration (/lac)

```
syconf {/lac | /lanalertconf} Channel_Id Alert_Destination_Index Alert_Destination_IP_Address Alert_ID_MAC_Address {enable | disable} {enable | disable} {1..7} {1..255}
```

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

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

**Example:**

```
syconf /lac 1 1 10.78.211.40 03-FE-02-41-F3 disable disable 0 1
```
## LAN Alert Enable (/lae)

The `syscfg /lae [ /lanalertenable ]` command is used to set up alerts for a specific LAN channel.

**Syntax:**
```
syscfg /lae [ /lanalertenable ] Channel_ID Gateway_IP_Address Gateway_MAC_Address SNMP_Community_String [Backup_Gateway_IP_Address Backup_Gateway_MAC_Address]
```

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

**NOTE**

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.

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
```
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} | 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: Selects Enable Gratuitous ARP. (LAN channels 1 and 2 only.)
  - 11: Selects Gratuitous ARP interval. (LAN channels 1 and 2 only.)
  - 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
**IP Address**

**MAC Address**

**SNMP_Community_String**

SNMP Community String. Enclose in double quotes if the string contains spaces.

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.

Examples:

```
syscfg /lc 1 2b none+straight+md5
```
LAN Enable (/le)

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

| Channel_ID | BMC LAN Channel ID |
| static | IP Address source |
| dhcp | 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.

Example:

```
syscfg /le 1 dhcp
syscfg /le 1 static 10.30.240.21 255.255.255.0
```
## Modem Configure (/mc)

```
modem Configure (/mc | /modemconf) Channel_ID Modem_init_string Escape_command Hangup_command
Dial_command Ring_dead_time Ring_duration System_phone_number
```

- **Channel_ID**: BMC Serial Channel ID. This must be 4 for S5000PAL, S5000PSL, and S5000PSA server boards.
- **Modem_init_string**: ASCII string used to initialize the modem.
- **Escape_command**: ASCII string for the Modem Escape command.
- **Hangup_command**: ASCII string for the Modem Hangup command.
- **Dial_command**: ASCII string for the Modem Dial command.
- **Ring_dead_time**: Decimal integer between 500 and 8000 representing the ring dead time in msec. This value will be rounded down to the nearest 500 msec.
- **Ring_duration**: Decimal integer between 0 and 31000 representing the ring duration time in msec. This value will be rounded down to the nearest 500 msec.
- **System_phone_number**: 32 characters consisting of numbers, parenthesis, hyphen, or space character. Enclose in quotes if the string has embedded white space.

Configures the modem used by the BMC on the specified serial channel. See *IPMI 2.0 Specification*, Chapters 14 and 25, for more information on IPMI Serial/Modem interface and commands.

**Example:**

```
syscfg /mc 4 ATE1Q0V1X4&D2&C1S0=0 +++ ATH ATD 3000 7000 (515)522-4807
```
PEF Configure (/pefc)

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

<table>
<thead>
<tr>
<th>enable</th>
<th>disable</th>
<th>Global PEF enable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>none</td>
<td>alert</td>
<td>pdown</td>
</tr>
</tbody>
</table>

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:

```
syccfg /pefc enable alert+pdown+reset+pcycle
```
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 | 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.”

**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:
```
sysefg /peff 3 enable pdown 1 /peff 4 enable pdown 1
```
# PEF Policy (/pefp)

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

<table>
<thead>
<tr>
<th>Policy_table_index</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>enable</td>
<td>disable</td>
</tr>
<tr>
<td>1..15</td>
<td>Alert Policy:</td>
</tr>
<tr>
<td>ALWAYS</td>
<td>NEXT_E</td>
</tr>
</tbody>
</table>

**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:

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

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

<table>
<thead>
<tr>
<th>off</th>
<th>on</th>
<th>restore</th>
<th>Power restore policy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sets the power restore policy. See <em>IPMI 2.0 Specification</em>, §28.8, for more information on the Set Power Restore Policy IPMI Command.</td>
</tr>
</tbody>
</table>

**Examples:**

