



Utility Commands

This module describes the utility commands for Cisco IOS XR software. Utility commands provide CLI equivalents to common UNIX commands.



Note Keywords are entered using the displayed syntax, or with UNIX-equivalent syntax. The UNIX-equivalent syntax is displayed in parentheses () in the syntax description. For example, the **universal** keyword can also be entered using the UNIX-equivalent (**-u**). To display the UNIX-equivalent syntax online, enter the **usage** keyword.

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utility bc

To implement an arbitrary precision calculator, use the **utility bc** command in EXEC mode or administration EXEC mode.

utility bc [**file** *input-file*]

Syntax Description

file (Optional) Specifies the text file containing commands and function definitions to be interpreted by the bc utility.

input-file

After all files have been read, the bc utility reads input from the standard input (keyboard). If no files are specified, then only the standard input (keyboard) is used.

The syntax of the *input-file* argument is as follows: *device* :[/ *directory-path*]/ *filename*

Possible values of the *device*: argument are:

disk0:

Uses a file from disk0: file system.

disk0a:

Uses a file from disk0a: file system partition.

disk1:

Uses a file from disk1: file system.

disk1a:

Uses a file from disk1a: file system partition.

ftp:

Uses a file from an FTP network server. The syntax is

ftp:[[[/*username*[:*password*]@]*location*]/*directory*]/*filename*

harddisk:

Uses a file from the hard disk drive file system (if present).

harddiska:

Uses a file from the hard disk partition (if present).

nvrn:

Uses a file from the nvrn: file system.

ipv4

Uses a file from an IPv4 access list or prefix list.

ipv6

Uses a file from an IPv6 access list or prefix list.

rcp:

Uses a file from a remote copy protocol (rcp) network server. The syntax is

rcp:[[[/*username*@]*location*]/*directory*]/*filename*

tftp:

Uses a file from a TFTP network server. The syntax is **tftp:**[[/*location*]/*directory*]/*filename*

Use the online help (?) function to display the available devices and network protocols.

Command Default

If an input file is not specified, the standard input (keyboard) is used.

Command Modes

EXEC

Administration EXEC

Command History

Release	Modification
Release 3.4.0	This command was introduced.
Release 3.6.0	The following file systems were added: disk0a: , disk1a: and compactflasha: .

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the **utility bc** command to use the interactive, programmable calculator that supports a complete set of control structures, including functions. The utility first processes any specified files, and then reads input from the keyboard (standard input).

Input files (and standard input) are ASCII text files containing sequences of bc statements to be executed.

**Note**

The bc utility uses the bc programming language, an arbitrary precision calculator language with syntax similar to the C programming language. The bc utility does not support character or string manipulation.

The bc utility supports:

- 26 functions
- 26 simple variables
- 26 array variables (up to 2048 elements per array).

The bc utility supports the following common programming language constructs:

- “if”, “while”, and “for” statements
- User-defined functions with parameters
- Local variables

Information About Supported Network Protocols

In the syntax for the **ftp:**, **rcp:**, and **tftp:** network protocols, the location is either an IP address or a hostname. The filename is specified relative to the directory used for file transfers.

When no device is specified, the current directory is used. To view the current directory, enter the **pwd** command.

Table 1: Network Protocols Supported by Cisco IOS XR Software

Prefix	Name	Description
tftp:	Trivial File Transfer Protocol	<i>TFTP</i> is a simplified version of FTP that allows files to be transferred from one computer to another over a network, usually without the use of client authentication (for example, username and password).

Prefix	Name	Description
ftp:	File Transfer Protocol	<i>FTP</i> is an application protocol, part of the TCP/IP protocol stack, and is used for transferring files between network nodes. FTP requires a username and password.
rcp:	remote copy protocol	<i>Rcp</i> is a protocol that allows users to copy files to and from a file system residing on a remote host or server on the network. Rcp uses TCP to ensure the reliable delivery of data. Rcp downloads require a username.

