VERTIV.

Avocent® ACS800/8000 Advanced Console System

Command Reference Guide

Technical Support Site

If you encounter any installation or operational issues with your product, check the pertinent section of this manual to see if the issue can be resolved by following outlined procedures. For additional assistance, visit https://www.VertivCo.com/en-us/support/

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1 INTRODUCTION, NAVIGATION AND COMMANDS

The Avocent® ACS800/8000 Advanced Console System is a 1U appliance that serves as a single point for access and administration of connected devices, such as target device consoles, modems and power devices. Console systems support secure remote data center management and out-of-band management of IT assets from any location worldwide.

This guide describes how to access and navigate the Command Line Interface (CLI) utility and how to use it after the console system has been installed and assigned an IP address. For information on how to install or operate your console system using the web user interface (UI), see the Avocent® ACS800/8000 Advanced Console System Installation/User Guide.

1.1 Access Options and How to Log in to the CLI

The CLI utility can be accessed in the following ways:

- Through a local terminal or a computer that has a terminal emulation program connected to the console port of the console system with session settings of 9600, 8, N and 1, with no flow control. The local console speed can be modified in the device's boot configuration.
- After the console system is connected to the network and has an IP address, it can be accessed by one of the following methods:
    - An SSH or Telnet client on a remote computer (if the SSH or Telnet protocol is enabled in the selected Security Profile)
    - With the *Web Manager - Access - Appliance Viewer* button
    - With DSView management software

NOTE: For details on the remote access methods and IP address configuration options, see the Avocent® ACS800/8000 Advanced Console System Installation/User Guide.

Administrators have full access to the CLI and to connected devices. An administrator can authorize regular users to access ports, manage power, manage data buffer storage and use one or more console system administration tools. Users can always change their own passwords.

To start the CLI:

1. An administrator can access the CLI through the console port, with Telnet, SSH or through the web manager.
2. Enter the username and password at the prompt. The cli-> prompt appears.

    -or-

    A root user logs into the Linux shell by default. From the shell, type **cli** to launch the CLI.

```
Welcome to ACS8000 <host name>.
Type help for more information
--:- / cli->
```

The default password for admin is **avocent** and for root is **linux**. The password for these users may have been changed during installation of the console system. If not, change the default root and admin passwords to avoid potential security breaches.

1.2 Configuration Tasks Performed With the CLI

The navigation structure of the CLI mirrors that of the web manager. Options and parameters are also the same, except that spaces in web manager options and parameters are replaced with underscores (_), as in system_tools. Examples that show how to select an option in the web manager use a dash surrounded by two spaces (-). In the CLI, two similar options in a path are separated by a forward slash (/).

For example, in the web manager, user configuration is done when an administrator selects *Users - Local Accounts - User Names* to get to the User Names screen. To navigate to the equivalent configuration level in the CLI, an administrator would use the cd command followed by the path: **cd /users/local_accounts/user_names**.

Administrators should log into the CLI in one window and log into the web manager in another window to see how the menu options in the web manager map to the navigation options in the CLI. Configuration with the CLI also requires mastery of the following information on CLI navigation and of the CLI commands. For more information, see CLI Command Set on page 5

1.3 CLI Navigation

The CLI navigation options are in a nested tree configuration.

When a command line is shown in an example, and the step starts with "Enter," or when a syntax example is given, the user should type the command as shown and then press **Enter**. The **Enter** key is not shown in command line examples unless needed for clarity.

When a user logs in the CLI, the prompt indicates the user is at the / level.

```
--:- / cli->
```

No parameters can be set at this level of the navigation tree.

At any CLI prompt at any level, if you type **cd** <**space**> **Tab Tab** or **cd Tab Tab Tab,** the navigation options (path elements) for that level are listed. Different options appear for administrators and for authorized users.

- When an administrator types the **cd** command and then presses **Tab Tab** at the / prompt, the following navigation options (path elements) appear.

```
--:-/ cli->cd
```

access/	monitoring/	sensors/
active_sessions/	network/	system/
authentication/	pluggable_ devices/	system_ tools/
change_password/	ports/	users/
events_and_logs/	power_ management	

When a regular user types the **cd** command and then presses **Tab Tab** at the / prompt, the following navigation options appear.

```
--:-/ cli->cd

access/    change_password/      power_management/
```

Enter **cd** <one_or_more_path_elements> to move down one or more levels of the navigation tree:

```
--:- / cli-> cd system_tools
```

A prompt like the following appears at each level:

```
--:- system_tools cli->
```

NOTE: CLI commands are case sensitive.

At any level, you can press **Tab Tab** at the prompt to see the commands that can be entered at the current level.

```
--:- / cli->
```

add	pwd
cd	quit
clone_ports	reboot
commit	reset_port_to_ factory
configuration_integrity	restore_ configuration
delete	revert
disable_ports	save_configuration
echo	scp
edit	set
enable_ports	set_cas
exit	set_dial-in
factory_defaults	set_dial-out
finish	set_power
ftp	set_socket-client
generate_|_download_ certificate	shell
help	show
hostname	shutdown
list_configuration	upgrade_firmware

ls	whoami
opiepasswd	wiz
passwd	

If you know the path, you can enter multiple path elements in a single command separated with forward slashes (/).

```
--:- / cli-> cd ports/serial_ports/
--:- serial ports cli->
```

Enter **cd ..** to move up one level of the navigation tree. Enter **cd ../..[/..]** to move up multiple levels.

```
--:- serial ports cli-> cd ../..
--:- / cli->
```

1.4 Autocompletion

Autocompletion allows you to type the first few letters of a command or navigation option and then press **Tab**. The rest of the name is filled in automatically if the letters typed are unique to one command or to a navigation option at that level. If the letters match more than one of the commands or navigation options for that level, the matching options are listed.

For example, if you type **cd acc** and press **Tab** at the CLI prompt from the / level, the access option will be completed.

```
--:- / cli-> cd acc <tab>
--:- / cli-> cd access
```

If you then press **Enter**, you are changed to the access level, and the access level prompt appears.

```
--:- access cli->
```

The following example illustrates a case when more than one command matches the letters typed.

```
--:- / cli-> sh <tab> <tab>
shell show
```

1.5 Parameters

Some CLI commands take parameters. If you press **Tab Tab** after a command that requires a parameter, you are prompted to enter the parameter.

2 CLI COMMAND SET

2.1 Commands Used for the CLI

This section describes the general commands used when accessing the console system with the command line interface.

NOTE: Most of the commands work from any location when the path to the command parameter is included.

NOTE: The word "node" refers to an entity such as a route, host or user, which can be added, configured or deleted.

2.1.1 add

Add a node.

Syntax:

```
--:- / cli-> add <Path>
```

Example:

```
--:- / cli-> add network/hosts
--:#- [hosts] cli->
```

2.1.2 cd

Change directory (level).

Syntax:

```
--:- / cli-> cd <Path>
```

Example:

```
--:- / cli-> cd access
```

Displays the following:

```
--:- access cli->
```

Example:

```
--:- access cli-> cd ..
```

-or-

```
--:- access cli-> cd ../
```

Moves up one directory level and displays the following:

```
--:- / cli->
```

Example:

```
--:- access cli-> cd /
```

Moves to the top level and displays the following:

```
--:- / cli->
```

Example:

```
--:- access cli-> cd /information
```

Displays the following:

```
--:- information cli->
```

2.1.3 commit

Save settings.

Syntax:

```
**:- settings cli-> commit
```

2.1.4 delete

Delete a node.

Syntax:

```
--:- / cli-> delete <Path> <parameter>
```

2.1.5 exit/quit

Exit the CLI and return to the login prompt.

Syntax:

```
--:- / cli-> exit
```

-or-

```
--:- / cli-> quit
```

2.1.6 ftp

Connect to a remote FTP server.