```
syscfg /prp off
```
**Restore (/r)**

```
.syscfg /r [filename.SCFF]/f | /b | /f /b
```

- **filename**
  
  Filename of the syscfg configuration file (.SCF) in the current working directory. If no filename is specified, the default filename syscfg.scf is used. The filename suffix must be .SCF.

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

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

Restores the BIOS and firmware settings from a SCF file.

Examples:

```
syscfg /r /f /b
syscfg /r saved.scf /f
syscfg /r myscfg.scf /b /bap kwqt821
```

**NOTE**

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.
Save (/s)

**syscfg /s [filename.SCf] [/f] [/b] [ /f /b]**

*filename*

File name to be used for the syscfg configuration file (.SCF) in the current working directory. If no filename is specified, the default file name syscfg.scf is used. The filename suffix must be .SCF, or, if omitted, syscfg will add the .SCF suffix. The filename should consist of only alphanumeric characters.

*[/f]*

Save the firmware settings. (See Appendix A for a list of the settings that are saved.)

*[/b]*

Save the BIOS settings. (See Appendix A for a list of the settings that are saved.)

Saves the BIOS and firmware settings to a SCF file.

Examples:

```
syscfg /s /f /b
syscfg /s saved.scf /f
```
# Serial Dial String (/sds)

The `/sds` command is used to set the serial modem dial string used by the BMC on the specified channel. This command is specified in the IPMI 2.0 Specification, Chapters 14 and 25, for more information on IPMI Serial/Modem interface and commands.

## Command Syntax

```bash
cfg [sds | serialdialstring] Channel_ID Dial_String_Index Dial_string
```

### Channel_ID

IPMI Channel ID (this must be 4 for S5000PAL, S5000PSL, and S5000PSA server boards)

### Dial_String_Index

Dial String Index

### Dial_String

ASCII string with the modem dial command and phone number

Example:

```bash
cfg /sds 4 3 P0S=5154884627,0
```
## Serial Enable (/se)

```
syscfg [/se | /serialenable] Channel_ID {callback | user | operator | admin}{modem | direct}
{9600 | 19200 | 38400 | 57600 | 115200}
```

<table>
<thead>
<tr>
<th>Channel_ID</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPMI Channel ID (this must be 4 for S5000PAL, S5000PSL, S5000PSA server boards)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>callback</th>
<th>user</th>
<th>operator</th>
<th>admin</th>
<th>Serial channel privilege level</th>
</tr>
</thead>
<tbody>
<tr>
<td>modem</td>
<td>direct</td>
<td>Modem or direct connection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9600</td>
<td>19200</td>
<td>38400</td>
<td>57600</td>
<td>115200</td>
</tr>
</tbody>
</table>

Enables serial communications with the BMC on the specified channel. See *IPMI 2.0 Specification*, Chapters 14 and 25, for more information on IPMI Serial/Modem interface and commands.

**Example:**

```
syscfg /se 4 admin modem 19200
```
## Serial Page Configuration (/spc)

<table>
<thead>
<tr>
<th>syscfg /pc</th>
<th>/serialpageconf</th>
<th>Channel_ID</th>
<th>Page_Destination_Selector</th>
<th>Dial_String_Selector</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>none</td>
<td>odd</td>
<td>even</td>
</tr>
</tbody>
</table>

- **Channel_ID**
  - IPMI Serial Channel ID (this must be 4 for S5000PAL, S5000PSL, and S5000PSA server boards)

- **Page_Destination_Selector**
  - Page Destination Selector

- **Dial_String_Selector**
  - Page String Selector

  - **1 | 2**
    - Number of parity bits
  - **7 | 8**
    - Number of data bits
  - **none | odd | even**
    - Parity
  - **9600 | 19200 | 38400 | 57600 | 115200**
    - Baud Rate

Configures serial paging for platform alerting with the BMC on the specified channel. See *IPMI 2.0 Specification*, Chapters 14 and 25, for more information on IPMI Serial/Modem interface and commands.

**Example:**

