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Intelligent Platform Management Interface on C3000/C5000 Controllers

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Intelligent Platform Management Interface on C3000/C5000 Controllers

The information in this document is current as of the date on the title page.

YEAR 2000 NOTICE

Juniper Networks hardware and software products are Year 2000 compliant. Junos OS has no known time-related limitations through the year 2038. However, the NTP application is known to have some difficulty in the year 2036.

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Table of Contents

List of Tables

About the Documentation

Documentation and Release Notes

To obtain the most current version of all Juniper Networks® technical documentation, see the product documentation page on the Juniper Networks website at http://www.juniper.net/techpubs/.

If the information in the latest release notes differs from the information in the documentation, follow the product Release Notes.

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Supported Platforms

For the features described in this document, the following platforms are supported:

- Virtualized SRC

Documentation Conventions

Table 1 on page viii defines notice icons used in this guide.

Table 1: Notice Icons

Icon	Meaning	Description
	Informational note	Indicates important features or instructions.
	Caution	Indicates a situation that might result in loss of data or hardware damage.
	Warning	Alerts you to the risk of personal injury or death.
	Laser warning	Alerts you to the risk of personal injury from a laser.
	Tip	Indicates helpful information.
	Best practice	Alerts you to a recommended use or implementation.

Documentation Conventions

defines the notice icons used in this guide. defines text conventions used throughout this documentation.

Table 2: Notice Icons

Icon	Meaning	Description
	Informational note	Indicates important features or instructions.
	Caution	Indicates a situation that might result in loss of data or hardware damage.
	Warning	Alerts you to the risk of personal injury or death.
	Laser warning	Alerts you to the risk of personal injury from a laser.
	Tip	Indicates helpful information.
	Best practice	Alerts you to a recommended use or implementation.

Table 3: Text Conventions

Convention	Description	Examples
Bold text like this	• Represents keywords, scripts, and tools in text. • Represents a GUI element that the user selects, clicks, checks, or clears.	• Specify the keyword **exp-msg**. • Run the **install.sh** script. • Use the **pkgadd** tool. • To cancel the configuration, click **Cancel**.
Bold text like this	Represents text that the user must type.	**user@host# set cache-entry-age** *cache-entry-age*
`Fixed-width text like this`	Represents information as displayed on your terminal's screen, such as CLI commands in output displays.	```nic-locators { login { resolution { resolver-name /realms/ login/A1; key-type LoginName; value-type SaeId; } ```
Regular sans serif typeface	• Represents configuration statements. • Indicates SRC CLI commands and options in text. • Represents examples in procedures. • Represents URLs.	• **system ldap server{** **stand-alone;** • Use the **request sae modify device failover** command with the **force** option • **user@host# . . .** • http://www.juniper.net/techpubs/software/management/sdx/api-index.html

Table 3: Text Conventions *(continued)*

Italic sans serif typeface	Represents variables in SRC CLI commands.	user@host# set local-address *local-address*
Angle brackets	In text descriptions, indicate optional keywords or variables.	Another runtime variable is <gfwif>.
Key name	Indicates the name of a key on the keyboard.	Press Enter.
Key names linked with a plus sign (+)	Indicates that you must press two or more keys simultaneously.	Press Ctrl + b.
Italic typeface	• Emphasizes words. • Identifies book names. • Identifies distinguished names. • Identifies files, directories, and paths in text but not in command examples.	• There are two levels of access: *user* and *privileged*. • *SRC-PE Getting Started Guide*. • *o=Users, o=UMC* • The */etc/default.properties* file.
Backslash	At the end of a line, indicates that the text wraps to the next line.	Plugin.radiusAcct-1.class=\ net.juniper.smgt.sae.plugin\ RadiusTrackingPluginEvent
Words separated by the | symbol	Represent a choice to select one keyword or variable to the left or right of this symbol. (The keyword or variable may be either optional or required.)	diagnostic | line

Documentation Feedback

We encourage you to provide feedback, comments, and suggestions so that we can improve the documentation. You can provide feedback by using either of the following methods:

- Online feedback rating system—On any page of the Juniper Networks TechLibrary site at http://www.juniper.net/techpubs/index.html, simply click the stars to rate the content, and use the pop-up form to provide us with information about your experience. Alternately, you can use the online feedback form at http://www.juniper.net/techpubs/feedback/.