Syntax:

```
--:- / cli-> ftp [<server_IP_address>|<hostname>]
```

NOTE: You must log into the CLI as root to have full control over the local directory path. All normal FTP commands apply.

2.1.7 help

Generate a help message about how to navigate the CLI.

Syntax:

```
--:- / cli-> help

- Thank you for using the cli -
Some basic and useful keys are:
- tab (once/twice) - shows the next possible commands/option(s)
- up/down arrow - navigates up/down in the command history
- ls - shows sub-nodes
- show - shows available configuration in the node
- cntrl e - gets the current parameter value for editing
Other hints:
- Use backslash '\' to escape spaces, '\' and other control characters when assigning values to parameters.
```

2.1.8 list_configuration

List the configuration in a format that allows pasting the output directly on the appliance session (console, SSH or Telnet) in order to (re)configure the unit.

All configurable parameters are listed under the current node. When the parameter is not configured, the parameter name has the number sign character (#) as its prefix.

Syntax:

```
--:- / cli-> list_configuration
```

Example:

```
.list configuration of network device eth0:
--:- cli-> cd network/devices/eth0
--:- eth0 cli-> list_configuration
echo off
cd /network/devices/eth0
batch_mode
set status=enabled
set ipv4_method=dhcp
#set ipv4_method=static #ipv4_address=192.168.160.10 #ipv4_mask=255.255.255.0
#set ipv4_method=ipv4_address_unconfigured
#set ipv6_method=stateless
#set ipv6_method=dhcpv6
#set ipv6_method=static #ipv6_address= #ipv6_prefix_length=
set ipv6_method=ipv6_address_unconfigured
set mode=auto
submit
echo on
commit
--:- eth0 cli->
```

NOTE: Check the configuration of the program used to open a session against the appliance (SSH/Telnet, TeraTerm / HypertTerminal for console, and so on) to avoid the inclusion of a line feed character in lines that exceed terminal width, because this will affect the paste operation.

2.1.9 ls

Show the available directories or subnodes at the current location.

Syntax:

```
--:- / cli-> ls
```

Example:

```
--:- / cli-> ls authentication
appliance_authentication/
authentication_servers/
--:- / cli->
```

2.1.10 opiepasswd

Configure a one time password (OTP) for the local user. After you type the command, you will be asked for the passphrase to use for the OTP.

NOTE: Use this command to restart the sequence number.

Syntax:

```
--:- / cli-> opiepasswd -f -c <username>
```

Example:

```
opiepasswd -f -c teste
Adding teste:
Only use this method from the console; NEVER from remote. If you are using telnet, xterm, or a dial-in,
type ^C now or exit with no password.
Then run opiepasswd without the -c parameter.
Using MD5 to compute responses.
Enter new secret pass phrase:
Again new secret pass phrase:
ID teste OTP key is 499 AC0241
FOOD HUGH SKI ALMA LURK BRAD
```

2.1.11 pwd

Display the path to the current level (print working directory).

Syntax:

```
--:- / cli-> pwd
```

2.1.12 passwd

Configure the password for the current user. The terminal does not echo the password.

Syntax:

```
--:- / cli-> passwd
```

2.1.13 revert

Undo a previous parameter setting.

Syntax:

```
**:- / cli-> revert
```

2.1.14 scp

Perform a secure shell copy.

Syntax:

```
--:- / cli-> scp [[user@]host1:]file1 [...] [[user@]host2:]file2
```

2.1.15 set

Set a parameter.

Syntax:

```
--:- / cli-> set <Path> <Parameter>=<Value>
```

After a parameter has been changed using the set command, a pair of asterisks appear at the beginning of the CLI prompt.

```
**:- / cli->
```

Save the change:

```
**:- / cli-> commit
```

-or-

Undo the change:

```
**:- / cli-> revert
```

NOTE: After a commit or revert command, the asterisks at the beginning of the CLI prompt are replaced by hyphens. Asterisks will not appear after the execution of the set command if using wizard mode, which can be recognized by a prompt that has a pound sign after the colon and the current directory in square brackets (example, --:#- [hosts] cli->).

2.1.16 show

Show the content of the current location (shows tables and parameters with current values).

Syntax:

```
--:- / cli-> show
```

Example:

```
--:- language cli-> show
appliance_language = english
--:- / cli->
```

2.1.17 wiz

Configures the IP parameters for the Eth0 interface. Shows the current configuration and asks for new values for the following parameters:

- Status of the interface (enabled or disabled)
- IPv4 method (dhcp or static)
- IPv6 method (dhcp or static)
- IP address, mask and gateway (if static is chosen for either of the previous parameters)
- DNS Primary Server, Secondary Server, Domain Name and Hostname
- Enable or disable IPv6 support

After setting all parameters, confirm that all parameters are correct to save them.

2.1.18 connect

Connect to a serial port.

Syntax:

```
--:- access cli-> connect <port_name>
```

Example:

```
--:- access cli-> connect 77-77-70-p-2
```

Displays the following:

```
Password:
```

-or-

Type the hotkey to suspend the connection:

Ctrl + z

NOTE: The connect, sniff and share commands allow you to connect to serial ports. These commands require authentication when single sign-on is disabled, so the password must be entered to authenticate the user in the authentication type configured for the serial port. If single sign-on is enabled or the user has already been authenticated, the session is opened.

2.1.19 disconnect

Use the text session hotkey to suspend the target session and return to the CLI.

Syntax:

Ctrl+z

2.1.20 cycle, on, off, lock and unlock

Control power on outlets on a PDU that is either connected to a serial port or to the AUX/Modem port when the port is enabled and configured with the Power Profile.

NOTE: Lock and unlock commands are only supported on Cyclades and Avocent PDUs.

To power control (on, off, cycle) all outlets of PDUs or outlets merged to a target (serial port configured as CAS profile with merged outlets):

1. Go to the access level.

--:- / cli-> **cd/ access**

2. Launch the power command with the argument being the target name or PDU ID.

--:- access cli-> **[cycle|on|off][<PDU_ID>]|<target name>]**

To power control (on, off, cycle) outlets of one specific PDU:

1. Go to the PDU level under access.

--:- / cli-> **cd access/<PDU_ID>**

2. Launch the power command with a specific outlet (number or name), range of outlets (use a hyphen to specify the range) or list of outlets (number or name separated by a comma).

--:- <PDU_ID> cli-> **[cycle|on|off][<outlet name>|<outlet number>]**

-or-

--:- <PDU_ID> cli-> **[cycle|on|off]<outlet number>-<outlet number]**

-or-

--:- <PDU_ID> cli-> **[cycle|on|off]<outlet number>,<outlet number>**

To power control (on, off, cycle, lock, unlock) outlets of one specific PDU under the power management level:

1. Go to the outlet level for the specific PDU.

--:- / cli-> **cd power_management/pdus/<PDU_ID>/outlets**

2. Launch the power command with a specific outlet number, range of outlets (use a hyphen to specify the range) or list of outlets (number or name separated by a comma).

--:- outlets cli-> **[cycle|on|off] [<outlet number>]**

-or-

```
--:- outlets cli->  [cycle|on|off] <outlet number>-<outlet number]
```

-or-

```
--:- outlets cli->  [cycle|on|off] <outlet number>,<outlet number>
```

2.2 Special Multi-session Commands

The following commands require navigation to an enabled and configured port to which one or more users are simultaneously connected. To get to the port, enter the following command.

```
--:- / cli->  cd access/<serial_port_ID>
```

2.2.1 sniff

Connect to a serial port as an additional, view-only user.

Syntax:

```
--:- / <port name> cli->  sniff
```

Example:

```
--:- / 77-77-70-p-2 cli->sniff
```

Displays the following:

```
Password:
```

-or-

Type the hotkey to suspend the connection:

Ctrl + z

2.2.2 share

Connect to a serial port as an additional, read/write user.