```
syscfg /spc 4 2 4 1 8 none 19200
```
### Serial Page Enable (/spe)

**syscfg /spe | /serialpageenable**  
*Channel_ID {0..255} SNMP_Community_String*

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Channel_ID</strong></td>
<td>IPMI Channel ID (this must be 4 for S5000PAL, S5000PSL, and S5000PSA server boards)</td>
</tr>
<tr>
<td><strong>0..255</strong></td>
<td>Page Blackout in minutes</td>
</tr>
<tr>
<td><strong>SNMP_Community_String</strong></td>
<td>SNMP Community String</td>
</tr>
</tbody>
</table>

Enables serial paging for platform alerting by the BMC on the specified channel. See *IPMI 2.0 Specification*, Chapters 14 and 25, for more information on IPMI Serial/Modem interface and commands.

Example:

```bash
syscfg /spe 4 3 "modem public"
```
### Serial Over LAN Enable (/sole)

`syscfg /sole` Enable or disable 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 admin 19200 0 10
```

#### Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>syscfg /sole</code></td>
<td>Command to enable or disable Serial Over LAN.</td>
</tr>
<tr>
<td><code>Channel_ID</code></td>
<td>IPMI Channel ID</td>
</tr>
<tr>
<td>`enable</td>
<td>disable`</td>
</tr>
<tr>
<td>`user</td>
<td>operator</td>
</tr>
<tr>
<td>`9600</td>
<td>19200</td>
</tr>
<tr>
<td><code>0..7</code></td>
<td>Retry count</td>
</tr>
<tr>
<td><code>0..2550</code></td>
<td>Retry interval in milliseconds</td>
</tr>
</tbody>
</table>
## Terminal Enable (/te)

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>syscfg</strong> (/te</td>
<td>/termenable) <strong>Channel_ID</strong> {enable</td>
</tr>
</tbody>
</table>

*Channel_ID*

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>enable</td>
<td>disable</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSB</td>
<td>DEL</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>enable</td>
<td>disable</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRLF</td>
<td>NULL</td>
</tr>
</tbody>
</table>

- **Channel_ID**: IPMI Channel ID (this must be 4 for S5000PAL, S5000PSL, and S5000PSA server boards)
- **enable | disable**: Line Edit enable
- **BSB | DEL**: Delete control
- **enable | disable**: Echo control
- **enable | disable**: Handshake control
- **CRLF | NULL | CR | LFCR | LF**: Output newline sequence
- **CR | NULL**: Input newline sequence

Configures terminal mode communications on the specified BMC channel. See *IPMI 2.0 Specification*, Chapters 14 and 25, for more information on IPMI Serial/Modem interface and commands.

**Examples:**

```bash
syscfg /te 4 enable DEL enable enable lfcr cr
```
**Users (/u)**

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

- **User_ID**
  - User ID. Use a decimal integer in the range [1..15]. User ID 1 is usually the anonymous user.

- **User_name**
  - BMC User name consisting of up to 20 ASCII characters in the range 0x21 to 0x7e, except “[” and “]”. Use “” to leave user name as anonymous.

- **Password**
  - 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..

**Examples:**

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

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

- **User_ID**
  - BMC User ID in the range [1..15]

- **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.

**Examples:**

```
syscfg /ue 3 enable 1
```
User Privilege (/up)

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

<table>
<thead>
<tr>
<th>User_ID</th>
<th>BMC user ID.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channel_ID</td>
<td>BMC channel number.</td>
</tr>
<tr>
<td>callback</td>
<td>IPMI privilege level.</td>
</tr>
<tr>
<td>user</td>
<td>operator</td>
</tr>
<tr>
<td>SOL</td>
<td>KVM</td>
</tr>
</tbody>
</table>

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.

