



HIRSCHMANN

A **BELDEN** BRAND

Reference Manual

Command Line Interface (CLI)
Industrial Ethernet Firewall
EAGLE One

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About this Manual

The “Command Line Interface” reference manual contains detailed information on using the Command Line Interface to operate the individual functions of the device.

The “Configuration” user manual contains the information you need to start operating the device. It takes you step by step from the first startup operation through to the basic settings for operation in your environment.

The “GUI Graphical User Interface” reference manual contains detailed information on using the graphical user interface to operate the individual functions of the device.

The “Installation” user manual contains a device description, safety instructions, a description of the display, and the other information that you need to install the device.

The Industrial HiVision Network Management Software provides you with additional options for smooth configuration and monitoring:

- ▶ Simultaneous configuration of multiple devices
- ▶ Graphical user interface with network layout
- ▶ Auto-topology discovery
- ▶ Event log
- ▶ Event handling
- ▶ Client/server structure
- ▶ Browser interface
- ▶ ActiveX control for SCADA integration
- ▶ SNMP/OPC gateway.

Key

The designations used in this manual have the following meanings:

▶	List
□	Work step
■	Subheading
Link	Cross-reference with link
Note:	A note emphasizes an important fact or draws your attention to a dependency.
<code>Courier</code>	ASCII representation in user interface

1 Introduction

1.1 Industrial Ethernet Firewall

1.1.1 Application areas

The EAGLE One industrial firewall/VPN system helps provide for the authentication, security and confidentiality of communication within production networks, but also beyond company boundaries.

The EAGLE One devices support the following network modes:

- ▶ Transparent mode
- ▶ Router mode
- ▶ PPPoE mode

1.1.2 Operating Modes

This device helps you protect the internal network (1 INTERN port) from external influences (2 EXTERN port). These influences can include deliberate attacks or unauthorized access attempts, as well as interfering network events such as overloads.

■ State on delivery

On delivery, the device works in the Transparent Mode. In this mode, no network settings (e.g., for subnetworks) are required for operation.

The firewall is preconfigured so that the IP traffic from the internal network is possible; however, traffic from the external network to the internal network is not possible. Thus, the default settings already support security against attacks from the external network.

■ Modes**▶ Transparent mode**

In transparent mode, the Firewall transmits on level 2 of the ISO/OSI layer model. The IP address ranges before and after the Firewall are located in the same sub-network.

The Firewall also allows you to access the device in the delivery state without configuring the IP address. To do this, use the address 192.168.1.1/24.

▶ Router Mode

In router mode, the Firewall transmits on level 3 of the ISO/OSI layer model. The IP address ranges before and after the Firewall are located in different subnetworks. You will find a detailed description of the IP configuration in the “Configuration” user manual of the EAGLE One.

▶ PPPoE mode

In the PPPoE mode, the device works like in the router mode. However, the device uses the PPPoE protocol on the 2 EXTERN. This enables Internet connections via a DSL modem, for example.

1.2 User interfaces

The device provides you 3 user interfaces, which you can access through different interfaces:

- ▶ System monitor via the V.24 interface (out-of-band)
- ▶ Command Line Interface (CLI) via the V.24 connection (out-of-band) or via SSH (in-band)
- ▶ Graphical user interface (GUI) via Ethernet (in-band).

1.3 Command Line Interface

The Command Line Interface enables you to use the functions of the device through a local or remote connection. This supports you with a secure administration of the firewall via V.24 or via the Secure Shell (SSH) protocol. In addition, you have the option of defining rules which support you in securing the access and administration.

The Command Line Interface provides IT specialists with a familiar environment for configuring IT devices. As an experienced user or administrator, you have knowledge about the basics and about using secure shell (SSH) connections.

The “Command Line Interface” reference manual gives you step-by-step information on using the Command Line Interface (CLI) and its commands.

The commands in the Command Line Interface of the EAGLE One Firewall can be divided into the following areas:

- ▶ Authentication
- ▶ Delete
- ▶ Copy
- ▶ Denial of Service
- ▶ Device Status
- ▶ Interface
- ▶ Logging
- ▶ NAT (Network Address Translation)
- ▶ Network
- ▶ Packet Filter
- ▶ Profiles
- ▶ Signal contact
- ▶ SNMP Trap (Simple Network Management Protocol)
- ▶ SNTP (Simple Network Time Protocol)
- ▶ Users
- ▶ Display
- ▶ Serviceshell

2 Access to CLI

2.1 Preparing the data connection

You find information about your EAGLE One Industrial Ethernet Firewall device in the User Manual "Installation".

Information for configuring your EAGLE One Industrial Ethernet Firewall can be found in the "Configuration" user manual.

- Connect your Firewall with the network.
Set the network parameters appropriately for the data connection to be successful.

You can access the user interface of the Command Line Interface with the freeware program PuTTY. This program is located on the product CD.

- Install PuTTY on your computer.

2.2 CLI via SSH (Secure Shell)

- Start the PuTTY program on your computer.

PuTTY appears with the login screen.