Syntax:

```
--:-/ <port_name> cli->  share
```

Example:

```
--:- / 77-77-70-p-2 cli->share
```

Displays the following:

```
Password:
```

-or-

Type the hotkey to suspend the connection:

Ctrl + z

2.2.3 list_shared_session

List the users connected to the shared serial port.

Syntax:

```
--:- <serial_port_ID> cli-> list_shared_session
```

2.2.4 kill_shared_session

Terminate the connection of a user on the port. The user is returned to the cli-> prompt.

NOTE: You must enable the Kill Multi Session option from the Port Access Rights settings for this command to be available.

Syntax:

```
--:- <serial_port_ID> cli-> kill_shared_session <username>
```

Example:

```
--:- <serial_port_ID> cli-> kill_shared_session admin@139
```

2.2.5 sendmsg

Send a message to a user connected to the port.

NOTE: You must enable the Send Message Multi Session option from the Port Access Rights settings for this command to be available.

Syntax:

```
--:- <serial_port_ID> cli-> sendmsg <username> <message>
```

Example:

```
--:- <serial_port_ID> cli-> sendmsg admin@139 You are being terminated.
```

2.2.6 show_databuf and show_appliance_databuf

View the data buffer files for the port. Data buffering must be enabled in the CAS Profile for the port and the user must be authorized for data buffer management.

Syntax:

```
--:- <serial_port_ID> cli-> show_databuf
```

View the data logging for the appliance. Appliance Session Data logging must be enabled in Events and Logs/Appliance Logging.

Syntax:

```
--:- / cli -> show_appliance_databuf
```

The following commands are available for show data buffering:

- **Return** - Scroll forward one line.
- **Ctrl + F** - Scroll forward one window.
- **Ctrl + B** - Scroll backward one window.
- **/pattern** - Search foward in the file for the first line containing the pattern.
- **?pattern** - Search backward in the file for the first line containing the pattern.
- **n** - Repeat the search.
- **q** - Quit.

2.2.7 cleandbuf and clean_appliance_databuf

Clear the data buffer. Data buffering must be enabled in the CAS Profile for the port and the user must be authorized for data buffer management.

Syntax:

```
--:- <serial_port_ID> cli-> clean_databuf
```

Clear the data logging for the appliance. Appliance Session Data logging must be enabled in Events and Logs/Appliance Logging.

Syntax:

```
--:- / cli -> clean_appliance_databuf
```

2.3 CLI Equivalent Actions to Web Manager Checkbox Selection

NOTE: The following example procedure, which configures IPv6, illustrates the actions to use in the CLI to enable or disable an option when a checkbox would be selected or deselected in the web manager. The sub-parameters will be available after the option is enabled.

To configure IPv6 (example of how to perform the equivalent of web manager checkbox selection/deselection):

1. Log into the CLI and enter cd network/settings.

--:- / cli-> **cd network/settings**

2. Enter show to view the status of IPv6 configuration.

--:- settings cli-> show
hostname = ACS8048
primary_dns = 110.126.129.4
secondary_dns =
domain = corp.tst.com
search =
enable_lldp = no
enable_ipv6 = no
get_dns_from_dhcpv6 = no
get_domain_from_dhcpv6 = no
multiple_routing = none
enable_bonding = no

3. Type set enable_ipv6= and press Tab to view the options for the parameter.

--:- settings cli-> set enable_ipv6=
no yes

4. Enter set enable_ipv6=no to disable IPv6.

--:- settings cli-> set enable_ipv6=no

-or-

Enter set enable_ipv6=yes to enable IPv6.

--:- settings cli-> set enable_ipv6=yes

5. (Optional) Enter either of the following commands to enable subparameters.

```
**:- settings cli-> set get_dns_from_dhcpv6=yes
**:- settings cli-> set get_domain_from_dhcpv6=yes
```

6. Enter **show** to verify the change.

```
**:- settings cli-> show
hostname = ACS8048
primary_dns = 110.126.129.4
secondary_dns =
domain = corp.tst.com
search =
enable_lldp = no
enable_ipv6 = yes
get_dns_from_dhcpv6 = no
get_domain_from_dhcpv6 = no
multiple_routing = none
enable_bonding = no
```

7. Enter **commit**.

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3 PORT ACCESS AND CONFIGURATION EXAMPLES

By default, all serial ports and the modem port are disabled. An administrator must enable and configure the ports before anyone can use them. Configuration of ports differs based on the type of connected device, which can be a device console, PDU or modem.

By default, all users can access all enabled and configured ports. The administrator must decide whether to restrict user access to ports by the assignment of authorizations to user groups. A user who is in an authorized group is referred to as an authorized user.

Some port configuration tasks are provided as examples of how to use the CLI. See the Avocent® ACS 800/8000 Advanced Console System Installation/User Guide for an overview of the tasks the administrator must do to configure restricted access to ports. For more information about how to follow the web manager procedures in the CLI, see Configuration Tasks Performed With the CLI on page 2.

This section describes the following tasks related to port access, configuration, power management and where the tasks are performed in the CLI.

Table 3.1 Port Access and Configuration Tasks

TASK	WHERE PERFORMED
View information about the console system and the connected devices	access show
Authorized users access enabled on configured ports	access connect
Authorized users manage power on outlets	access/<PDU_ID>/outlets -or- power_management/PDUs/<PDU_ID>/outlet_table
Administrators configure ports connected to the consoles of devices	ports See Chapter 3 for all Ports options

3.1 View Information About the Console System and Connected Devices

When a regular user or an administrator enters show at the Access level, information about the following appears in the format shown in Access Parameters on page 19.

- The console system
- The serial ports that user is authorized to access (if they are configured with the CAS or Power Profile)

Table 3.2 Access Parameters

FIELD	DESCRIPTION
For Appliance	
Name	Name assigned to the appliance (for example, ACS8048-1357908642)
Port	N/A
Type	N/A
Status	N/A
For Serial Port	
Name	Either the default name [*XX-XX-XX*-p-*n* (where *n*=port_number)], an administrator-assigned alias or an auto-discovered server name
Port	Number of the serial port
Type	Serial
Status	Idle / In-Use
For Power	
Name	PDU ID (either the default name in the format *XX-XX-XX*P*XX_n* or an administrator-assigned alias, such as myPDU)

FIELD	DESCRIPTION
Port	Number of the serial port/position on the chain
Type	PDU model
Status	Number of Outlets ON	Total outlets
For Outlets	Enter cd <PDU_ID>/outlets and enter show to see list of outlets and the actions that can be taken (commands that can be executed) for each outlet as shown below.
Name	Either the default *XX-XX-XXPXX_n_n* or an administrator-assigned name
Port	PDU outlet number
Type	Outlet
Status	ON / OFF
Action	None

To view information about the console system and connected devices:

1. Log into the CLI and enter **cd access** to change to the Access level.

```
--:- / cli-> cd access
```

2. Enter **show**. Information about the console system and the ports the current user is authorized to access appears.

```
--:- access cli-> show

name                             port        type        status
==================               ====        =====       =====
ACS8048-0011223344
21-67-72-p-1                     1           serial      in use
21-67-72-p-2                     2           serial      idle
21-67-72-p-3                     3           serial      idle
Type ls to see available sub-nodes.
--:- access cli->ls
21-67-72-p-1/
21-67-72-p-2/
21-67-72-p-3/
```

3.2 Connect to a Device Console Connected to a Serial Port

The following procedure is an example of how an administrator or an authorized user can connect to a device console when the device is connected to a port that is enabled and configured with the CAS Profile.

To connect to a device console connected to a serial port:

NOTE: The serial port must already be configured and enabled prior to this procedure. See Port Configuration Examples on page 22.