- E-mail—Send your comments to techpubs-comments@juniper.net. Include the document or topic name, URL or page number, and software version (if applicable).

Requesting Technical Support

Technical product support is available through the Juniper Networks Technical Assistance Center (JTAC). If you are a customer with an active J-Care or Partner Support Service support contract, or are covered under warranty, and need post-sales technical support, you can access our tools and resources online or open a case with JTAC.

- JTAC policies—For a complete understanding of our JTAC procedures and policies, review the *JTAC User Guide* located at http://www.juniper.net/us/en/local/pdf/resource-guides/7100059-en.pdf.

- Product warranties—For product warranty information, visit http://www.juniper.net/support/warranty/.

- JTAC hours of operation—The JTAC centers have resources available 24 hours a day, 7 days a week, 365 days a year.

Self-Help Online Tools and Resources

For quick and easy problem resolution, Juniper Networks has designed an online self-service portal called the Customer Support Center (CSC) that provides you with the following features:

- Find CSC offerings: http://www.juniper.net/customers/support/

- Search for known bugs: http://www2.juniper.net/kb/

- Find product documentation: http://www.juniper.net/techpubs/

- Find solutions and answer questions using our Knowledge Base: http://kb.juniper.net/

- Download the latest versions of software and review release notes: http://www.juniper.net/customers/csc/software/

- Search technical bulletins for relevant hardware and software notifications: http://kb.juniper.net/InfoCenter/

- Join and participate in the Juniper Networks Community Forum: http://www.juniper.net/company/communities/

- Open a case online in the CSC Case Management tool: http://www.juniper.net/cm/

To verify service entitlement by product serial number, use our Serial Number Entitlement (SNE) Tool: https://tools.juniper.net/SerialNumberEntitlementSearch/

Opening a Case with JTAC

You can open a case with JTAC on the Web or by telephone.

- Use the Case Management tool in the CSC at http://www.juniper.net/cm/.

- Call 1-888-314-JTAC (1-888-314-5822 toll-free in the USA, Canada, and Mexico).

For international or direct-dial options in countries without toll-free numbers, see http://www.juniper.net/support/requesting-support.html.

Overview

IPMI Overview

IPMI Overview

Intelligent Platform Management Interface (IPMI) is a message-based hardware management interface that enables remote monitoring, management, and recovery capabilities, regardless of the status of the server. It defines a set of interfaces that are common to computer hardware and firmware that you can use to monitor system health and manage the system.

IPMI operates independently of the operating system (OS) and allows you to manage a system remotely even in the absence of the OS or the system management software, or even if the monitored system is not powered on. IPMI can also function when the OS has started.

IPMI version 2.0 and later can send out alerts by means of a direct serial connection, a LAN, or a serial over LAN (SOL) connection to a remote client. You can then query controller status, review hardware logs, or issue other requests from a remote console through the same connections.

Related Documentation

PART 2

Configuration

IPMI Configuration Tasks

Configuring IPMI (SRC CLI)

For the C3000 and C5000 models, an IPMI configuration includes an IP address assigned to the IPMI interface and a gateway IP address.

NOTE: **The configuration statements under the edit system ipmi hierarchy are not supported, if the SRC software is deployed as a virtual machine.**

Use the following configuration statements to configure an IPMI interface on a C Series Controller:

```
system ipmi {
    address address;
    gateway gateway;
    user name;
}
```

To configure IPMI on an interface:

1. From configuration mode, access the configuration statement that configures an IPMI interface.

   user@host# **edit system ipmi**

2. Set the IP address.

   [edit system ipmi]
   user@host# **set address** *address/destination prefix*

   An IP address is required for both the C3000 and C5000 models.

