

## Chapter 7

# Filtering Command Output

For commands that display output, such as the **show** commands, you can filter the output. Topics include:

- Using Keyboard Sequences at the MORE Prompt on page 69
- Using the Pipe ( | ) Symbol When Entering Commands on page 70

### Using Keyboard Sequences at the MORE Prompt

If the output from a command is longer than the screen length, it appears one screen at a time by means of a UNIX **more**-type interface. The prompt **—(more)—** indicates that more output is available. This format is helpful when you want to scroll and search through lengthy output.

The SRC software uses the Less program to provide navigation and search capability at the MORE prompt. The SRC software does not permit the Less program access to files or the shell.

Table 11 lists the keyboard sequences for the commands most frequently used at the MORE prompt.

**Table 11: MORE Prompt Keyboard Sequences**

Category	Action	Keyboard Sequence
Get Help	Display information about the keyboard sequences you can display at the MORE prompt. Commands listed that access files or the shell are not supported.	h, H
Scroll Down	Scroll down one line.	e, Ctrl+e, j, Ctrl+n, Enter, down arrow
	Scroll down one-half screen.	d, Ctrl+d
	Scroll down one whole screen.	f, Ctrl+f, Ctrl+v, z, Space
	Scroll down to the bottom of the output.	F
	Jump to the last line in the output and exit to the CLI prompt.	G

**Table 11: MORE Prompt Keyboard Sequences (continued)**

Category	Action	Keyboard Sequence
Scroll Up	Display the previous line of output.	y, Ctrl+y, k, Ctrl+k, Ctrl+p, up arrow
	Scroll up one-half screen.	u, Ctrl+u
	Scroll up one whole screen.	b, Ctrl+b, Esc+v, w
	Jump to the first line of the output.	g
Move left and right	Move right one-half screen width.	Esc + ), right arrow
	Move left one-half screen width.	ESC + (, left arrow
Search	Search forward for a string.  You can also search for a string by specifying the   match filter when entering a command using the pipe symbol. See <i>Displaying Output That Matches a Regular Expression</i> on page 74.	/string
	Search backward for a string.	?string
	Repeat a previous search for a string.	Up arrow while in search mode
	Repeat the previous search for a string in the opposite direction.	Down arrow while in search mode
Interrupt or End Output, Redraw the Output, and Save the Output to a File	Interrupt the display of output.	q, :q, Q, :Q, ZZ
	Redraw the output on the screen.	r, Ctrl+r, Ctrl+l
	Redraw the output on the screen and discard buffered input.	R

## Using the Pipe ( | ) Symbol When Entering Commands

You can filter output by adding the | (*pipe*) symbol when you enter a command. For example, you can use the pipe symbol after show configuration:

```

user@host> show configuration ?
Possible completions:
<[Enter]>      Execute this command
> interfaces   Interfaces on the SDX platform
> policies     Policy configuration
> redirect-server Redirect server properties
> routing-options Protocol-independent routing option configuration
> services     Service configuration
> shared       Shared configuration
> slot         Component configuration
> snmp         SNMP agent
> subscribers  Subscriber and subscription configuration
> system       System parameters
|              Pipe through a command

```

The following example lists the filters that can be used with the pipe symbol:

```
user@host> show configuration | ?
Possible completions:
count          Count occurrences
display        Show additional kinds of information
except         Show only text that does not match a pattern
find           Search for first occurrence of the pattern
last           Display end of output only
match          Show only text that does match a pattern
no-more        Do not paginate output
save           Save output text to file
```

You can enter any of the pipe filters in conjunction. For example:

```
user@host> command | match regular-expression | save filename
```

See *Pipe Filter Functions* on page 72 for a description of each type of filter.



**NOTE:** This section describes *only* the filters that can be used for operational mode command output. For information about filters that can be used in configuration mode, see the *JUNOS System Basics Configuration Guide*.

## Using Regular Expressions with the Pipe Symbol

The `except`, `find`, and `match` filters used with the pipe symbol employ regular expressions to filter output. Juniper Networks uses the regular expressions as defined in POSIX 1003.2. (See Table 12.) If the regular expression contains spaces, operators, or wildcard characters, enclose the expression in quotation marks.

**Table 12: Common Regular Expression Operators in Operational Mode Commands**

Operator	Function
	Indicates that a match can be one of the two terms on either side of the pipe.
^	Used at the beginning of an expression, denotes where a match should begin.
\$	Used at the end of an expression, denotes that a term must be matched exactly up to the point of the \$ character.
[ ]	Specifies a range of letters or digits to match. To separate the start and end of a range, use a hyphen (-).
( )	Specifies a group of terms to match.