1. Log into the CLI and enter **cd access** to navigate to the Access level.

```
--:- / cli-> cd access
```

```
--:- access cli->
```

2. Enter **connect <serial_port_name>**. If authentication is configured for the port, the Password prompt appears when single sign-on is disabled.

```
--:- access cli-> connect 77-77-70-p-2
```

```
Password:
```

NOTE: The connect command above shows a connection to a port that has an alias of 77-77-70-p-2.

3. If prompted, enter the password for the port. The following prompt appears.

```
Type the hot key to suspend the connection: <CTRL>z
```

4. Press **Enter** to continue. You are connected to the device that is connected to the port. The window shows the initial display for the device (usually a console banner and login prompt). An example is shown below.

```
Ubuntu 6.06.1 LTS fremont-techpubs ttyS2
login: fred
Password:
Last login: Tue Oct 2 13:09:04 2007 on :0
Linux fremont-techpubs 2.6.15-28-386 #1 PREEMPT Wed Jul 18 22:50:32 UTC 2007 i68
 6 GNU/Linux
#
```

3.3 Accessing Serial Ports using ts_menu

The ts_menu is an application to facilitate connection to the serial ports. It displays a menu showing the server names connected to the serial ports of the console system. You must configure the login profile for the group that the users belong to as ts_menu.

ts_menu options

-u <user> [-l] [-ro] <console port>

Table 3.3   ts_menu Parameters

PARAMETER	DESCRIPTION
-u <user>	Invokes ts_menu as the user named by <user>. This requires a password to be entered. The user only has access to authorized serial ports.

PARAMETER	DESCRIPTION
-l	Generates a list of ports the user can access. Port aliases are shown if defined.
-ro	Invokes ts_menu in read-only mode. You may connect in read-only mode to any port you have access to.
<console port>	If issued, produces a direct connection to that port. If you have no access rights to the port or if the port does not exist, the application returns a console not found message and terminates. The console port may be the port alias or the port number.
-p	Display TCP port.
-i	Display Local IP assigned to the serial port.
-u <name>	Username to be used in SSH/Telnet or Raw command.
-e <[^]char>	Escape character used to close the target session. The default escape character is Ctrl-X.

To close the target session:

1. Enter the escape character shown when you connect to the port.
2. The menu with ports is displayed.
3. Select the exit option to return to the shell prompt.

3.4 Manage Power for a Device Connected to an Outlet on a PDU

See cycle, on, off, lock and unlock on page 11 for how an authorized user can manage power on PDU outlets when the PDU is connected to an enabled port configured with the Power Profile or the PDU is connected to the network and added to the appliance as Network PDU.

3.5 Port Configuration Examples

The following examples show how an administrator can configure a port when a device console is connected, assign the CAS profile, configure a port that is connected to a PDU and assign the Power Profile.

To set up a console access service (CAS) port:

1. Log onto the CLI as an administrator.

```
--:- / cli->
```

2. Enter **set_cas ports/serial_ports/** followed by a space and the number of the port you want to configure (port 1 is used as an example).

```
--:- / cli-> set_cas ports/serial_ports/ 1
```

3. Enter **show** to view the status of port 1.

```
--:#- [serial_ports/physical] cli-> show
port: 1
device name: ttyS1
status = enabled
rj45_pin-out = auto
speed = 9600
parity = none
data_bits = 8
stop_bits = 1
```

```
flow_control = none

Type ls to see available sub-nodes.
--:#- [serial_ports/physical] cli->ls
cas/
data_buffering/
alerts/
power/

Type show to see the content of the page.
--:#- [serial_ports/physical] cli->
```

4. Enter **set status=enabled**, then enter **show** and **save** as shown to enable the configured port and verify and save the configuration.

```
--:#- serial_ports/physical cli-> set status=enabled
--:#- serial_ports/physical cli-> show
--:#- serial_ports/physical cli-> save
```

To enable a power management port:

1. Log onto the CLI as an administrator and enter **set_power ports/serial_ports/** <port number> to select a port with a PDU connected (port 3 is used as an example).

```
--:- / cli-> set_power ports/serial_ports/ 3
```

2. Enter **show** to view the configuration of port 3.

```
--:#- [serial_ports/physical] cli-> show
port: 3
status = disabled
rj45_pin-out = auto
speed = 9600
parity = none
data_bits = 8
stop_bits = 1
flow_control = none

Type ls to see available sub-nodes
--:- serial_ports/physical cli->
```

3. Enter **set status=enabled** then enter **save** to set the Serial_Profile to Power, enable the port and commit the changes.
4. Enter **show** to verify the configuration.

```
--:-serial_ports cli-> show
```

```
port        device      name        profile     settings

====        ======      ====        =======     =======

1           ttys1       21-67-p-1   cas         9600_8N1_telnet-ssh_local

2           ttys2       21-67-p-2   cas         9600_8N1_telnet-ssh_local

3           ttys3       21-67-p-3   power       9600_8N1


Type ls to see available sub-nodes

--:-serial_ports/physical cli->
```

4 CLI OVERVIEW FOR ADMINISTRATORS

This chapter describes using the Command Line Interface (CLI) for administrators. Only administrators and authorized users can access the commands listed in this chapter. These procedures assume you have logged into the CLI as an administrator and are at the --:- / cli-> prompt.

NOTE: In the tables that show output from the show command, when an option that is followed by an equal sign (=) is left blank, that option is not assigned a value by default.

4.1 System

1. Enter **cd system** to navigate to the System level.

```
--:- / cli-> cd system
```

2. Enter **ls** to view the available options.

```
--:- system cli-> ls
security/
date_and_time/
help_and_language/
general/
boot_configuration/
information/
usage/
```

3. Enter **show** followed by an option name to view information about each option.

```
--:- security cli-> show security_profile
```

4.2 System/Security

Enter **cd system/security** to navigate to the security level.

```
--:- / cli-> cd system/security
```

Table 4.1 System Navigation Tree

security_profile
    idle_timeout =
    rpc =
    enable_pluggable_device_detection =
    enable_pluggable_storage_devices =
    port access =
    session =
    port_access_kill_multi_session =

port_access_send_message_multi_session =	
port_access_power_control =	
port_access_data_buffer_management =	
port_access_restful_menu =	
bootp_enabled=	
bootp_interface=	
enable_live_configuration_retrieval=	
ssh_allows_authentication_via_username|password =	
security_profile=	
enable_telnet_service=	
enable_ftp_service= d	
enable_snmp_service=	
enable_ipsec=	
answer_icmp_message=	
ssh_version=	
ssh_tcp_port=	
ssh_allow_root_access=	
ssh_minimum_cipher_and_mac_suite_level =	
enable_http_session=	
http_port=	
enable_https_session	
https_tls_version=	
https_port=	
https_minimum_cipher_suite_level=	
redirect_http|https=	

dsview
all_appliance_to_be_managed_by_dsview=
fips_140
enable_fips_140-2_module=

4.2.1 System/Date and Time

Enter **cd system/date_and_time** to navigate to the date_and_time level.

--:- / cli-> cd system/date_and_time

Table 4.2   Date and Time Navigation Tree

date_and_time
date_and_time
settings=
day=
hour=
minute=
month=

		second=
		year=
time_zone=		

4.2.2 System/Help and Language

Enter **cd system/help_and_language** to navigate to the online_help level.

```
--:- / cli-> cd system/help_and_language
```

To set the online help URL:

Perform this procedure if you have downloaded the online help files to a web server that is accessible to the console system.