3. Set the default gateway IP address. A default gateway is a node on a network that serves as an access point to another network.

   [edit system ipmi]
   user@host# set gateway *gateway*

4. Verify the configuration.

   [edit system ipmi]
   user@host# show
   address 10.227.7.145/24;
   gateway 10.227.7.1;

Related
Documentation

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Configuring IPMI (C-Web Interface)

For the C3000 and C5000 models, an IPMI configuration includes an IP address assigned to the IPMI interface and a gateway IP address.

To configure IPMI using the C-Web interface:

1. Click **Configure**, expand **System**, and then click **IPMI**.

   The IPMI pane appears.

2. In the Address box, enter an IP address.

   - An IP address is required for both the C3000 and C5000 models.

   - **address** is in the format IP address/destination prefix, such as 10.227.7.145/24.

3. In the Gateway box, enter the default gateway IP address.

   A default gateway is a node on a network that serves as an access point to another network.

4. Click **Apply**.

   The IPMI pane displays the new attributes.

Related
Documentation

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Creating an IPMI User Account (SRC CLI)

An IPMI username and password are required to connect to a remote IPMI interface. You can define new IPMI user accounts using the CLI.

> ℹ️ NOTE: The configuration statements under the edit system ipmi hierarchy are not supported, if the SRC software is deployed as a virtual machine.

To create an IPMI user account using the SRC CLI:

1. From configuration mode, access the configuration statement that configures an IPMI interface.

   user@host# **edit system ipmi**

2. Set a plain-text password that is autoencrypted by the CLI.

   [edit system ipmi]
   user@host# **set user** *name* **plain-text-password**

   For example:

   user@host#**set user johndoe plain-text password**
   New password: **xyz123** (text will not appear)
   Re-type new password: **xyz123** (text will not appear)

3. Verify the configuration.

   [edit system ipmi]
   admin@gnome# **show**
   address 10.227.1.145/24;
   gateway 10.227.7.1;
   user admin {
      encrypted-password ********;
   }
   user jdoe {
      encrypted-password ********;
   }

Related Documentation

Creating an IPMI User Account (C-Web Interface)

An IPMI username and password are required to connect to an IPMI interface. You can create new IPMI user accounts so that IPMI authentication can occur.

To create an IPMI user account using the C-Web interface:

1. Click **Configure**, expand **System**, and then click **IPMI**.

   The IPMI pane appears.

2. Select **User** from the drop-down list, enter the name of the user in the pop-up dialog box, and click **OK**.

   The IPMI / User: (username) pane appears.

3. Enter a password. When the user account is created, the password is encrypted with a Base64 encoding scheme.

4. Click **Apply**.

   The IPMI user appears in the side pane under IPMI.

Related Documentation
- IPMI Overview on page 3
- Commands to Manage an IPMI Interface (SRC CLI) on page 15
- Viewing IPMI User Accounts (SRC CLI) on page 24
- Creating an IPMI User Account (SRC CLI) on page 9
- Viewing IPMI User Accounts (C-Web Interface) on page 25

Deleting an IPMI User Account (C-Web Interface)

To delete an IPMI user account:

1. Click **Configure**, expand **System**, and then click **IPMI**.

2. In the side pane under IPMI, select the user account you want to delete.

   The IPMI / User: (username) pane appears.

3. Click the user account and then click **Delete** in the IPMI / User: (username) pane.

   The user account is deleted.

Related Documentation
- IPMI Overview on page 3
- Creating an IPMI User Account (C-Web Interface) on page 10

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Renaming an IPMI User Account (C-Web Interface)

To rename an IPMI user account:

1. Click **Configure**, expand **System**, and then click **IPMI**.

2. In the navigation tree under IPMI, select the user account you want to rename.

   The IPMI / User: (username) pane appears.

3. Click the user account and then click **Rename** in the IPMI / User: (username) pane.

   The user account is deleted.

4. Type a new name and click **OK**.

   The user account is renamed.