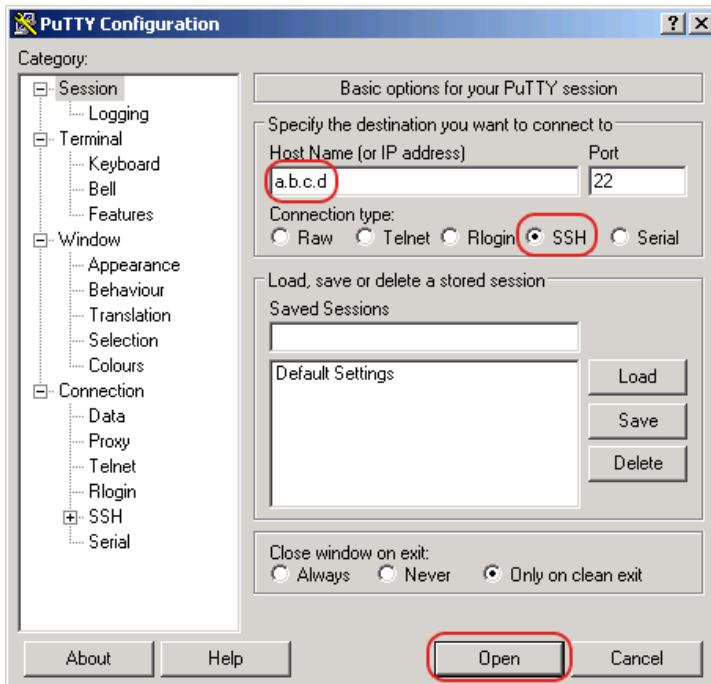


Figure 1: PuTTY input screen

- In the Host Name (or IP address) input field you enter the IP address of your device.
The IP address (a.b.c.d) consists of 4 decimal numbers with values from 0 to 255. The 4 decimal numbers are separated by points.

- To select a connection type, click on `SSH` under `Connection type`.
- After selecting and setting the required parameters, the device enables you to set up the data connection via SSH.
Click “Open” to set up the data connection to your device. Depending on the device and the time at which SSH was configured, setting up the connection takes up to a minute.

When you first login to your device, towards the end of the connection setup, PuTTY displays a security alert message and gives you the option of checking the fingerprint of the key.



Figure 2: Security alert prompt for the fingerprint

- Check the fingerprint to help protect yourself from unwelcome guests.
- If the fingerprint matches that of the device key, click “Yes”.

The device offers the possibility to read the fingerprints of the device key with the CLI command “`show ssh`” or in the graphical user interface, in the `Security:SSH Access` dialog.

Note:

The OpenSSH Suite offers experienced network administrators a further option to access your device via SSH. To set up the data connection, enter the following command:

```
ssh admin@10.149.112.53
```

`admin` represents the user name.

`10.149.112.53` is the IP address of your device.

CLI appears on the screen with a window for entering the user name. The device enables up to 5 users to have access to the Command Line Interface at the same time.

```
login as: admin
admin@a.b.c.d's password:
```

Figure 3: Login window in CLI

`a.b.c.d` is the IP address of your device.

- Enter a user name. The default setting for the user name is **admin**. Press the Enter key.
- Enter the password. The default setting for the password is **private**. Press the Enter key.

The device offers the possibility to change the user name and the password later in the Command Line Interface.

These entries are case-sensitive.

The device displays the CLI start screen.

Note: Change the password during the first startup procedure.

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EAGLEONE Release ONE-05.3.00

(Build date 2013-09-09 09:09)

System Name: EAGLEONE-000000
Netw. Mode : transparent
Mgmt-IP : a.b.c.d
Base-MAC : 00:11:22:33:44:55
System Time: TUE SEP 17 10:10:10 2013

NOTE: Enter '?' for Command Help. Command help displays all options that are valid for the particular mode.
For the syntax of a particular command form, please consult the documentation.

*(Hirschmann EAGLE One) >

Figure 4: Start screen of CLI.

Your Firewall appears with the input prompt
(Hirschmann EAGLE One) >

2.3 CLI via the V.24 port

The device provides a serial interface on the RJ11 socket (V.24 interface) for connecting an external management station (VT100 terminal or PC with corresponding terminal emulation) locally. The interface enables you to set up a data connection to the Command Line Interface (CLI) and to the system monitor.

VT 100 terminal settings	
Speed	9600 Baud
Data	8 bit
Stopbit	1 bit
Handshake	off
Parity	none

The socket housing is electrically connected to the housing of the device.

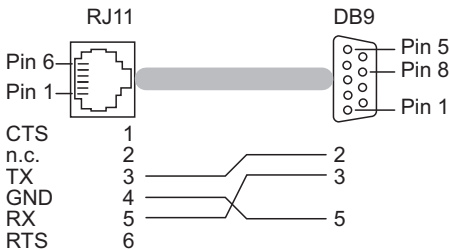


Figure 5: Pin assignment of the V.24 interface and the DB9 connector

You will find a description of the V.24 interface in the “User Manual Installation”.

- Connect the device to a terminal via V.24. Alternatively connect the device to a “COM” port of your PC using terminal emulation based on VT100 and press any key.

After the data connection has been set up successfully, the device displays a window for entering the user name.

```
Copyright (c) 2007-2013 Hirschmann Automation and Control GmbH
```

```
All rights reserved
```

```
EAGLEONE Release ONE-05.3.00
```

```
(Build date 2013-09-09 09:09)
```

```
System Name:  EAGLEONE-000000  
Netw. Mode   :  transparent  
Mgmt-IP      :  a.b.c.d  
Base-MAC     :  00:11:22:33:44:55  
System Time  :  TUE SEP 17 10:10:10 2013
```

```
(Hirschmann EAGLE One)
```

```
User:
```

Figure 6: Logging in to the Command Line Interface program

- Enter a user name. The default setting for the user name is **admin**. Press the Enter key.
- Enter the password. The default setting for the password is **private**. Press the Enter key.
The device offers the possibility to change the user name and the password later in the Command Line Interface.
These entries are case-sensitive.