1. Enter the following command.

```
--:- / cli> cd system/help_and_language/
```

2. Enter the following command.

```
--:- help_and_language cli> set url=<online_help_location>
```

A line similar to the following appears.

```
**:- help_and_language cli>
```

3. Save your settings.

```
**:- help_and_language cli> commit.
```

Table 4.3 Help and Language Navigation Tree

appliance_language=
url=

4.2.3 System/General

Enter **cd system/general** to navigate to the login_banner level.

```
--:- / cli-> cd system/general
```

To set the login banner:

1. Enter the following command.

```
--:- / cli> cd system/general/
```

2. Enter the following command.

```
--:- general cli-> set enable_login_banner=yes
**:- general cli> set login_banner=<login banner text>
```

NOTE: <login banner text> with new lines: Type the text between double quotes and enter the new line as \\n (double back slash and the character).

A line similar to the following appears.

```
**:- general cli>
```

3. Save your settings.

```
**:- general cli> commit.
```

4.2.4 System/Boot Configuration

Enter cd system/boot_configuration to navigate to the boot_configuration level.

```
--:- / cli-> cd system/boot_configuration
```

Table 4.4 Boot Configuration Navigation Tree

boot configuration
boot mode=
boot image=
watchdog_timer=
console_speed=

4.2.5 System/Information

1. Enter cd system/information to navigate to the Information level.

```
--:- / cli> cd system/information/
```

2. Enter show to view the system information.

4.2.6 System/Usage

Enter cd system/usage to navigate to the Usage level.

```
--:- / cli> cd system/usage/
```

Table 4.5 Usage Navigation Tree

memory
flash usage

4.3 Network

1. Enter **cd network** to navigate to the Network level.
2. Enter **ls** to view the list of available options.

```
settings/
devices/
ipv4_static_routes/
ipv6_static_routes/
hosts/
firewall/
ipsec(vpn)/
snmp/
```

4.3.1 Network/Settings

1. Enter **cd network/settings** to navigate to the Network settings level.
2. Enter **show** to view the list of available options.

Table 4.6 Network/Settings Navigation Tree

Settings	
	hostname=
	primary_dns=
	secondary_dns=
	domain=
	search=
	enable_lldp=
	enable_ipv6=
	get_dns_from_dhcpv6=
	get_domain_from_dhcpv6=
	multiple_routing=
	enable_bonding=

4.3.2 Network/IPv4 and IPv6

IPv4 addresses are always enabled. An administrator can also enable IPv6 addresses at the appliance_ settings/network/ipv6 level. A procedure to enable IPv6 is used as an example in CLI Equivalent Actions to Web Manager Checkbox Selection on page 16.

Table 4.7   Network/IPv4 and IPv6 Options

ipv4_static_routes		
default_3		
	gateway=	
	interface=	
	metric=	
ipv6_static_routes		

4.3.3 Network/Devices

The procedure to configure a static IP address for the primary Ethernet interface is usually performed during installation so that administrators have a fixed IP address for access to the web manager and can finish configuration.

To configure an IPv4 or IPv6 static IP address:

NOTE: This procedure configures either an IPv4 or IPv6 static IP address for the ETH0 (eth0) or the ETH1 (eth1) port. You can configure an IPv6 static IP address only if IPv6 is enabled.

    1. Enter **cd network/devices/<eth0 | eth1>/settings** to navigate to the Settings level for the desired interface.

```
--:- / cli-> cd network/devices/eth0/
```

    2. Enter **set ipv**<4|6>**_method=static** to set the method to static for IPv4 or IPv6.

```
**:- eth0 cli-> set ipv4_method=static
```

    3. Enter **set ipv**<4|6>**_address=**<IP_Address> **ipv**<4|6>**_mask=**<netmask> to set the IP address and subnet mask, then enter **commit** to save the change.

```
--:- eth0 cli-> set ipv4_address=172.26.31.10 ipv4_mask=255.255.255.0
```

```
**:- eth0 cli-> commit
```

    4. Enter **show** to view the changes.

```
--:- eth0 cli-> show
```

Table 4.8   Devices Navigation Tree

devices		
eth0		
	set_as_primary_interface=	
	status=	

	ipv4_method=
	ipv6_method=
	mode=
eth1	
	set_as_primary_interface=
	status=
	ipv4_method=
	ipv6_method=
	mode=

4.3.4 Network/Hosts

The following procedure describes how to add a host to the hosts table.

To add a host to the host table:

1. Enter **cd network/hosts** to navigate to the Hosts level.

```
--:- / cli-> cd network/hosts
```

2. Enter **show** to view the current host settings.

```
--:- hosts cli-> show
ip                       hostname                              alias
=====                    ==========                            ========
127.0.0.1                localhost.localdomain                 localhost
```

3. Type **add** then press **Return**.

```
--:- hosts cli-> add
--:#- [hosts] cli-> ls
ip =
hostname =
alias =
--:#- [hosts] cli->
```

4. Enter **set hostname**=<hostname> **ip**=<IP_address> to add the name of a host and the IP address for the host.

NOTE: Each parameter that follows the add command is separated by a space.

```
--:#- [hosts] cli-> set hostname=sharedacs8000 ip=172.26.31.164
```

5. Enter **commit**.

```
--:#- [hosts] cli-> save
```

6. Enter **show** to verify the changes took place and to view the new host entry.

```
--:- hosts cli-> show
```

```
--:- hosts cli-> show 127.0.0.1
ip                     hostname                alias
=====                  ==========              ========
127.0.0.1              localhost.localdomain   172.26.31.164
172.26.31.164          sharedacs8000           127.0.0.1/add 172.26.31.164
```

7. Enter **cd <IP_address>** to navigate to the level where you can perform additional configuration of the host entry.

```
--:- hosts cli-> cd 172.26.31.164
```

8. Enter **show** to view the additions to the host table and the Settings option.

```
--:- 172.26.31.164 cli-> show
```

```
ip: 172.26.31.164
hostname = sharedacs8000
alias =
```

Table 4.9 Hosts Navigation Tree

```
hosts
        127.0.0.1
                alias=
                hostname=
```

4.3.5 Network/Firewall

Enter **cd network/firewall** to navigate to the firewall level.

```
--:- / cli-> cd network/firewall
```

NOTE: To set a rule, you must enable the interface, set the rule for the interface and physically connect the interface to the network.

Table 4.10 Firewall Navigation Tree

```
firewall
                ipv
                        ipv4_filter_table
```

		FORWARD
		INPUT
		OUTPUT
ipv6_filter_table		
		FORWARD
		INPUT
		OUTPUT

4.3.6 Network/IPSec(VPN)

Enter **cd network/ipsec(vpn)** to navigate to the ipsec(vpn) level.

> --:- / cli-> **cd network/ipsec(vpn)**

4.4 Network/SNMP

Enter **cd network/snmp** to navigate to the snmp level.

> --:- / cli-> **cd network/snmp**

4.5 Sensors

An administrator can view and configure sensors on the console system.

Sensors			
appliance			
	internal		
		current cpu temperature (deg c):	
		maximum_cpu_temperature_(deg_c)=	
		maximum_cpu_temperature_threshold_(deg_c)=	
		minimum_cpu_temperature_(deg_c) =	
		minimum_cpu_temperature_threshold_(deg_c) =	
		current board temperature (deg c):	
		maximum_board_temperature_(deg_c) =	
		maximum_board_temperature_threshold_(deg_c) =	
		minimum_board_temperature_threshold_(deg_c) =	
		minimum_board_temperature_(deg_c) =	
		ps internal supply [0.95v ~ 1.05v]:	
		pl internal supply [0.95v ~ 1.05v]:	
		ps auxiliary supply [1.71v ~ 1.89v]:	
		pl auxiliary supply [1.71v ~ 1.89v]:	
		ps ddr3 supply [1.31v ~ 1.39v]:	
		pl block ram supply [0.95v ~ 1.05v]:	
		power supply 1 [11.06v ~ 12.98v]:	
	1-wire		
		name=	
		address=	

	type=			
	value=			
	max=			
	min=			
	average=			
digital_in				
	<sensor>			
			name=	
			location=	
			type=	
			alarm=	
pdu				
	<sensor>			
		name:		
		pdu:		
		type:		
		value:		
		max:		
		min:		
		average:		

4.5.1 Wiz command

The wiz command allows administrators to quickly perform the initial network configuration of the eth0.