Task ID

Task ID Operations

universal execute

In the following example, the **utility bc** command is used to execute the bc statements contained in the ASCII text file exp.txt:

```
RP/0/RP0/CPU0:router# utility bc file disk0:/usr/exp.txt
```

```
50  
15  
25  
3  
17
```

utility cut

To extract selected characters or fields from standard input or from a file, use the **utility cut** command in EXEC mode or administration EXEC mode.

utility cut `{list character-list|fields field-list [nodelim] [delimiter delimiter-character]WORD}` [**file** *input-file*]**usage**}

Syntax Description

list <i>character-list</i>	(-c) Cuts out the characters that are located on each line as specified with the <i>character-list</i> argument. The <i>character-list</i> argument specifies the character positions or range of the characters to be cut. <ul style="list-style-type: none"> Use a comma (,) to indicate more than one character. For example, utility list 1,2,5 outputs the first, second, and fifth characters. Use a dash (-) to indicate a range. For example, utility list 1-64 outputs the first 64 characters of each line, utility list 5- outputs the fifth character to the end of the line. <p>Note Lines are separated by a delimiter. The default delimiter is tab.</p>
fields <i>field-list</i>	(-f) Cuts out the fields (lines) as indicated with the <i>field-list</i> argument. The <i>field-list</i> argument specifies the field numbers or ranges. For example, utility field 2,9 outputs the second and ninth fields, utility field 1-3 outputs the first three fields, utility field -6 outputs the first six fields. <p>Note The fields indicated by the <i>field-list</i> argument are assumed to be separated in the file by a delimiter character. The default delimiter is tab. Use the delimiter <i>delimiter</i> option to specify a delimiter character. Lines without field delimiters are processed unless the nodelim keyword is specified.</p>
nodelim	(Optional) (-s) Ignores lines with no delimiter. Use this optional keyword when the fields <i>field-list</i> keyword and argument is specified.
delimiter <i>delimiter-character</i>	(Optional) (-d) Specifies an alternative delimiter to indicate the end of each field. Replace the <i>delimiter-character</i> argument with the character used as the delimiter.
<i>WORD</i>	(Optional) UNIX command-line option string. The maximum number of characters is 80.
file <i>input-file</i>	(Optional) Storage device and directory path of the text file used instead of the standard input (keyboard input). The syntax of the <i>input-file</i> argument is: <i>device</i> <code>:[/ <i>directory-path</i>]/ <i>filename</i></code> The <i>device</i> argument, followed by a colon, indicates the name of the device where the file is located. Use the online help (?) function to display the available storage devices and network protocols.

usage (Optional) Displays the UNIX options supported by this command.

Command Default If no file is specified, the keyboard input (standard input) is used.
The delimiter is tab.

Command Modes EXEC
Administration EXEC

Command History	Release	Modification
	Release 3.4.0	This command was introduced.
	Release 3.6.0	The following devices were added: disk0a: , disk1a: and compactflasha: .

Usage Guidelines The **utility cut** command cuts out columns, fields, or characters displayed from standard input or from a file. Use the **fields** *field-list* keyword and argument if the fields vary in length from line to line. (The lines must be separated by a delimiter character.) By default, the field delimiter character is the Tab key. Use the **delimiter** *delimiter-character* keyword and argument to specify a different delimiter.

Use the **list** *character-list* keyword and argument only if the fields are of a fixed length. Replace the *character-list* argument with the character positions to be extracted.

For the *character-list* argument, use a comma (,) to indicate more than one character, or use a dash (-) to indicate a range. For example, **utility list 1,2,5** outputs the first, second, and fifth characters, **utility list 1-64** outputs the first 64 characters of each line, **utility list 5-** outputs the fifth character to the end of the line.

You can also use the cut utility as a filter. If no files are specified, the keyboard input (standard input) is used.



Note Keywords are entered using the displayed syntax, or with UNIX-equivalent syntax. The UNIX-equivalent syntax is displayed in parentheses () in the syntax description. For example, the **fields** keyword can also be entered using the UNIX-equivalent (-f). To display the UNIX-equivalent syntax online, enter the **usage** keyword.