The device displays the CLI start screen.

NOTE: Enter '?' for Command Help. Command help displays all options that are valid for the particular mode.
For the syntax of a particular command form, please consult the documentation.

(Hirschmann EAGLE One) >

Figure 7: CLI screen after login

Note: The device allows you to configure the V.24 interface as a modem interface or as a terminal/CLI interface. However, to have at least limited access to the CLI interface in modem mode, you connect your terminal (setting on terminal: 9600 baud) to the V.24 interface.

Press any key on your terminal keyboard a number of times until the login screen indicates the CLI mode.

3 Using the CLI

3.1 Mode-based command hierarchy

In the CLI, the commands are grouped in the related modes, according to the type of the command. Every command mode supports specific Hirschmann software commands.

The commands available to you as a user depend on your privilege level (administrator, guest). They also depend on the mode in which you are currently working. The commands of a specific mode are available to you when you switch to this mode.

The User Exec mode commands are an exception. The CLI enables you to execute these commands in the Privileged Exec mode, too.

The following figure shows the modes of the Command Line Interface.

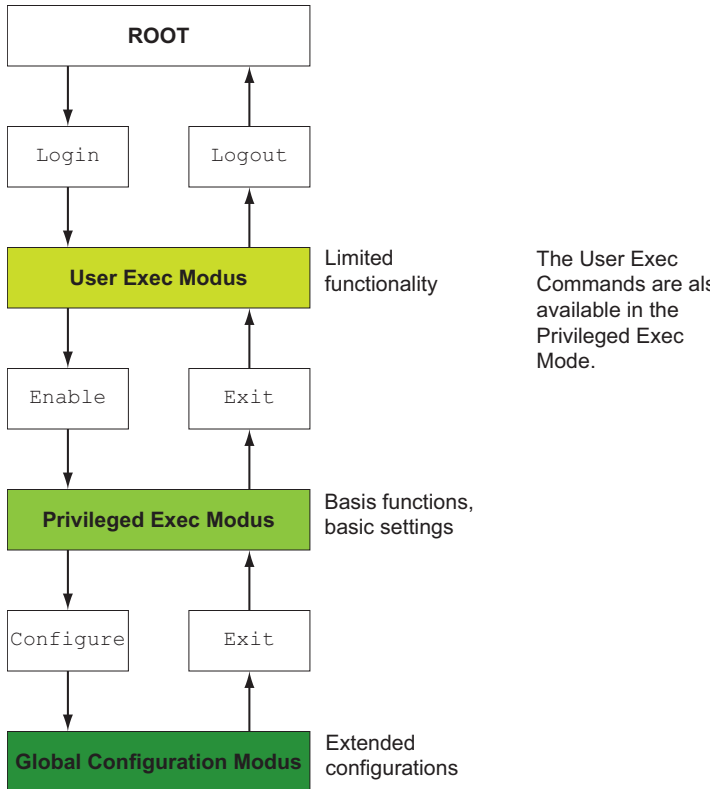


Figure 8: Structure of the CLI

The CLI supports the following modes:

► **User Exec mode**

When you login to the CLI, you enter the User Exec mode. The User Exec mode contains a limited range of commands.

Command prompt: `Hirschmann EAGLE One >`

► **Privileged Exec mode**

To access the entire range of commands, you enter the Privileged Exec mode. If you are authenticated as a privileged user by the login, you are able to enter the Privileged Exec mode. In the Privileged Exec mode, you are able to execute the User Exec mode commands, too.

Command prompt: `Hirschmann EAGLE One #`

► **Global Config mode**

The Global Config mode allows you to perform modifications to the current configuration. This mode groups general setup commands.

Command prompt: `Hirschmann EAGLE One (config)#`

The following table shows the command modes, the command prompts (input request characters) visible in the corresponding mode, and the option with which you quit this mode.

Command mode	Access method	Quit or start next mode
User Exec mode	First access level. Perform basic tasks and list system information.	To quit you enter <code>logout:</code> (<code>Hirschmann EAGLE One</code>) <code>>logout</code> Are you sure (Y/N) ? <code>y</code>

Table 1: Command modes

Command mode	Access method	Quit or start next mode
Privileged Exec mode	From the User Exec mode, you enter the command <code>enable</code> : (Hirschmann EAGLE One) >enable (Hirschmann EAGLE One) #	To quit the Privileged Exec mode and return to the User Exec mode, you enter <code>exit</code> : (Hirschmann EAGLE One) #exit (Hirschmann EAGLE One) >
Global Configuration mode	From the Privileged Exec mode, you enter the command <code>configure</code> : (Hirschmann EAGLE One) #configure (Hirschmann EAGLE One) (config)# From the User Exec mode, you enter the command <code>enable</code> , and then in Privileged Exec mode, enter the command <code>Configure</code> : (Hirschmann EAGLE One) >enable (Hirschmann EAGLE One) #configure (Hirschmann EAGLE One) (config)#	To quit the Global Configuration mode and return to the Privileged Exec mode, you enter <code>exit</code> : (Hirschmann EAGLE One) (config)#exit (Hirschmann EAGLE One) # To then quit the Privileged Exec mode and return to the User Exec mode, you enter <code>exit</code> again: (Hirschmann EAGLE One) #exit (Hirschmann EAGLE One) >