At the command prompt at the / level, enter **wiz** to view the current IP configuration. To change the IP configuration, press **Tab** to move through the parameters, and press **Esc + Tab** to edit the selected parameter. When you are finished, enter **yes** to confirm that all parameters are correct and to save the new parameters.

```
--:- / cli-> wiz
Current IPv4 address: 172.26.30.249
Current IPv6 address:
eth0:
device_status = enabled
ipv4_method = dhcp
ipv4_address = 192.168.160.10
ipv4_mask = 255.255.255.0
ipv4_default_gateway =
ipv6_method = ipv6_address_unconfigured
ipv6_address =
ipv6_prefix_length =
ipv6_default_gateway =
MAC Address: 00:e0:86:21:67:72
dns:
primary_dns = 172.26.29.4
secondary_dns =
domain = corp.vertivco.com
```

```
hostname = ACS8000-0011223344
ipv6:
```

NOTE: Enabling or disabling IPv6 requires a reboot to be effective.

```
enable_ipv6 = yes
get_dns_from_dhcpv6 = no
get_domain_from_dhcpv6 = no

Some basic and useful keys are:
 - tab (once/twice) - shows the next possible commands/option(s
 - esc tab - gets the current parameter value for editting

Other hints:
 - Use backslash '\' to escape spaces, '\' and other control
 characters when assigning values to parameters.

Current IPv4 address: 172.26.30.249
Current IPv6 address:
eth0:
device_status (disabled, enabled) [enabled]:
```

4.6 Ports

Enter cd ports to navigate to the Ports level.

```
--:- / cli-> cd ports
```

Table 4.11 Ports Navigation Tree

serial ports
<port>
cas
port_name=
enable_auto_discovery=
enable_speed_auto_detection=
protocol=
authentication_type=
text_session_hot_key=
power_session_hot_key=
restful_hot_key=
telnet_port_alias=
ssh_port_alias=
raw_mode_port_alias=
port_ipv4_alias=
port_ipv4_alias_interface=
port_ipv6_alias=

port_ip6_alias_interface=

dcd_sensitivity=

enable_auto_answer=

dtr_mode=

dtf_off_interval=

line_feed_suppression=

null_after_cr_suspension=

transmission_interval=

break_sequence=

break_interval=

show_multi-session_menu=

log_in|out_multi_session_notification=

information_message_notification=

physical

enable_cisco_rj45_pin-out=

status=

speed=

parity=

data_bits=

stop_bits=

flow_control=

data_buffering

status=

type=

local_type=

time_stamp=

login|logout_message=

serial_session_logging=

alerts

power

auxiliary ports

ttyM1

status=

speed=

init_chat=

ppp_address=

ppp_authentication=

chap-interval=

chap-max-challenge=

chap-restart=

ppp_idle_timeout=

cas_profile

auto_discovery

settings

auto_discovery_timeout_(seconds)=

default_speed_on_auto_discovery_failure=

probe_speed_115200=

probe_speed_1200=

probe_speed_19200=

probe_speed_230400=

	probe_speed_2400=
	probe_speed_38400=
	probe_speed_4800=
	probe_speed_57600=
	probe_speed_9600=
	probe_timeout_(seconds)=
auto_answer	
	input string
	output string
auto_discovery	
	probe_strings
	match_strings
pool_of_ports	
	pool_name=
	pool_telnet_port_alias=
	pool_ssh_port_alias
	pool_raw_mode_port_alias=
	pool_ipv4_alias=
	pool_ipv4_alias_interface=
	pool_ipv6_alias=
	pool_ipv6_alias_interface=
	pool_members=
restful_settings	
	action_name_<#>=
	http_method_<#>=
	url_<#>=
	post_data_<#>=
	username_<#>=
	password_<#>=
dial-in_profile	
secure_dial-in	
	callback_users
	ppp_otp_users
settings	
	log_in_to_appliance=
	otp_login_authentication=
	ppp_connection=
	ppp|pap_authentication=

Table 4.12   Serial Port Commands

COMMAND	SUMMARY
set_cas	Edits the command to configure a list of serial ports with the CAS profile. Syntax: set_cas<serial port number>, <serial port number> This command has five sub-nodes: physical, cas, data_buffering, alerts and power.
set_dial-in	Edits the command to configure one serial port with the Dial-In profile. Syntax: set_dial-in<serial port number>
set_dial-out	Edits the command to configure one serial port with Dial-out on demand profile. Syntax: set_dial-out <serial port number>
set_power	Edits the command to configure a list of serial ports with the Power profile. Syntax: set_power<serial port number>, [<serial port number>] This edit has two sub-nodes: physical and power.
set_socket-client	Edits the command to configure one serial port with Socket Client profile. Syntax: set_socket-client <serial port number>
clone_ports	Copies the configuration from one port to a list of serial ports. Syntax: clone_ports<serial port number>
reset_port_to_factory	Resets the serial ports to factory configuration. (This is disabled for CAS profile.) Syntax: reset_port_to_factory<serial port number>, [<serial port number>]

COMMAND	SUMMARY
enable_ports	Enables serial ports. Syntax: enable_ports<serial port number>, [<serial port number>]
disable_ports	Disables serial ports. Syntax: disable_ports<serial port number>, [<serial port number>]

Example of how to set a list of serial ports 2, 5 and 6 with the CAS Profile and enable the status:

```
--:- serial_ports cli-> cd /ports/serial_ports
--:- serial_ports cli-> set_cas 2,5,6
--:#- [serial_ports/physical] cli-> set status=enabled
--:#- [serial_ports/physical] cli-> show
selected items: 2,5,6
status = enabled
rj45_pin-out = auto
speed = 9600
parity = none
data_bits = 8
stop_bits = 1
flow_control = none
```

To copy the configuration from serial port 5 to ports 10 and 15:

```
--:- serial_ports cli-> clone_ports 5
--:#- [serial_ports] cli-> show
Copy configuration from: 5
copy_configuration_to =
--:#- [serial_ports] cli-> set copy_configuration_to=10,15
--:#- [serial_ports] cli-> save
--:- serial_ports cli->
```

4.6.1 Auxiliary ports

Enter **cd ports/auxiliary_ports** to navigate to the auxiliary ports level.

```
--:-cli-> cd /ports/auxiliary_ports/
```

If an internal modem is factory installed, the port profile can be set for either Dial-in or Dial-out on demand. The port name is ttyM1.

4.7 Pluggable Devices

Type **show** to display a list of all detected pluggable devices. Type **cd_<device name>** to configure the device. SD cards and USB devices are only visible if the enable_pluggable_device detection setting is enabled in the system security profile.

device name	device type	card	device path	device info	status	port
==========	=========	=====	=========	========	=====	====
ttyACM0	Console	usb	usbslot	1-1.4	inserted	34
ttyUsB0	Console	usb	usbslot	1-1.1.1.	inserted	35

| ttyACM1 | Console | usb | usbslot | 1-1.1.2 | inserted | 33 |

4.8 Authentication

Enter **cd authentication** to navigate to the authentication level.