Related Documentation

- IPMI Overview on page 3

- Creating an IPMI User Account (C-Web Interface) on page 10

- Viewing IPMI User Accounts (SRC CLI) on page 24

- Creating an IPMI User Account (SRC CLI) on page 9

- Viewing IPMI User Accounts (C-Web Interface) on page 25

- Deleting an IPMI User Account (C-Web Interface) on page 10

PART 3

Administration

CHAPTER 3

IPMI Management

Commands to Manage an IPMI Interface (SRC CLI)

You can use the following operational mode commands to manage IPMI interfaces:

> NOTE: These operational mode commands are not supported, if the SRC software is deployed as a virtual machine.

- **ipmisol open**
- **ipmisol close remote-session**
- **ipmisol close local-session**

Related Documentation
- For detailed information about each command, see the *SRC PE CLI Command Reference*.
- IPMI Overview on page 3
- Configuring IPMI (SRC CLI) on page 7
- Creating an IPMI User Account (SRC CLI) on page 9

Powering the Local Controller On and Off Using IPMI (SRC CLI)

You can power on or off, and reset the C Series Controller you are currently logged in to.

To execute a power command in the local controller using IPMI:

1. Log in to the C Series Controller.

2. Enter the **request ipmi power** command.

> ℹ️ NOTE: The request ipmi power command is not supported, if the SRC software is deployed as a virtual machine.

user@host>**request ipmi power (on | off | soft-off | reset| cycle)**

- on—Power on a C Series Controller.

- off—Power off a C Series Controller. This command does not initiate a clean shutdown of the operating system before powering off the system.

- soft-off—Power off a C Series Controller softly. This command initiates a soft shutdown of the operating system before powering off the system.

- reset—Perform a hard reset on a C Series Controller.

- cycle—Power off and then power on a C Series Controller.

For example:

user@host>**request ipmi power off**

Related
Documentation

- IPMI Overview on page 3

- Commands to Manage an IPMI Interface (SRC CLI) on page 15

- Powering a Remote Controller On and Off Using IPMI (SRC CLI) on page 16

- Configuring IPMI (C-Web Interface) on page 8

Powering a Remote Controller On and Off Using IPMI (SRC CLI)

You can power on or off, and reset a remote C Series Controller.

To execute a power command on a remote controller using IPMI:

1. Log in to the C Series Controller.

2. Enter the **request ipmi host user power** command.

> ℹ️ NOTE: The request ipmi host user power command is not supported, if the SRC software is deployed as a virtual machine.

user@host>**request ipmi host** *host* **user** *user* **power (on | off | soft-off | reset| cycle)**

where:

- host—IP address of the remote IPMI module.

- user—IPMI user account name.

For example:

user@host>**request ipmi host 10.10.10.30 user johndoe power reset**

3. When prompted, enter the IPMI password configured on the remote system.

<table>
<tr><td>Related
Documentation</td><td>

- IPMI Overview on page 3

- Commands to Manage an IPMI Interface (SRC CLI) on page 15

- Powering the Local Controller On and Off Using IPMI (SRC CLI) on page 15

- Configuring IPMI (C-Web Interface) on page 8

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</table>

Connecting to a Serial Console Using IPMI Serial over LAN (SOL) (SRC CLI)

IPMI SOL enables a remote user to monitor and manage a C Series Controller through a serial console by means of an IPMI session. IPMI SOL redirects the C Series Controller's serial port input and output over IP. To connect to a remote serial console using IPMI SOL, the remote system must have IPMI configured. Only one IPMI SOL connection is allowed per IPMI interface.

> NOTE: On C3000 and C5000 Controllers, the IPMI SOL connection overrides the serial connection available on the front panel. Therefore, if you have a terminal directly connected through the serial port, then IPMI SOL disconnects that terminal and takes over the connection.

To connect to a serial host using IPMI SOL:

- From operational mode, enter the **ipmisol open** command to connect to a serial console.