Table 1: Command modes

If you enter a question mark (?) after the prompt, the CLI displays a list of the available commands and a short description of the commands.

```
(Hirschmann EAGLE One) >?
enable      Turn on privileged commands.
help        Display help for various special keys.
history      Show a list of previously run commands.
logout      Exit this session.
ping        Send ICMP echo packets to a specified IP address.
show        Display device options and settings.
traceroute  Trace route to a specified host.
```

Figure 9: Commands in the User Exec mode

```
(Hirschmann EAGLE One) >enable

(Hirschmann EAGLE One) #?
clear                Clear several items.
configure           Enter into global config mode.
copy                Copy different kinds of items.
debug              Service functions to find configuration errors.
exit                Exit from current mode.
help                Display help for various special keys.
history             Show a list of previously run commands.
login              Set login parameters.
logout             Exit this session.
network            Modify network parameters.
ping                Send ICMP echo packets to a specified IP address.
profile            Activate or delete configuration profiles.
reboot             Reset the device (cold start).
save                Save configuration.
serviceshell       Enter system mode.
set                 Set device parameters.
show                Display device options and settings.
traceroute         Trace route to a specified host.
```

Figure 10: Commands in the Privileged Exec mode

```
(Hirschmann EAGLE One) #configure

(Hirschmann EAGLE One) (config)#?
authentication      Configure an authentication list.
config-watchdog     Configure the Auto Configuration Undo settings.
denial-of-service   Configure denial of service (flood protection)
                    parameters.
device-status       Configure the device status settings.
dhcp-relay          Modify DHCP Relay parameters.
dhcp-server         Modify DHCP Server parameters.
exit                Exit from current mode.
flm                 Controls the Firewall Learning Mode.
help                Display help for various special keys.
history             Show a list of previously run commands.
interface           Configure the interface parameters.
lldp                Configure the LLDP settings.
logging             Logging configuration.
nat                 Configure the NAT settings.
ntp                 Configure NTP settings.
packet-filter       Configure the packet-filter.
packet-forwarding   Configure transparent mode packet forwarding
                    settings.
ping                Send ICMP echo packets to a specified IP address.
radius              Configure the RADIUS settings
redundancy          Configure the redundancy settings.
save                Save configuration.
serviceshell       Enter system mode.
show                Display device options and settings.
signal-contact      Configure the Signal Contact settings.
snmptrap            Configure SNMPv3 traps.
sntp                Configure SNTP settings.
temperature         Configure the temperature limits.
traceroute          Trace route to a specified host.
user-firewall       Configure the user firewall settings.
users               Manage Users and User Accounts.
vpn                 Configure VPN settings.
```

Figure 11: Commands in the Global Configuration mode

Note: You will find information on the line feed of the help texts below ([see on page 39 “Line length”](#)).

3.2 Executing the commands

3.2.1 Syntax analysis

After you login to the CLI session, you enter the User Exec mode. The CLI displays the prompt `(Hirschmann EAGLE One)>` on the screen.

When you enter a command and press the Enter key, the CLI starts the syntax analysis. The CLI searches the command tree for the desired command.

If the command is outside the CLI command range, a message informs you of the detected error.

Example:

The user wants to execute the `show system info` command, but enters „info“ without „f“ and presses the Enter key.

The CLI then displays a message:

```
(Hirschmann EAGLE One)>show system ino
Error: Invalid command 'ino'
```

3.2.2 Command tree

The commands in the CLI are organized in a tree structure. The commands, and, if applicable, the related parameters branch down until the command is completely defined and therefore executable. The CLI checks the input. If you have entered the command and the parameters correctly and completely, you execute the command with the Enter key.

After you have entered the command and the required parameters, the other parameters entered are treated as optional parameters. If one of the parameters is unknown, the CLI displays a syntax message.

The command tree branches for the required parameters until the required parameters have reached the last branch in the structure. With optional parameters, the command tree branches until the required parameters and the optional parameters have reached the last branch in the structure.

Note: The command “show system commandtree” lists the entire command tree for you.

3.2.3 Structure of a command

This section describes the syntax, conventions and terminology, and uses examples to represent them.

■ Format of commands

Most of the commands include parameters.

If the command parameter is missing, the CLI informs you about the detection of an incorrect command syntax.

This manual displays the commands and parameters in the `Courier` font. Use them as shown in the manual ([see table 2](#)).

■ Parameters

The sequence of the parameters is relevant for the correct syntax of a command.

Parameters are required values, optional values, selections, or a combination of these things. The representation ([see table 2](#)) indicates the type of the parameter.