In the following example, the **utility cut** command is entered with the **list** *character-list* keyword and argument to display the first 10 characters in each line. The output is from the results of the **show version** command, which is entered with the pipe (|) character:

```
RP/0/RP0/CPU0:router# show version | utility cut list 1-10

Cisco IOS
Copyright

ROM: Syste

router upt
System ima

cisco CRS-
```

```

7457 proce

16 Gigabit
2 Ethernet
20 Packet
20 SONET/S
2043k byte
38079M byt
1000592k b
1000640k b

Configurat
Package ac
--More--

```

In the following example, the **utility cut** command is used to extract fields from a file:

```

RP/0/RP0/CPU0:router# utility cut fields 1,5 delimiter : file disk0:/usr/passwd

root:Super-User
daemon:
bin:
sys:
adm:Admin
lp:Line Printer Admin
uucp:uucp Admin
nuucp:uucp Admin
listen:Network Admin
nobody:Nobody

```

In the following example, the **utility cut** command is used with the **delimiter** keyword to specify an alternative field delimiter:

```

RP/0/RP0/CPU0:router# utility cut fields 1,4,5 delimiter : file disk0:/usr/passwd

root:1:Super-User
daemon:1:
bin:2:
sys:3:
adm:4:Admin
lp:8:Line Printer Admin
uucp:5:uucp Admin
nuucp:9:uucp Admin
listen:4:Network Admin

```

In the following example, a range of fields is specified:

```

RP/0/RP0/CPU0:router# utility cut fields 1-4 delimiter : file disk0:/usr/passwd

root:x:0:1
daemon:x:1:1
bin:x:2:2
sys:x:3:3
adm:x:4:4
lp:x:71:8
uucp:x:5:5
nuucp:x:9:9
listen:x:37:4

```


In the following example, the **list** *character-list* keyword and argument are used to specify the character positions to be extracted:

```
RP/0/RP0/CPU0:router# utility cut list 1-30 file disk0:/usr/passwd
```

```
root:x:0:1:Super-User:/:/sbin/
daemon:x:1:1:/:
bin:x:2:2:/:usr/bin:
sys:x:3:3:/:
adm:x:4:4:Admin:/var/adm:
lp:x:71:8:Line Printer Admin:/
uucp:x:5:5:uucp Admin:/usr/lib
nuucp:x:9:9:uucp Admin:/var/sp
listen:x:37:4:Network Admin:/u
nobody:x:60001:60001:Nobody:/:
noaccess:x:60002:60002:No Acce
nobody4:x:65534:65534:SunOS 4.
```

=====

In the following example, the UNIX equivalent options are used directly. First, the **utility cut** command is entered with the **usage** keyword to display the possible options. Next, the **utility cut** command is entered with the options to extract the desired data.

```
RP/0/RP0/CPU0:router# utility cut usage
```

```
cut -c list [file], cut -f list [-d delim] [-s] [file]
```

```
RP/0/RP0/CPU0:router# utility cut -f 1,4 -d : disk0:/usr/passwd
```

```
root:1
daemon:1
bin:2
sys:3
adm:4
lp:8
```

utility date

To display the date and time, use the **utility date** command in EXEC mode or administration EXEC mode.

utility date {**format** *word*|**universal**|**usage***WORD*}

Syntax Description	format <i>word</i> (Optional) (+) Specifies the format for the date display. Use the online help system to display the available format syntax for the <i>word</i> argument.
	universal (Optional) (-u) Displays the date in Coordinated Universal Time (UTC) instead of local time. UTC is the standard term for Greenwich Mean Time (GMT).
	usage (Optional) Displays the UNIX options supported by this command.
	<i>WORD</i> (Optional) UNIX command-line option string. The maximum number of characters is 80.

Command Default The date is displayed in local time.

Command Modes EXEC
Administration EXEC

Command History	Release	Modification
	Release 3.4.0	This command was introduced.

Usage Guidelines To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

The **utility date** command displays the internal time and date for the router.

Date Format

Use the **format** *word* option to specify the format and content of the displayed date and time. The format is composed of ASCII characters and field descriptors prefaced with %, in a manner similar to a C-language printf() format specifier. In the output, each field descriptor is replaced by its corresponding value; all other characters are copied to the output without change. The format is specified using the following characters:

%C

Century in 'CC' form. For example: 20

%y

Year in 'YY' form. For example: 06

%m

Month in 'MM' form. For example: 08

%d

Date in 'DD' form. For example: 28

%H

Hour in 'hh (24 hr.)' form. For example: 18

%M

Minutes in 'mm' form. For example: 55

%S

seconds in 'ss' form. For example: 24



Note Keywords are entered using the displayed syntax, or with UNIX-equivalent syntax. The UNIX-equivalent syntax is displayed in parentheses () in the syntax description. For example, the **universal** keyword can also be entered using the UNIX-equivalent (**-u**). To display the UNIX-equivalent syntax online, enter the **usage** keyword.