--:- / cli-> cd authentication

Table 4.13 Authentication Navigation Tree

authentication
    appliance_authentication
        authentication_type=
        enable_fallback_to_local_type_for_root_user_in_appliance_console_port=
        enable_single_sign-on=
    authentication_servers
        radius
            first_authentication_server=
            first_accounting_server=
            second_authentication_server=
            second_accounting_server=
            secret=
            timeout=
            retries=
            enable_servicetype=
        tacacs+
            first_authentication_server=
            first_accounting_server=
            second_authentication_server=
            second_accounting_server=
            service=
            secret=
            timeout=
            retries=
            tacacs+_version=
            enable_user-level=
        ldap(s)|ad
            server=
            base=
            secure=
            database_user_name=
            database_password=
            login_attributes=
        dsview
            ip_address_1=

ip_address_2=	
ip_address_3=	
ip_address_4=	

4.9 Users

Enter **cd users** to navigate to the users level.

```
--:- / cli-> cd users
```

To add a user and password:

    1. Enter **cd users/local_accounts/user_names** to navigate to the user_names level.

```
--:- / cli-> cd users/local_accounts/user_names
```

    2. Enter **add.** Then enter **set** with the parameters all on one line separated by spaces as shown.

```
--:- user_names cli-> add
--:#- [user_names] cli-> set user_name=fred password=smith123abc confirm_password=smith123abc
--:#- [user_names] cli->
```

    3. Enter **save**.

```
--:#- [user_names] cli-> save
```

    4. Enter **show** to verify that the new user has been added.

```
--:#- [user_names] cli-> show
```

Table 4.14   Users Navigation Tree

users					
	authorization				
		groups			
			admin		
				members	
					admin
					root
				login_profile	
					session_timeout=
					enable_log-in_profile=cd
				access_rights	

		serial	
		power	
		appliance	
	appliance-admin		
		members	
		login_profile	
			enable_log-in_profile=
		access_rights	
			serial
			power
			appliance
	shell-login-profile		
		members	
			root
		login_profile	
			session_timeout=
			enable_log-in_profile=
			profile=
			cli_cmd=
			exit_after_executing=
		access_rights	
			serial
			power
			appliance
	user		
		members	
		login_profile	
			session_timeout=
			enable_log-in_profile=
		access_rights	
			serial
			power
			appliance
	dsview_access_rights		
		map_to_=	
		multi_access_mode=	
		kill_multi_session=	
		send_message_multi-session=	
local_accounts			
	user_names		
		admin root	
		settings	
			user_name=
			password=

	confirm_password=
	password_change_at_next_login=
	user_group=
	password_minimum_days=
	password_maximum_days=
	password_inactive_days=
	password_warning_days=
	account_expiration_date=
access_rights	
	serial
	power
	appliance
password_rules	
	check_password_complexity=
	min_digits=
	min_upper_case_characters=
	min_special_characters=
	minimum_size=
	def_expiration_min_days=
	def_experiation_max_days=
	def_expiration_warning_days=
	number_of_permitted_failed_attempts_{0|disabled}=
	account_lockout_duration_after_each_failed_login_{min}=
	unlock_account_after_{min}_{0|manual_unlock}=

4.10 Events_and_Logs

Enter **cd events_and_logs** to navigate to the events_and_logs level.

```
--:- / cli-> cd events_and_logs
```

Table 4.15 Events and Logs Navigation Tree

event list		
event destinations		
	syslog	
	snmp trap	
	sms	
	email	
	dsview	
trap_forward		
data_buffering		
	local_data_buffering_settings	
		segment_size_(kbytes)=
		spare_segments=
	nfs_data_buffering_settings	

	nfs_server=
	nfs_path=
	segment_size_(kbytes)=
	spare_segments=
local_nfs_ data_ buffering_ settings	
	close_log_files_and_open_new_ones_at_time_ (hh:mm)=
syslog_data_buffering_settings	
	syslog_facility=
appliance_loggin	
	enable_session_logging=
sensors	
	current_temperature:(deg_c, display only)
	maximum_temperature_(deg_c)=
	maximum_temperature_threshold_(deg_c)=(positive integer between 0 and 4)
	minimum_temperature_(deg_c)=
	minimum_temperature_threshold_(deg_c)=(positive integer between 0 and 4)

4.11 Power Management

The Power Management Options are described in the following table.

Table 4.16   Power Management Options Descriptions

OPTION	DESCRIPTION
pdus	Allows an authorized user to reboot, restore factory default settings or to rename PDU(s). Also allows the authorized user to view information about each PDU, monitor sensors, clear sensor values, set up syslogging of events related to the PDU, configure an alarm and the LED display mode, and to manage outlets on the PDU.
login	Lists the username and password for each type of PDU connected to the console system.
outlet_ groups	Lists all configured outlet groups that the current user is authorized to manage (to manage outlet groups, the user must be in a user group that is authorized to manage all the outlets in the outlet group). An administrator can configure outlet groups
network_ pdus	Allows an administrator to add, edit or delete PDUs connected to the network. These PDUs will show up in the PDUs node when they are discovered. Only power control opearation is supported by these PDUs.
ups	Allows an authorized user to reboot, restore factory default settings, rename or view UPSs.
network_ ups	Allows an administrator to add, edit or delete UPSs connected to the network.

To rename a PDU:

1. Log onto the CLI as an administrator and enter **cd power_management/pdus** to navigate to the pdus level.

--:- / cli-> cd power_management/pdus

2. Type **rename** and press **Tab Tab** to expand the parameters.

--:- pdus cli-> rename <PDU_ID>

3. Enter **set newpdu_id=**<new_PDU_ID>.

```
--:#- [pdus] cli-> set new_pdu_id=mypdu
--:#- [pdus] save
```

NOTE: See the Avocent® ACS800/8000 Advanced Console System Installation/User guide for how to perform other authorized PDU configuration options.

To manage power for a selected outlet:

See cycle, on, off, lock and unlock on page 11 for how to manage power at the power_management level.

4.12 Active Sessions Information

The Active Session information fields are described in the following table. An authorized user can kill an active session with the Kill command.

Table 4.17 Active Sessions Field Descriptions

FIELD	DESCRIPTION
user	Logged in user
client_ip	Source of the connection
creation_time	Time of the session creation
session_type	Type of session (console, http)
connection_type	Type of connection (cli, wmi - that is, Web Manager)
target_name	Target name or alias if session is an access session
id	Session ID
parent id	Parent ID if session is a subsession

To view and kill Active_Sessions:

1. From the / level CLI prompt, enter cd active_sessions.

```
--:- / cli-> cd active_sessions
--:- active_sessions cli->
```

2. Enter show. Information displays as shown about all active sessions.

user	client ip	creation time	session type	connection type	target name	id	parent id
=====	=======	=========	=========	============	=======	===	=======
admin	none	14 Feb 2017 03:53:22 PM UTC	console	cli		37	

3. To kill a session (if authorized), enter kill_session followed by the session number.

APPENDICES

Appendix A: Recovering a Console System That Will Not Boot From Flash

The following procedure should only be used as a last resort for a console system that will not boot from flash. You will need physical access to both the console system and the console port using a PC with a serial port using PuTTY or another terminal emulation program.

IMPORTANT! This procedure will completely re-initialize the console system flash to its factory defaults and erase all configuration and data.

To recover a console system that will not boot from flash:

1. Turn off the console system.
2. Connect a PC to the console port of the console system using 9600 baud and 8, N, 1 for data bits, parity and stop bits.
3. Turn on the console system.
4. Press any key on your keyboard to obtain the U-Boot prompt when you see the message "Hit any key to stop autoboot."
5. Place a Vertiv-provided firmware file named firmware-ngacs.fl on a fresh 1GB, 2GB or 4GB USB stick.
6. Insert the USB stick into any USB port on the console system.

NOTE: The USB stick should be the only USB device connected to the console system.

7. At the U-Boot prompt, type **usb_boot single**.
8. Wait for the console system to boot to a "#" promp,t then type **recover-flash.sh**.
9. A warning, followed by a second warning, displays. Type **yes** at each warning to begin initialization of the console system.

After the console system reboots, you can upgrade the firmware from the web UI.