<code><command></code>	Commands in pointed brackets (<>) are obligatory.
<code>[command]</code>	Commands in square brackets ([]) are optional.
<code><parameter></code>	Parameters in pointed brackets (<>) are obligatory.
<code>[parameter]</code>	Parameters in square brackets ([]) are optional.
<code>...</code>	An ellipsis (3 points in sequence without spaces) after an element indicates that you can repeat the element.
<code>[Choice1 Choice2]</code>	A vertical line enclosed in brackets indicates a selection option. Select one value. Elements separated by a vertical line and enclosed in square brackets indicate an optional selection (Option1 or Option2 or no selection).
<code>{list}</code>	Curved brackets ({ }) indicate that a parameter is to be selected from a list of options.
<code>{Choice1 Choice2}</code>	Elements separated by a vertical line and enclosed in curved brackets ({ }) indicate an obligatory selection option (option1 or option2).
<code>[param1 {Choice1 Choice2}]</code>	Shows an optional parameter that contains an obligatory selection.
<code><a.b.c.d></code>	Small letters are wild cards. You enter parameters with the notation a.b.c.d with decimal points (e.g. IP addresses)
<code><cr></code>	You press the Enter key to create a line break (carriage return).

Table 2: Parameter and command syntax

The following list shows the possible parameter values within the Command Line Interface:

Value	Description
IP address	This parameter represents a valid IPv4 address. The address consists of 4 decimal numbers with values from 0 to 255. The 4 decimal numbers are separated by a decimal point. The IP address 0.0.0.0 is a valid entry.
MAC address	This parameter represents a valid MAC address. The address consists of 6 hexadecimal numbers with values from 00 to FF. The numbers are separated by a colon, for example, 00:F6:29:B2:81:40.
string	User-defined text with a length in the specified range, e.g. a maximum of 32 characters.
character string	Use double quotation marks to indicate a character string, e.g. "System name with space character".
number	Whole integer in the specified range, e.g. 0...999999.
date	Date in format YYYY-MM-DD.
time	Time in format HH:MM:SS.

Table 3: Parameter values in the Command Line Interface

■ Network addresses

Network addresses are a requirement for establishing a data connection to a remote work station, a server, or another network. You distinguish between IP addresses and MAC addresses.

The IP address is an address allocated by the network administrator. Do not use duplicate addresses in one network area.

The MAC addresses are assigned by the hardware manufacturer. MAC addresses are unique worldwide.

The following table shows the representation and the range of the address types:

Address Type	Format	Range	Example
IP Address	nnn.nnn.nnn.nnn	nnn: 0 to 255 (decimal)	192.168.11.110
MAC Address	mm:mm:mm:mm:mm:mm	mm: 00 to ff (hexadecimal number pairs)	A7:C9:89:DD:A9:B3

Table 4: Format and range of network addresses

■ Strings

A string is indicated by quotation marks. For example, "System name with space character". Space characters are not valid user-defined strings. You enter a space character in a parameter between quotation marks.

■ Examples of commands

Example 1: clear arp-table

Command for deleting dynamic entries in ARP Cache.

`clear arp-table` is the command name. The command does not require any other parameters, and can be executed with <Enter>.

Example 2: signal-contact monitor ACA-removal

Command for displaying the removal of the AutoConfiguration Adapter.

```
(Hirschmann EAGLE One) (config)#signal-contact monitor ACA-removal
enable          Enable the option.
disable (default) Disable the option.
```

`signal-contact monitor ACA-removal` is the command name. The parameter is required. It can have the value `enable` or `disable`.

Example 3: nat 1to1 add

Command for adding a 1:1 NAT rule.

```
(Hirschmann EAGLE One) (config)#nat 1to1 add
[1..512]           NAT rule number.
[internal-net]    Internal network address.
[external-net]    External network address.
[netmask]         Network mask.
[contrack]        Protocol helper support.
[comment]         Rule comment.
[invert-direction] Invert direction of the rule (change used
                  interface).
[double-nat]      Do NAT operation also on output (dest. and
                  source NAT).
<cr>             Press Enter to execute the command.
```

“nat 1to1 add” is the command name.

The parameters [1..512] (i.e. the number of the NAT rule to be added), [internal-net], [external-net], [netmask] and [comment] are optional.

3.3 Properties of the CLI

3.3.1 Input prompt

■ Command mode

With the input prompt, the CLI shows you which of the three modes you are in:

- ▶ (Hirschmann EAGLE One) >
User Exec mode
- ▶ (Hirschmann EAGLE One) #
Privileged Exec mode
- ▶ (Hirschmann EAGLE One) (config)#
Global Configuration mode

■ Exclamation mark and asterisk

Exclamation mark “!”

An exclamation mark “!” in the first position of the input prompt shows you that the password for the user “admin” is still on the default setting.

```
!(Hirschmann EAGLE One) >
```

Asterisk “*”

An asterisk “*” in the first or second position of the input prompt shows you that the settings in the volatile memory and the settings in the non-volatile memory are different. In your configuration, the device has detected modifications which have not been saved.

```
*(Hirschmann EAGLE One)>
```

3.3.2 Key combinations

The following key combinations make it easier for you to work with the Command Line Interface:

Key combination	Description
CTRL + H, Backspace	Delete previous character
CTRL + A	Go to beginning of line
CTRL + E	Go to end of line
CTRL + F	Go forward one character
CTRL + B	Go backward one character
CTRL + D	Delete current character
CTRL + U, X	Delete to beginning of line
CTRL + K	Delete to end of line
CTRL + W	Delete previous word
CTRL + P	Go to previous line in history buffer
CTRL + R	Rewrite or paste the line
CTRL + N	Go to next line in history buffer
CTRL + Q	Enable serial flow
CTRL + S	Disable serial flow
CTRL + Z	Return to root command prompt
Tab, <SPACE>	Command line completion
Exit	Go to next lower command prompt
?	List choices