Task ID**Task ID Operations**

universal execute

This example shows how to display the router date and time using the **utility date** command:

```
RP/0/RP0/CPU0:router# utility date
Fri Aug 04 11:53:38 UTC 2006
```

This example shows how to display the router date and time using a variety of options with the **format** keyword:

```
RP/0/RP0/CPU0:router# utility date format "%y%m%d"
060828
RP/0/RP0/CPU0:router# utility date format "%y-%m-%d"
06-08-28
RP/0/RP0/CPU0:router# utility date format "%Cy-%m-%d"
2006-08-28
RP/0/RP0/CPU0:router# utility date format "%Cy-%m-%d:%H:%M:%S"
2006-08-28:02:09:58
RP/0/RP0/CPU0:router# utility date format "DATE: %y-%m-%d %nTIME: %H:%M:%S"
DATE: 06-09-17
TIME: 12:42:24
```

Related Commands

Command	Description
utility date set, on page 13	Sets the internal date and time of the router.

utility date set

To set the router time, use the **utility date set** command in administration EXEC mode.

utility date set *hh:mm:ss*

Syntax Description

hh Specifies the hour in 2-digit numerical format. Range is 00 to 23.

mm Specifies the minutes in 2-digit numerical format. Range is 0 to 59.

SS Specifies the seconds in 2-digit numerical format. Range is 0 to 59.

Command Default

None

Command Modes

Administration EXEC

Command History

Release

Release 3.4.0

Modification

This command was introduced.

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

A colon (:) is required between the entry for hour, minutes, and seconds.



Note

Generally, if the system is synchronized by a valid outside timing mechanism, such as a Network Time Protocol (NTP) clock source, or if you have a networking device with calendar capability, you need not set the software clock. Use the **date** command or the **clock set** command if no other time sources are available.



Note

To manually copy the hardware clock (calendar) settings into the software clock, use the **clock read-calendar** command in EXEC mode.

By default, the system makes a “slow adjustment” if the new time is in the range of the following:

- -2.5 minutes + old time
- 5 minutes + old time

In a slow adjustment, the clock speed increases by less than 100 percent or decreases by less than 50 percent over a period of time from 1 second to 5 minutes until the clock catches up with the new time. This slow adjustment does not cause major discontinuities in the time flow. Use the **-S0** option to disable the slow adjustment.

Task ID

Task ID Operations

universal execute

The following example shows how to set the time using the **utility date set** command:

```
RP/0/RP0/CPU0:router(admin)# utility date set 13:07:00
```

```
  Fri Sep 15 13:07:00 UTC 2006
```

Related Commands

Command	Description
utility date, on page 10	Displays the internal date and time of the router.

utility df

To display the amount of disk space available for a directory or file, use the **utility df** command in EXEC mode or administration EXEC

mode.

utility df [{{*WORD*} [kbytes] [mountinfo] [vsfStats] [file *input-file*]}|usage}]

Syntax Description

WORD	(Optional) UNIX command-line option string. The maximum number of characters is 80.
kbytes	(Optional) (-k) Displays the sizes in 1-K blocks (1024-byte units) instead of the default of 512 byte blocks.
mountinfo	(Optional) (-n) Displays the file-system mountpoints and types only.
vsfStats	(Optional) (-g) Displays all statvfs() information.
file <i>input-file</i>	(Optional) Specifies the storage device and directory path of the device, directory, or file. When a directory or file is specified, the df utility displays the amount of space on the file system that contains the directory or file. If no files are specified, then only the standard input (keyboard) is used. The syntax of the <i>input-file</i> argument is as follows: <i>device</i> :[/ <i>directory-path</i>] / <i>filename</i> The <i>device</i> argument, followed by a colon, indicates the name of the device where the file is located. Use the online help (?) function to display the available storage devices and network protocols.
usage	(Optional) Displays the UNIX options supported by this command.

Command Default

Information is displayed for all file systems.
The results are displayed in 512-byte blocks.