  > NOTE: The ipmisol open command is not supported, if the SRC software is deployed as a virtual machine.

  user@host>**ipmisol open host** *host* **user** *user*

  - host—IP address of the remote host IPMI interface.

  - user—IPMI username configured in the remote host.

  For example:

  user@host>**ipmisol open host 10.10.10.30 user johndoe**

To exit the current IPMI SOL session, enter ~.

> ⓘ NOTE: ~ is the default escape sequence for SSH, which means it may terminate the SSH CLI session instead of terminating the IPMI SOL session. We recommend that you use either an SSH client that does not use this escape sequence, or the command-line option -e to specify an alternative escape character (see the documentation of your SSH client).

Related Documentation

- IPMI Overview on page 3
- Commands to Manage an IPMI Interface (SRC CLI) on page 15
- Disconnecting from a Serial Console Using IPMI Serial over LAN (SOL) (SRC CLI) on page 18
- Creating an IPMI User Account (SRC CLI) on page 9
- Creating an IPMI User Account (C-Web Interface) on page 10

Disconnecting from a Serial Console Using IPMI Serial over LAN (SOL) (SRC CLI)

Only one IPMI SOL connection is allowed per IPMI interface. You can close the active IPMI connection to a local host or a remote host.

To disconnect from a local host using IPMI SOL:

- From operational mode, enter the **ipmisol close local-session** command to close the active IPMI connection to a local host.

> ⓘ NOTE: The **ipmisol close local-session** command is not supported, if the SRC software is deployed as a virtual machine.

    user@host>**ipmisol close local-session host**

To disconnect from a remote host using IPMI SOL:

- From operational mode, enter the **ipmisol close remote-session** command to close the active IPMI connection to a remote host.

    user@host>**ipmisol close remote-session host** *host* **user** *user*

  - host—IP address of the remote host IPMI interface.
  - user—IPMI username configured in the remote host.

  For example:

    user@host>**ipmisol close remote-session host 10.10.10.30 user johndoe**

Related Documentation

- IPMI Overview on page 3
- Commands to Manage an IPMI Interface (SRC CLI) on page 15

IPMI Monitoring

Viewing IPMI Information on a Local Chassis (SRC CLI)

Purpose   To display the IPMI chassis information on the local C Series Controller.

> NOTE: The **show ipmi chassis** command is not supported, if the SRC software is deployed as a virtual machine.

Action   1. Log in to the C Series Controller.

2. Enter the **show ipmi chassis** command.

For example:

user@host>**show ipmi chassis**

```
user@host> show ipmi chassis

System Power        : on
Power Overload      : false
Power Interlock     : inactive
Main Power Fault    : false
Power Control Fault : false
Power Restore Policy : always-off
Last Power Event    : command
Chassis Intrusion   : inactive
Front-Panel Lockout : inactive
```

```
Drive Fault        : false
Cooling/Fan Fault  : false
Front Panel Control : none
```

Viewing IPMI Information on a Remote Chassis (SRC CLI)

Purpose To display the IPMI chassis information on a remote C Series Controller.

> NOTE: The **show ipmi host chassis** command is not supported, if the SRC software is deployed as a virtual machine.

Action 1. Log in to the C Series Controller.

2. Enter the **show ipmi host chassis** command.

    user@host>**show ipmi host** *host* **user** *user* **chassis**

    - host—IP address of the remote host IPMI interface.

    - user—IPMI username configured on the remote host.

    For example:

    user@host>**show ipmi host 10.10.10.30 user johndoe chassis**

Monitoring Sensor Data Repository Information Using the IPMI on a Local Chassis (SRC CLI)

Purpose Display IPMI Sensor Data Repository readings and status on the local C Series Controller.

> NOTE: The **show ipmi sdr** command is not supported, if the SRC software is deployed as a virtual machine.