Examples:
```
syscfg /up 1 1 admin
syscfg /up 1 1 admin sol
```
## A. Quick Reference

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>syscfg /d</td>
<td>Display information</td>
</tr>
<tr>
<td>syscfg /b</td>
<td>BIOS Administrator Password</td>
</tr>
<tr>
<td>syscfg /bap</td>
<td>BIOS User Password</td>
</tr>
<tr>
<td>syscfg /bht</td>
<td>Hyper-Threading Technology</td>
</tr>
<tr>
<td>syscfg /bck</td>
<td>Console Redirection</td>
</tr>
<tr>
<td>syscfg /bqb</td>
<td>Quiet Boot</td>
</tr>
<tr>
<td>syscfg /bbo</td>
<td>BIOS Boot Order</td>
</tr>
<tr>
<td>syscfg /c</td>
<td>Channel</td>
</tr>
<tr>
<td>syscfg /i</td>
<td>Information</td>
</tr>
<tr>
<td>syscfg /lac</td>
<td>LAN Alert Configuration</td>
</tr>
<tr>
<td>syscfg /lae</td>
<td>LAN Alert Enable</td>
</tr>
<tr>
<td>syscfg /lc</td>
<td>LAN Configuration</td>
</tr>
<tr>
<td>syscfg /le</td>
<td>LAN Enable</td>
</tr>
<tr>
<td>syscfg /mc</td>
<td>Modem Configure</td>
</tr>
</tbody>
</table>

### Channel
```
syscfg /c  [channel_ID]  [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)}
```

### Information
```
syscfg /i  [filename.SCF]
```

### LAN Alert Configuration
```
syscfg /lac  Channel_ID Alert_Destination_Index Alert_Destination_IP_Address Alert_Destination_MAC_Address {enable | disable } {enable | disable } {1..7} {1..255}
```

### LAN Alert Enable
```
syscfg /lae  Channel_ID Gateway_IP_Address {Gateway_MAC_Address | "resolve"} SNMP_Community_String [Backup_Gateway_IP_Address [Backup_Gateway_MAC_Address | "resolve"]]
```

### LAN Configuration
```
syscfg /lc  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) 11 0..127500 12 IP_Address 13 MAC_Address 14 IP_Address 15 MAC_Address 16 SNMP_Community_String}
```

### LAN Enable
```
syscfg /le  Channel_ID {dhcp | (static IP_Address Subnet_Mask)}
```

### Modem Configure
```
syscfg /mc  Channel_ID {Modem_init_string Escape_command Hangup_command Dial_command Ring_dead_time Ring_duration System_phone_number}
```
/pefc  PEF Configure
syscfg /pefc | pefconfig {enable | disable} {none | alert | pdown | reset | pcycle | diagint}

/peff  PEF Filter
syscfg /peff | peffilter {Filter_table_index {enable | disable} {1..15}}

/pefp  PEF Policy
syscfg /pefp | pefpolicy {Policy_table_index {enable | disable} {1..15}}

/prp  Power Restore Policy
syscfg /prp {off | on | restore}

/r  Restore
syscfg /r [filename] {/f | /b | /f /b}

/s  Save
syscfg /s [filename] {/f | /b | /f /b}

/sds  Serial Dial String
syscfg /sds | serialdialstring {Channel_ID Dial_String_Index Dial_string}

/se  Serial Enable
syscfg /se | /serialenable {Channel_ID {callback | user | operator | admin} {9600 | 19200 | 38400 | 57600 | 115200}

/spc  Serial Page Configuration
syscfg /spc | /serialpageconf {Channel_ID Page_Destination_Selector Dial_String_Selector {1 | 2} {7 | 8} {none | odd | even} {9600 | 19200 | 38400 | 57600 | 115200}

/spe  Serial Page Enable
syscfg /spe | /serialpageenable {Channel_ID {0..255} SNMP_Community_String}