Command Modes

EXEC
Administration EXEC

Command History

Release	Modification
Release 3.4.0	This command was introduced.
Release 3.6.0	The following devices were added: disk0a: , disk1a: and compactflasha: .

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the (disk free) **utility df** command to display the amount of disk space available for a device, directory, or file. Enter the command without keywords or arguments to display information for all mounted file systems.

Use the **vsfStats** keyword to invoke the `statvfs()` function, which provides additional details for all mounted file systems.



Note Keywords are entered using the displayed syntax, or with UNIX-equivalent syntax. The UNIX-equivalent syntax is displayed in parentheses () in the syntax description. For example, the **kbytes** keyword can also be entered using the UNIX-equivalent (**-k**). To display the UNIX-equivalent syntax online, enter the **usage** keyword.

Task ID

Task ID Operations

universal execute

In the following example, the (disk free) **utility df** command is entered without keywords or arguments to display information for all file systems:

```
RP/0/RP0/CPU0:router (admin) # utility df

/dev/hd0t6          77987744      61592  77926152      1% /harddisk:/
/nvram:             4086          60      4026          2%
/dev/disk1t6       2001280       382720  1618560       20% /disk1:/
/dev/disk0t6       2001184       533568  1467616       27% /disk0:/
/dev/fs0p1         121856         68      121787        1% /bootflash:
```

See [Table 3: utility df Column Descriptions \(left to right\), on page 18](#) for column descriptions.

In the following example, the **kbytes** keyword is used to display information in 1-K blocks (1024-byte units) instead of the default of 512-byte blocks:

```
RP/0/RP0/CPU0:router (admin) # utility df kbytes

/dev/hd0t6          38993872      30796  38963076      1% /harddisk:/
/nvram:             2043          30      2013          2%
/dev/disk1t6       1000640       191360  809280        20% /disk1:/
/dev/disk0t6       1000592       266784  733808        27% /disk0:/
/dev/fs0p1         60928         34      60893         1% /bootflash:
```

See [Table 3: utility df Column Descriptions \(left to right\), on page 18](#) for column descriptions.

In the following example, the **mountinfo** keyword is used to display file-system mountpoints and types only:

```
RP/0/RP0/CPU0:router (admin) # utility df mountinfo

Filesystem          Mounted on          Type
/dev/hd0t6          /harddisk:/        dos (fat32)
/nvram:
/dev/disk1t6        /disk1:/           dos (fat16)
/dev/disk0t6        /disk0:/           dos (fat16)
/dev/fs0p1          /bootflash:        flash
```


In the following example, the **vfsStats** keyword is used to invoke the `statvfs()` function, which provides additional details for all mounted file systems:

```
RP/0/RP0/CPU0:router(admin)# utility df vfsStats

/dev/hd0t6  /harddisk:/
  Blocks:  9748468 total    9740769 avail    [4096-byte blocks]
  Files :      0 total      0 avail
  Type  : dos (fat32)
  Flags : 00000120 [32bit, noatime]

/nvram:
  Blocks:    2043 total      2013 avail    [1024-byte blocks]
  Files :      0 total      0 avail
  Type  :
  Flags : 00000000 []

/dev/disk1t6  /disk1:/
  Blocks:   62540 total     50580 avail    [16384-byte blocks]
  Files :      0 total      0 avail
  Type  : dos (fat16)
  Flags : 00000120 [32bit, noatime]

/dev/disk0t6  /disk0:/
  Blocks:   62537 total     45863 avail    [16384-byte blocks]
  Files :      0 total      0 avail
  Type  : dos (fat16)
  Flags : 00000120 [32bit, noatime]

/dev/fs0p1  /bootflash:
  Blocks: 62390272 total  62355240 avail    [1-byte blocks]
  Files :      2 total      0 avail
  Type  : flash
  Flags : 00000000 []
```

This table describes the significant fields shown in the display.

Table 2: utility df Field Descriptions

Field	Description
Files	Number of files in the file system.
Blocks	Amount of space available on the file system in 1-K blocks.
Total	Amount of disk space used by the directory or file.
Avail	Amount of space available for use by the directory or file on the file system.
Type	Type of file system.
Flags	Displays the file system properties.

In the following example, the **file source** keyword and argument are used to specify a directory:

```
RP/0/RP0/CPU0:router(admin)# utility df file disk0:/usr
```

```
/dev/disk0t6          2001184    533568    1467616    27% /disk0:/
```

This table describes the significant fields shown in the display.