Action   To display Sensor Data Repository information using IPMI:

```
user@host>show ipmi sdr
CPU0 below Tmax   | 53 degrees C     | ok
CPU1 below Tmax   | disabled         | ns
DIMM0 Area(RT3)   | 32 degrees C     | ok
PCI Area(RT2)     | 39 degrees C     | ok
CPU0 VCORE.       | 0.91 Volts       | ok
CPU1 VCORE        | disabled         | ns
3.3V              | 3.38 Volts       | ok
+12V              | 11.90 Volts      | ok
VBAT              | 3.30 Volts       | ok
5V                | 4.92 Volts       | ok
Sys.2(CPU 0)      | 3330 RPM         | ok
Sys.3(Front 1)    | 3420 RPM         | ok
Sys.4(Front 2)    | 3420 RPM         | ok
PS1 Present       | 0x02             | ok
PS1 PG            | 0x01             | ok
OTP1              | 0x01             | ok
PS1 FAN           | 0x01             | ok
PS2 Present       | 0x02             | ok
PS2 PG            | 0x01             | ok
OTP2              | 0x01             | ok
PS2 FAN           | 0x01             | ok
```

Related Documentation
- IPMI Overview on page 3
- Commands to Manage an IPMI Interface (SRC CLI) on page 15
- Configuring IPMI (C-Web Interface) on page 8

Viewing the Power Status of the Local Controller Using IPMI (SRC CLI)

Purpose   To display the power status (on or off) of the local controller using IPMI.

> NOTE: The **show ipmi power** command is not supported, if the SRC software is deployed as a virtual machine.

Action   1. Log in to the C Series Controller.

2. Enter the **show ipmi power** command.

   For example:

```
user@host>show ipmi power
Chassis Power is on
```

Related
Documentation

- IPMI Overview on page 3
- Commands to Manage an IPMI Interface (SRC CLI) on page 15
- Viewing the Power Status of a Remote Controller Using IPMI (SRC CLI) on page 24
- Configuring IPMI (C-Web Interface) on page 8

Viewing the Power Status of a Remote Controller Using IPMI (SRC CLI)

Purpose   To display the power status (on or off) of a remote controller using IPMI.

NOTE: The show ipmi host power command is not supported, if the SRC
software is deployed as a virtual machine.

Action   1. Log in to the C Series Controller.

2. Enter the show ipmi host power command.

user@host>show ipmi host *host* user *user* power

- host—IP address of the remote host IPMI interface.
- user—IPMI username configured in the remote host.

For example:

user@host>show ipmi host 10.10.10.30 user johndoe power

Related
Documentation

- IPMI Overview on page 3
- Commands to Manage an IPMI Interface (SRC CLI) on page 15
- Viewing the Power Status of the Local Controller Using IPMI (SRC CLI) on page 23
- Configuring IPMI (C-Web Interface) on page 8

Viewing IPMI User Accounts (SRC CLI)

Purpose   To display the IPMI user accounts.

Action   From configuration mode, enter the **show** command to display all IPMI user accounts.

> **NOTE:** The configuration statements under the **edit system ipmi** hierarchy are not supported, if the SRC software is deployed as a virtual machine.

```
[edit system ipmi]
admin@gnome# show
address 10.227.1.145/24;
gateway 10.227.7.1;
user admin {
   encrypted-password ********;
}
user jdoe {
   encrypted-password ********;
}
```

Related Documentation
- IPMI Overview on page 3
- Commands to Manage an IPMI Interface (SRC CLI) on page 15
- Creating an IPMI User Account (SRC CLI) on page 9
- Viewing IPMI User Accounts (C-Web Interface) on page 25

Viewing IPMI User Accounts (C-Web Interface)

Purpose   To display the IPMI user accounts.

Action   Click **Configure**, expand **System**, and then click **IPMI>User**.

IPMI user accounts are listed in the main pane.

Related Documentation
- IPMI Overview on page 3
- Commands to Manage an IPMI Interface (SRC CLI) on page 15
- Viewing IPMI User Accounts (SRC CLI) on page 24
- Creating an IPMI User Account (SRC CLI) on page 9
- Creating an IPMI User Account (C-Web Interface) on page 10