Table 5: Key combinations in the Command Line Interface

The Help command displays the possible key combinations in CLI on the screen:

```
EES #help

HELP:
Special keys:

Ctrl-H, BkSp delete previous character
Ctrl-A .... go to beginning of line
Ctrl-E .... go to end of line
Ctrl-F .... go forward one character
Ctrl-B .... go backward one character
Ctrl-D .... delete current character
Ctrl-U, X .. delete to beginning of line
Ctrl-K .... delete to end of line
Ctrl-W .... delete previous word
Ctrl-P .... go to previous line in history buffer
Ctrl-R .... rewrites or pastes the line
Ctrl-N .... go to next line in history buffer
Ctrl-Q .... enables serial flow
Ctrl-S .... disables serial flow
Ctrl-Z .... return to root command prompt
Tab, <SPACE> command-line completion
Exit .... go to next lower command prompt
? .... list choices

EES #
```

Figure 12: Listing the key combinations with the Help command

3.3.3 Data entry elements

■ Command completion

To facilitate making entries, the CLI gives you the option of command completion (Tab Completion). Thus you are able to abbreviate key words.

- ▶ Type in the beginning of a keyword. If the characters entered identify a keyword, the CLI will complete the keyword when you press the tab key or the space key. If there is more than one option for completion, enter the letter or the letters being necessary for uniquely identifying the keyword. Press the tab key or the space key again. After that, the system completes the command or parameter.
- ▶ If you make a non-unique entry and press "Tab" or "Space" twice, the CLI provides you with a list of options.
- ▶ On a non-unique entry and pressing "Tab" or "Space", the CLI completes the command up to the end of the uniqueness. If several commands exist: When you press "Tab" or "Space" again, the CLI provides you with a list of options.

Example:

If you enter „lo“ and "Tab" or "Space"

```
(Hirschmann EAGLE One) (Config)#lo
```

the CLI completes the command up to the end of the uniqueness to „log“.

```
(Hirschmann EAGLE One) (Config)#log
```

When "Tab" or "Space" is pressed again, the CLI provides you with a list of options (logging, logout).

```
(Hirschmann EAGLE One) (Config)#log
```

```
logging logout
```

■ Possible commands/parameters

You can obtain a list of the commands or the possible parameters by entering "help" or "?", for example by entering

```
(Hirschmann EAGLE One) >show ?
```

When you enter the command displayed, you get a list of the parameters available for the command `show`.

When you enter the command without space character in front of the question mark, the device displays the help text for the command itself:

```
!*#(Hirschmann EAGLE One)(Config)#show?  
    show                Display device options and settings.
```

3.3.4 Line length

If you are using a terminal with a line length of 80 characters, the help texts are split up, as shown in the following screenshot ([see figure 13](#)). For example, for the help text for “DSA Fingerprint for SSH”, the remainder “df:3b:11” appears on the next line.

You avoid this effect by using a terminal emulation with a line length of 132 characters ([see figure 14](#)).

```

!(Hirschmann EAGLE One) (config)#show login

Login parameters
-----
Access per SSH.....enabled
SSH Access port number.....22
DSA Fingerprint for SSH....."dc:28:69:d5:07:b1:85:ed:ec:de:05:64:98:
ef:5f:77"
RSA Fingerprint for SSH....."ce:1f:34:24:4e:ec:26:73:97:f3:80:02:93:
90:0b:cc"
Access per Web (HTTPS).....enabled
Web Access port number (HTTPS).....443
SNMP version 1.....disabled
SNMP version 2.....disabled
SNMP port number.....161
SNMP over HTTPS tunneling.....disabled
RADIUS auth. of SNMP v3 local users.....disabled
Inactivity timeout Web (minutes).....5
Inactivity timeout serial (minutes).....5
Inactivity timeout SSH (minutes).....120
Login prompt....."Hirschmann EAGLE One"
Login banner....."SAMPLE TEXT\n\tSAMPLE TEXT\n\t\tSAMPLE
TEXT\n\t\t\tSAMPLE TEXT"
!(Hirschmann EAGLE One) (config)#

```

Figure 13: “Show login” command with a line length of 80 characters


```

!(Hirschmann EAGLE One) (config)#show login
Llogin parameters
-----
Access per SSH.....enabled
SSH Access port number.....22
DSA Fingerprint for SSH....."dc:28:69:d5:07:b1:85:ed:ec:de:05:64:98:ef:5f:77"
RSA Fingerprint for SSH....."ce:1f:34:24:4e:ec:26:73:97:f3:80:02:93:90:0b:cc"
Access per Web (HTTPS).....enabled
Web Access port number (HTTPS).....443
SNMP version 1.....disabled
SNMP version 2.....disabled
SNMP port number.....161
SNMP over HTTPS tunneling.....disabled
RADIUS auth. of SNMP v3 local users.....disabled
Inactivity timeout Web (minutes).....5
Inactivity timeout serial (minutes).....120
Inactivity timeout SSH (minutes)....."Hirschmann EAGLE One"
Login banner....."SAMPLE TEXT\n\t\SAMPLE TEXT\n\t\SAMPLE TEXT"
!(Hirschmann EAGLE One) (config)#

```

Figure 14: "Show login" command with a line length of 132 characters

4 Examples

4.1 Change timeout default setting

■ Task assignment

The following example shows how you find and execute a command for changing the timeout value default setting for your SSH connection. On delivery, this value is set to 5 minutes. After this time has elapsed, the CLI logs the user out if no keys have been pressed. You have the option of setting a value for this timeout in the range from 1 to 120 minutes.