/sole  SOL Enable
syscfg /sole | /soleenable {Channel_ID {enable | disable} {user | operator | admin} {9600 | 19200 | 38400 | 57600 | 115200} {0..7} {0..2550}

/te  Terminal Mode Enable
syscfg /te | /termenable {Channel_ID {enable | disable} {BSB | DEL} {enable | disable} {enable | disable} {CRLF | NULL | CR | LFCR | LF} {CR | NULL}

/u  User Configuration
syscfg /u | /user {User_ID User_name Password}

/ue  User Enable
syscfg /ue | /userenable {User_ID {enable | disable} Channel_ID}

/up  User Privilege
syscfg /up | /userprivilege {User_ID Channel_ID {callback | user | operator | admin | none} {SOL | KVM | SOL+KVM}
The Intel® S5000PAL, S5000PSL, and S5000PSA Server Boards have the following IPMI Channel assignments:

<table>
<thead>
<tr>
<th>Channel 1</th>
<th>Baseboard LAN Channel A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Channel 2</td>
<td>Baseboard LAN Channel B</td>
</tr>
<tr>
<td>Channel 3</td>
<td>Optional Intel® Remote Management Module NIC</td>
</tr>
<tr>
<td>Channel 4</td>
<td>Serial Channel</td>
</tr>
</tbody>
</table>

B. IPMI Channel Assignments
## C. List of Saved Settings

The following table lists the firmware settings that are saved and restored with `syscfg`.

### Table 1. Saved Firmware Settings

<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>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>Host IP</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>LAN Alert Settings</td>
<td>Alert Acknowledge Enabled</td>
</tr>
<tr>
<td></td>
<td>Alert IP</td>
</tr>
<tr>
<td></td>
<td>Alert MAC</td>
</tr>
<tr>
<td></td>
<td>Gateway Selector</td>
</tr>
<tr>
<td></td>
<td>Retry Count</td>
</tr>
<tr>
<td></td>
<td>Retry Interval</td>
</tr>
<tr>
<td>User Settings</td>
<td>User Name</td>
</tr>
<tr>
<td></td>
<td>User Password</td>
</tr>
<tr>
<td></td>
<td>Privilege Level Limit</td>
</tr>
<tr>
<td></td>
<td>Callback Status</td>
</tr>
<tr>
<td></td>
<td>Link Authentication Enable</td>
</tr>
<tr>
<td></td>
<td>IPMI messaging enabled</td>
</tr>
<tr>
<td>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>Component</td>
<td>Setting</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>----------------------------------------------</td>
</tr>
<tr>
<td>Alert Policies</td>
<td></td>
</tr>
<tr>
<td>Serial/Modem Settings</td>
<td>Paging Enable</td>
</tr>
<tr>
<td>Per Message Authentication</td>
<td></td>
</tr>
<tr>
<td>User Level Authentication</td>
<td></td>
</tr>
<tr>
<td>Access Mode</td>
<td></td>
</tr>
<tr>
<td>Privilege Level Limit</td>
<td></td>
</tr>
<tr>
<td>Community String</td>
<td></td>
</tr>
<tr>
<td>Authentication Types</td>
<td></td>
</tr>
<tr>
<td>Connection Mode</td>
<td></td>
</tr>
<tr>
<td>Flow Control</td>
<td></td>
</tr>
<tr>
<td>Baud Rate</td>
<td></td>
</tr>
<tr>
<td>DTR Hang-up Enable</td>
<td></td>
</tr>
<tr>
<td>Inactivity Timeout Enabled</td>
<td></td>
</tr>
<tr>
<td>Inactivity Timeout Interval</td>
<td></td>
</tr>
<tr>
<td>Connection Mode Sharing</td>
<td></td>
</tr>
<tr>
<td>Baseboard to BMC Switch</td>
<td></td>
</tr>
<tr>
<td>BMC to Baseboard Switch</td>
<td></td>
</tr>
<tr>
<td>Ping Before MUX Switch</td>
<td></td>
</tr>
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