Table 3: utility df Column Descriptions (left to right)

Field	Description
Filesystem	File system for the displayed information.
1k-blocks	Amount of space available on the file system in 1-K blocks.
Used	Amount of disk space used by the directory or file.
Available	Amount of space available for use by the directory or file on the file system.
Use%	Percentage of space used on the file system.
Mounted on	Storage device where the file system is mounted.

Related Commands

Command	Description
utility du, on page 19	Displays the amount of disk space used by one or more directories or files.

utility du

To display the amount of disk space used in a device, directory, or file, use the **utility du** command in EXEC mode or administration EXEC mode.

utility du [{**all**|**specified**}] [{**kbytes**|**bytes**|**local**}] [*WORD*] [**file source**]|**usage**}

Syntax Description

all	(Optional) (-a) Displays the disk space used for each file in the directory. By default, information is displayed only for the directory. Use the all keyword to display the total disk space used by all files in the directory, including the directory itself.
specified	(Optional) (-s) Displays the total disk space used for each specified file, rather than the totals for any subdirectories.
kbytes	(Optional) (-k) Displays the disk space used in 1-K blocks (1024-byte units) instead of the default of 512-byte blocks.
bytes	(Optional) (-p) Displays the disk space used in bytes (the default is 512-byte blocks). Also generates error messages for exiting files that cannot be displayed.
local	(Optional) (-x) Displays information for the local device only.
<i>WORD</i>	(Optional) UNIX command-line option string. The maximum number of characters is 80.
file source	(Optional) Displays the disk space used for a device, directory, or file. The syntax for the <i>source</i> argument is <i>device</i> : / <i>directory-path</i> [/ <i>filename</i>] The <i>device</i> argument, followed by a colon, indicates the name of the device where the file is located. Use the online help (?) function to display the available storage devices and network protocols. Enter the utility du command without specifying a device, directory, or file to display information for the current directory, and subdirectories. (The command behaves as if the filename dot (.) is entered.)
usage	(Optional) Displays the UNIX options supported by this command.

Command Default

Information for the current directory is displayed.

Command Modes

EXEC

Administration EXEC

Command History

Release	Modification
Release 3.4.0	This command was introduced.
Release 3.6.0	The following devices were added: disk0a: , disk1a: , and compactflasha: .

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Enter the **utility du** command without specifying a file to display information for the current directory. The command behaves as if the filename dot (.) is entered.

**Note**

Keywords are entered using the displayed syntax, or with UNIX-equivalent syntax. The UNIX-equivalent syntax is displayed in parentheses () in the syntax description. For example, the **kbytes** keyword can also be entered using the UNIX-equivalent (**-k**). To display the UNIX-equivalent syntax online, enter the **usage** keyword.

Task ID**Task ID Operations**

universal execute

In the following example, the **utility du** command is used to display the disk space used for the subdirectories in the MPLS package directory:

```
RP/0/RP0/CPU0:router# utility du file disk0:/hfr-mpls-3.4.0

160 /disk0:/hfr-mpls-3.4.0/schema
104 /disk0:/hfr-mpls-3.4.0/lib/cerrno
625 /disk0:/hfr-mpls-3.4.0/lib/mib
2545 /disk0:/hfr-mpls-3.4.0/lib
9658 /disk0:/hfr-mpls-3.4.0/bin
39 /disk0:/hfr-mpls-3.4.0/startup
840 /disk0:/hfr-mpls-3.4.0/parser
37 /disk0:/hfr-mpls-3.4.0/configs
35 /disk0:/hfr-mpls-3.4.0/mib
35 /disk0:/hfr-mpls-3.4.0/rules
34 /disk0:/hfr-mpls-3.4.0/partitions
135 /disk0:/hfr-mpls-3.4.0/etc/compat
167 /disk0:/hfr-mpls-3.4.0/etc
66 /disk0:/hfr-mpls-3.4.0/instdb_v
181 /disk0:/hfr-mpls-3.4.0/lc/bin
33 /disk0:/hfr-mpls-3.4.0/lc/startup
246 /disk0:/hfr-mpls-3.4.0/lc
112 /disk0:/hfr-mpls-3.4.0/instdb
14006 /disk0:/hfr-mpls-3.4.0
```