■ Login to the CLI

Login to the CLI as described above ([see on page 14 “Preparing the data connection”](#)).

■ Finding the command mode

You are in the User Exec mode ([see on page 24 “Mode-based command hierarchy”](#)).

Enter a question mark ? to get a list of the commands available in this mode ([see figure 9](#)).

The corresponding command is located in a different mode. The Privileged Exec mode provides a wider range of commands.

To switch to the Privileged Exec mode quickly and easily, you enter “en” and a space. The CLI completes the command to “enable” ([see on page 38 “Data entry elements”](#)). Execute the command with the Enter key. The command prompt changes from (Hirschmann EAGLE One) > zu (Hirschmann EAGLE One) #, thus informing you that you are now in the Privileged Exec mode.

```
(Hirschmann EAGLE One) >enable
```

```
(Hirschmann EAGLE One) #?
```

- Enter a question mark ? to get a list of the commands available in this mode.

The “login” command is used to perform this task.

- Enter “login”.
“lo” and a space character is not sufficient here, as it is not clear whether you want to execute the “login” or “logout” command. However, if you enter a space again, you get a list of the commands that begin with “lo”.

```
!(Hirschmann EAGLE One) #lo
login          Set login parameters.
logout        Exit this session. Any unsaved changes are lost.
```

- Finding, completing and executing commands
 - After “login” enter a question mark to display the additional branches of the command.

```
!(Hirschmann EAGLE One) #login ?
access        Set login access parameters.
timeout       Set login timeout parameters.
```

The “login timeout” command is used to perform this task.

- After “login”, enter a “t” and a space. The CLI automatically completes the command to “login timeout” .
- After “login timeout” enter a question mark to display the additional branches of the command.

```
!(Hirschmann EAGLE One) #login timeout ?
serial        Set login timeout for serial line connections.
ssh           Set login timeout for SSH connections.
web           Set login timeout for web connections.
```

The “login timeout ssh” command is used to perform this task.

- After “login timeout ssh” enter a question mark to display the possible parameters for the command.
-

```
!(Hirschmann EAGLE One) #login timeout ssh ?  
<1..120>          Enter a number in the given range.
```

- After “login timeout ssh” enter the value desired, in this case 120, to set the timeout to 120 minutes.
-

```
!(Hirschmann EAGLE One) #login timeout ssh 120
```

- Execute the command by pressing the Enter key.
-
- Checking the execution with the Show command
 - Enter show to display the possible show commands.

```
(Hirschmann EAGLE One) (config)#show
authentication      Display ordered methods for authentication lists.
config              Show configuration.
config-watchdog     Configure the Auto Configuration Undo settings.
denial-of-service   Show denial-of-service parameters.
device-status       Show the device status settings and the current
                   device status itself.

dhcp-relay          Show DHCP Relay parameters.
dhcp-server         Show DHCP Server parameters.
flm                 Show information about Firewall-Learning-Mode
interfaces          Show interface parameters.
lldp                Show the LLDP information.
logging             Display logging parameters.
login               Show login parameters.
nat                 Display the NAT settings.
network             Show network data.
packet-filter       Show the packet-filter configuration.
packet-forwarding   Show transparent mode packet forwarding settings.
radius              Show the RADIUS settings
redundancy          Show the redundancy settings.
running-config      Show the currently running configuration.
signal-contact      Display Signal Contact settings.
snmptraps           Display SNMPv3 traps.
snmp                Show SNMP configuration parameters and
                   information.

system              Show system related items.
temperature         Show temperature limits.
user-firewall       Show the user firewall settings.
users               Display users and user accounts information.
vpn                 Show VPN settings.
```

- Then enter “login” to display your current login settings.

```
!(Hirschmann EAGLE One) #show login

Login parameters
-----
Access per SSH.....enabled
SSH Access port number.....22
DSA Fingerprint for SSH....."0a:7f:06:05:27:35:53:dd:f2:
61:db:fa:0f:df:3b:11"
RSA Fingerprint for SSH....."6d:40:06:c3:f8:2d:cb:68:40:
dc:09:7f:b3:c2:d8:ee"
Access per Web (HTTPS).....enabled
Web Access port number (HTTPS).....443
SNMP version 1.....disabled
SNMP version 2.....disabled
SNMP port number.....161
Inactivity timeout Web (minutes).....5
Inactivity timeout serial (minutes).....5
Inactivity timeout SSH (minutes).....120
Login prompt....."Hirschmann EAGLE One"
!(Hirschmann EAGLE One) #
```

4.2 Login Banner

This dialog allows you to enter a login banner.

The device displays the login banner when a user logs in to the user interface (graphical user interface or CLI).

The login banner is up to 255 characters long. The characters in the ASCII code range 0x20 (space character, “ ”) to ASCII code 0x7E (tilde “~”) are allowed with the exception of percent signs (% , 0x25).