For example, if a command produces the following output:

```
1 2
2 2
3 2 1
4
```

A pipe filter of `| match 2` displays the following output:

```
1 2
2 2
3 2 1
```

A pipe filter of `| except 1` displays the following output:

```
2 2
4
```

For more examples of using regular expressions, see the following sections:

- Disregarding Output That Does Not Match a Regular Expression on page 73
- Displaying Output from the First Match of a Regular Expression on page 73
- Displaying Output That Matches a Regular Expression on page 74

## Pipe Filter Functions

You can perform the following tasks by using the pipe filter:

- Counting the Number of Lines of Output on page 72
- Displaying Output in XML Tag Format on page 72
- Disregarding Output That Does Not Match a Regular Expression on page 73
- Displaying Output from the First Match of a Regular Expression on page 73
- Displaying the End of the Output for a Command on page 74
- Displaying Output That Matches a Regular Expression on page 74
- Preventing Output from Being Paginated on page 75
- Saving Output to a File on page 75

### Counting the Number of Lines of Output

To count the number of lines in the output from a command:

- Enter `count` after the pipe symbol.

For example:

```
user@host> show configuration | count
Count: 369 lines
```

### Displaying Output in XML Tag Format

To display command output in XML tag format:

- Enter `display xml` after the pipe symbol.

The following example displays the `show cli directory` command output as XML tags:

```
user@host> show cli directory | display xml
<?xml version="1.0"?>
<output>
Current directory: /root
</output>
```

### Disregarding Output That Does Not Match a Regular Expression

If the regular expression contains any spaces, operators, or wildcard characters, enclose it in quotation marks.

For information about common regular expression operators, see Table 12 on page 71.

To disregard text that matches a regular expression:

- Specify the **except** command after the pipe symbol.

The following example displays information about configuration interfaces with the exception of the family information for each interface:

```
user@host> show configuration interfaces |except family
lo {
  unit 0 {
    inet {
      address 192.0.0.1;
    }
  }
}
eth0 {
  unit 0 {
    inet {
      address 10.27.7.45/24;
    }
  }
}
```

### Displaying Output from the First Match of a Regular Expression

When you use regular expressions, enclose any spaces, operators, or wildcard characters in quotation marks.

For information about common regular expression operators, see Table 12 on page 71.

To display output starting with the first occurrence of text matching a regular expression:

- Enter **find** after the pipe symbol.

The following example starts displaying information for the **show system information** command starting with the **System Time** section:

```
user@host> show system information |find time
Current time      2006-10-31 09:34:17 EST
Uptime           11 days, 17:26
Number of active users  2
Load Averages (1m/5m/15m) 0.09/0.08/0.09

Memory
Total 15G
Free 14G
```

**CPU Info**

```

Number of CPU 4
CPU Model      Dual Core AMD Opteron(tm) Processor 265
Clock Speed    1804.137 MHz

```

**Disk Information**

Mountpoint	Total	Used	Use%
/	2015M	1018M	50%
/altroot	2015M	1015M	50%
/boot	98M	14M	14%
/var	5039M	497M	9%

. . .

**Displaying the End of the Output for a Command**

To display the end of the output for a command:

- Enter `last` after the pipe symbol.

The following example shows the end of the output for the `show system information` command.

```

user@host> show system information |last
Temperature
System +26 C
CPU-1   +39 C
CPU-2   +39 C

Fan Speed
Fan-1 9375 RPM
Fan-2 9375 RPM

```

**Displaying Output That Matches a Regular Expression**

If the regular expression contains any spaces, operators, or wildcard characters, enclose it in quotation marks.

For information about common regular expression operators, see Table 12 on page 71.

To display output that matches a regular expression:

- Enter `match regular-expression` after the pipe symbol.

The following example matches all Ethernet interfaces in the interface configuration:

```

user@host> show configuration interfaces | match eth
eth0 {

```

## Preventing Output from Being Paginated

By default, if output is longer than the length of the terminal screen, a **MORE** message lets you display the remaining output when you press the Spacebar. You can use the **| no-more** filter to display all output at once. This feature is useful when you want access to the entire output, such as to copy the entire output and paste it into an e-mail message.

To prevent the output from being paginated:

- Enter **no-more** after the pipe symbol.

For example, to display all output from the **show configuration** command at once:

```
user@host> show configuration | no-more
```

## Saving Output to a File

When command output is lengthy, when you need to store or analyze the output, or when you need to send the output in an e-mail or by FTP, you can save the output to a file.



**NOTE:** When you run a **show** command, your SRC privileges determine the information that you view. Therefore, when you save this information, you are saving only the configuration information that you have privileges to view.

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By default, the file is placed in the current working directory of the CLI.

To save command output to a file:

- Enter **save filename** after the pipe symbol.

The following example saves the output from the **show** command to a file named **my-config-info.txt**:

```
[edit system]
user@host> show | save my-config-info.txt
Wrote 78 lines of output to 'my-config-info.txt'
user@host>
```