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Appendix B: Migration CLI

The Migration CLI is a tool that allows you to configure an Avocent® ACS800/8000 Advanced Console System that is running scripts based in the ACS Advanced Console Server or ACS5000 Advanced Console Server. Scripts based in the ACS6000 Advanced Console Server can be run directly on an ACS800/8000 Advanced Console System. For full configuration and management commands, it is recommended you use the CLI of the Avocent® ACS800/8000 Advanced Console System.

NOTE: References to an ACS Advanced Console Server in this section refer to the ACS Advanced Console Server or the ACS5000 Advanced Console Server.

In the ACS800/8000 console system, the login profile for the user "root" goes directly to the shell prompt. This will allow the root user to run Migration CLI commands out of the ACS800/8000 console system. A new group, "login-profile-shell," is created with only root as a member. To run commands based from an ACS advanced console server, a root user should type CLI before the command.

B.1 Access rights

The access rights on the ACS8000 console system are based on authorization groups. The administrator configures the serial ports the group can access. To allow you to configure access rights, the following table displays authorization groups that will be created on the ACS8000 console system when using the Migration CLI.

Table B.1   Access Rights Groups

GROUP	MEMBERS	PERMISSIONS
cli_mus_ttySxx	Users who can open a second session to a serial port.	Access to a serial port in a multi-session (read/write or read only)
cli_power_ttySxx	Users who have power control in a serial port.	Power control (on/off/cycle) of outlets merged to a serial port.
cli_access_ttySxx	Users who can access a serial port in a single session.	Access to a serial port in a single read/write session.
cli_pmd_<username>	<username>	Power control of the outlet

B.2 Exceptions

This section will list all console system CLI commands not available in the Migration CLI for the ACS800/8000 console system. For a list of available commands, see the Avocent® ACS Advanced Console Server Installation/User Guide or Avocent® ACS5000 Advanced Console Server Installation/User Guide.

The following commands or values are not supported by the Migration CLI:

Table B.2   Commands Not Supported by the Migration CLI

COMMAND	VALUE OR DESCRIPTIONS
administration	
backupconfig loadfrom sd	N/A
backupconfig saveto sd	N/A
upgradefw checkum	N/A
application	
connect	N/A
pm	N/A
view	N/A
config administration bootconf	
bootype	bootp/both/ftp
flashtest	full/skip

COMMAND	VALUE OR DESCRIPTIONS
maxevents	<number>
ramtest	full/quick/skip
config administration notifications	
addemail	N/A
addpager	N/A
addsnmptrap	N/A
alarm	N/A
delete	N/A
edit	N/A
config application pmdconfig general	
add	N/A
delete	N/A
config application terminalmenu	
add	N/A
delete	N/A
menutitle	N/A
config network hostSettings	
secipaddress	<nnn.nnn.nnn.nnn>
secsubnetmask	<nnn.nnn.nnn.nnn>
mtu	N/A
config physicalports access	
users/groups	accepts only list of usernames
authtype	assume local
termshell	<shell command>
logintimeout	<login timeout in seconds>
config physicalports databuffering	
mode	cir/lin
showmenu	file/fileanderase/no/noerase/yes
syslogsize	<record length in bytes[40-255]>
config physicalports general	
pmsessions	none/ssh/ssh_telnet/telnet
protocol	bidirectionaltelnet, consoleraw, cslip, local, rawsocket, slip, sshv1, sshv2, telnet
config physicalports multiuser	
users	accepts only list of users
sniffmode	in/inout/no/out
config physicalports other	
SSHexitkey	<SSH exit key>
banner	<login banner>
host	<host>
sttyoptions	<stty options>
tcpkeepalive	<number>
terminaltype	aixterm, att6386, linux-lat, vt100, vt320, xtermcolor, ansi, ibm3151, scoansi, vt102, vt52, at386, linux, sun, vt220, xterm
winems	no/yes
idletimeout	<number>
config physicalports power management	
enableIPMI	N/A
disableIPMI	N/A
key	N/A

COMMAND	VALUE OR DESCRIPTIONS
server	N/A
config security	
addgroup/delgroup	N/A
config security adduser	
shell	<shell cmd but "ts_menu">
comments	<comments>
config security profile custom	
ports auth2sport	no/yes
ports bidirect	no/yes
ports raw2sport	no/yes
ports ssh2sport	no/yes
ports telnet2sport	no/yes
ssh ssh_x509	no/yes
config virtualport	
config ipmi	<all or range/list[1-numberOfPorts]>
security authentication	
authtype	Otp, Otp/Local
pppauthtype	Otp, Otp/Local
timeout	
-t<time>	Time-out in minutes
-T	Disable the idle time-out. Same as -t0
config security loadkey	
url	N/A
username	N/A

Appendix C: Su and Sudo Commands

The su and sudo commands allow a user to execute commands as a different user.

C.1 Su command

Using the su (switch user) command, a user can switch to another user account to execute commands not authorized with their normal account. If used without a username, the su command defaults to root. Only users who are members of the wheel group can execute the su command to log in as root.

NOTE: The wheel group is a Linux group and is included in the firmware by default.

You will be prompted for the password of the account you're trying to switch to with the su command. You will remain logged into that account until you either press **Ctrl-D** or type **exit**.

NOTE: The su command will open a shell session instead of the restricted shell. The user will receive the shell prompt. Improper use of shell commands could lead to data loss. Double-check your syntax when using shell commands.

Syntax:

```
su [options][-][username[arguments]]
```

The following table describes options that can be used with the su command.

Table B.3 Su Command Options

OPTION	DESCRIPTION
-, -l, --login	Uses an environment similar to that had the user logged in directly. When - is used, it must be specified as the last su option.
-m, -p, --preserve-environment	Preserves the current environment.

Optional arguments may be provided after the username, in which case they are supplied to the shell (/bin/sh).

To add a member to the wheel group:

1. Create the user using the web manager or CLI.
2. Open a session in the appliance and log in as **root**.
3. In the shell prompt, run the usermod command to add the user to the wheel group.

```
# usermod -G wheel <username>
```

4. Run the groups command to verify.

```
# groups <username>
```

To delete a member from the wheel group:

1. Edit the file /etc/group.
2. Remove the username from the line with **wheel::XX:<user1>,<user2>,<user3>**.

C.2 Sudo command

Using the sudo (superuser do) command, a user can execute a command using the privileges of another user (often root), as specified in the /etc/sudoers file. The user is authenticated using his own password, not the root password. The /etc/sudoers file logs all commands and arguments.

Syntax:

```
sudo <command>
```

Configuring sudo

A system administrator configures the /etc/sudoers file to give groups or users access to some or all commands not authorized with their normal account. An administrator should log into the console system as a root user and edit the /etc/sudoers file by using the **/usr/sbin/visudo** command to configure sudo.

The sudoers file is composed of aliases and user specifications. When multiple entries match for a user, they are applied in order. Where there are conflicting values, the last match is used.

Since the sudoers file is parsed in a single pass, order is important. You should structure sudoers so that the Host_Alias, User_Alias, and Cmnd_Alias specifications come first, followed by any Default_Entry lines, and finally the Runas_Alias and user specifications.

An example of an /etc/sudoers file:

```
#User alias specification
User_Alias FULLTIMERS = millert, mikef, dowdy
User_Alias PARTTIMERS = bostley, jwfox, crawl

#Cmnd alias specification
Cmnd_Alias KILL = /bin/kill
Cmnd_Alias SHUTDOWN = /sbin/shutdown
Cmnd_Alias REBOOT = /sbin/reboot
Cmnd_Alias SU = /bin su

FULLTIMERS ALL = KILL, SHUTDOWN, REBOOT, SU
PARTTIMERS ALL = SHUTDOWN, REBOOT
```

In the preceding example, the users millert, mikef and dowdy can execute the kill, shutdown, reboot and su commands while the users bostley, jwfox and crawl can only shut down and reboot the console system.

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