You have the option of adding a fixed line break to the banner with “\n”, and a tab with “\t”. These sequences count as 2 characters.

```
!(Hirschmann EAGLE One) #login banner
<string>                Enter a user-defined text, max. 255 characters.

!(Hirschmann EAGLE One) #login banner
EXAMPLE\n\tEXAMPLE\n\t\tEXAMPLE\n\t\t\tEXAMPLE
!(Hirschmann EAGLE One) #
```

```
login as:  
admin@a.b.c.d's password:
```

```
Copyright (c) 2007-2013 Hirschmann Automation and Control GmbH
```

```
All rights reserved
```

```
EAGLEONE Release ONE-05.3.00
```

```
(Build date 2013-09-09 09:09)
```

```
System Name:  EAGLEONE-000000  
Netw. Mode  :  transparent  
Mgmt-IP     :  a.b.c.d  
Base-MAC    :  00:11:22:33:44:55  
System Time:  TUE SEP 10 10:10:10 2013
```

```
EXAMPLE
```

```
EXAMPLE
```

```
EXAMPLE
```

```
EXAMPLE
```

```
NOTE: Enter '?' for Command Help. Command help displays all options  
that are valid for the particular mode.
```

```
For the syntax of a particular command form, please  
consult the documentation.
```

```
!*(Hirschmann EAGLE One) >enable
```

4.3 Saving the Configuration

To ensure that your password settings and your other configuration changes are kept after the device is reset or after an interruption of the voltage supply, you save the configuration. To save your current configuration, you proceed as follows:

- Enter `enable` to switch to the Privileged Exec mode.
- Enter the following command:
`copy config running-config nv [profile]`
- Execute the command by pressing the Enter key.

```
(Hirschmann EAGLE One) >enable

!(Hirschmann EagleONE) #copy
config                Copy configuration.
eventlog              Copy eventlog.
firmware              firmware update.
sysinfo               Copy system information for service purpose.
sysinfoall            Copy system information and event log.

!(Hirschmann EagleONE) #copy config
aca                   Copy configuration from ACA to NV memory.
nv                    Load configuration from NV memory.
running-config        Save running configuration.

!(Hirschmann EagleONE) #copy config running-config
nv                    save running-config to nv memory.

!(Hirschmann EagleONE) #copy config running-config nv
[profile]             Save configuration to profile.
<cr>                  Press Enter to execute the command.

!(Hirschmann EagleONE) #copy config running-config nv
```

5 Maintenance

Hirschmann is continually working to improve and develop our software. You should regularly check whether there is a new version of the software that provides you with additional benefits. You will find software information and downloads on the product pages of the Hirschmann website.

5.1 Service Shell

A service technician uses the Service Shell function for maintenance of your functioning device. If you need service support, this function allows the service technician to access internal functions of your device from an external location.

Note: The Service Shell function is for service purposes exclusively. This function allows the access on internal functions of the device. In no case, execute internal functions without service technician instructions. Executing internal functions such as deleting the content of the NVM (non-volatile memory) possibly leads to inoperability of your device.

- To switch from the User Exec mode to the Privileged Exec mode, enter `enable` or `en` and a space, and press the enter key.
- To get a list of the commands available in this mode, enter a question mark `?`.
- To start the Shell Service function, enter `serviceshell` or `ser` in the privileged exec mode and a space and then press the enter key.
- To end the Shell Service function, enter `exit` and then press the enter key.

```
!(Hirschmann EAGLE One) >enable

!(Hirschmann EAGLE One) #?
clear          Clear several items.
configure     Enter into global config mode.
copy          Copy different kinds of items.
debug         Service functions to find configuration errors.
exit          Exit from current mode.
help          Display help for various special keys.
history       Show a list of previously run commands.
login         Set login parameters.
logout        Exit this session.
network       Modify network parameters.
ping          Send ICMP echo packets to a specified
              IP address.
profile       Activate or delete configuration profiles.
reboot        Reset the device (cold start).
save          Save configuration.
serviceshell Enter system mode.
set           Set device parameters.
show          Display device options and settings.
traceroute    Trace route to a specified host.

!(Hirschmann EAGLE One) #serviceshell

-> exit
Au revoir!

!*(Hirschmann EAGLE One) #
```

■ Permanently disabling the Service Shell

If you disable the Service Shell function, you maintain the device configuration option. In this case, the service technician has no possibilities to access internal functions of your device to call up additional required information.

Note:

Disabling the Service Shell function produces a permanent effect. To reactivate the Service Shell function, send the device back to the manufacturer.

- To display the Service Shell function, enter `serviceshell` or `ser` and a space, and then a question mark `?` .
- To permanently deactivate the Shell Service function, enter `deactivate` or `d` and a space, and press the enter key. This process is irreversible.

```
!(Hirschmann EAGLE One) >enable

!(Hirschmann EAGLE One) #serviceshell?
[deactivate]          Disable the service shell access permanently
                      (Cannot be undone).
<cr>                  Press Enter to execute the command.

!(Hirschmann EAGLE One) #serviceshell deactivate
```

A Readers' Comments

What is your opinion of this manual? We are constantly striving to provide as comprehensive a description of our product as possible, as well as important information to assist you in the operation of this product. Your comments and suggestions help us to further improve the quality of our documentation.

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C Further Support

■ Technical Questions

For technical questions, please contact any Hirschmann dealer in your area or Hirschmann directly.

You will find the addresses of our partners on the Internet at <http://www.hirschmann.com>

Contact our support at <https://hirschmann-support.belden.eu.com>

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