In the following example, the **utility du** command is used to display the disk space used for a subdirectories:

```
RP/0/RP0/CPU0:router# utility du file disk0:/
hfr
-mpls-3.8.0/configs37 /disk0:/hfr-mpls-3.8.0/configs
```

In the following example, the **utility du** command is used to display the disk space used for the current working directory:

```
RP/0/RP0/CPU0:router# cd disk0:/
```

```
hfr
-mpls-3.8.0
RP/0/RP0/CPU0:router# utility du

      160 ./schema
      104 ./lib/cerrno
      625 ./lib/mib
     2545 ./lib
     9658 ./bin
        39 ./startup
      840 ./parser
        37 ./configs
        35 ./mib
        35 ./rules
        34 ./partitions
      135 ./etc/compat
      167 ./etc
        66 ./instdb_v
      181 ./lc/bin
        33 ./lc/startup
      246 ./lc
      112 ./instdb
     14006 .
```

Related Commands

Command	Description
utility df, on page 15	Displays the amount of disk space available for a directory or file.

utility egrep

To search a file or the results of standard input using full regular expressions, use the **utility egrep** command in

EXEC mode or administration EXEC

mode.

utility egrep {**expr** *expression*|**script** *expression-file*} [*WORD*] [**count**] [**linenum**] [**matchfile**] [**matchline**] [**nocase**] [**nofile**] [**reverse**] [**file** *search-file*]

utility egrep *expression* [*WORD*] [**count**] [**linenum**] [**matchfile**] [**matchline**] [**nocase**] [**nofile**] [**reverse**] [**file** *search-file*]

utility egrep usage

Syntax Description

expr <i>expression</i>	(-e) A regular expression. This form is used when only one expression is specified on the command line. Any names specified after this option are treated as input files.
script <i>expression-file</i>	(-f) A file containing a set of regular expressions, each separated by a new line. The type of the expressions is determined by the -e and -f options. This form is used when more than one expression is specified. You can specify more than one -f option. The syntax of the <i>expression-file</i> argument is: [<i>device</i> :]/ <i>filename</i>
<i>WORD</i>	(Optional) UNIX command-line option string. The maximum number of characters is 20.
count	(Optional) (-c) Displays a count of selected lines.
linenum	(Optional) (-n) Before each output line, displays the line's line number.
matchfile	(Optional) (-l) ("e") Displays only the names of files containing the selected lines.
matchline	(Optional) (-x) Includes only input lines selected against an entire fixed string or regular expression.
nocase	(Optional) (-i) Ignores uppercase and lowercase distinctions during comparisons.
nofile	(Optional) (-h) Displays results without a filename prefix attached to the matched lines. This option applies only when more than one file is searched.
reverse	(Optional) (-v) Selects only those lines that don't match the specified patterns.
file <i>search-file</i>	(Optional) The file used for the search. Replace the <i>search-file</i> argument with the device and directory path of the file. The syntax for the <i>search-file</i> argument is: [<i>device</i> :]/ <i>filename</i> .
usage	(Optional) Displays the UNIX options supported by this command.

Command Default

If no files are specified, the keyboard input (standard input) is used.

If more than one input file is specified, then the filename is displayed before each line.

Command Modes EXEC, Admin EXEC

Command History	Release	Modification
	Release 3.4.0	This command was introduced.
	Release 3.6.0	The following devices were added: disk0a: , disk1a: , and compactflasha: .

Usage Guidelines To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

The grep utility searches files for character patterns using regular expressions and returns all lines that contain that pattern. The **utility egrep** command uses full regular expressions (expressions using the full set of alphanumeric and special characters) to match the patterns.

The results are displayed to the standard output (terminal screen).



Note The egrep utility options are entered using the displayed syntax, or with UNIX-equivalent syntax. The UNIX-equivalent syntax is displayed in parentheses () in the syntax description. For example, the **count** keyword can also be entered using the UNIX-equivalent (-c). To display the UNIX-equivalent syntax online, enter the **usage** keyword.

Task ID	Task ID	Operations
	universal	execute

In the following example, the **utility egrep** command is used to locate the regular expression “uptime”. The **linenum** keyword is also entered to display the line number before each line of output.

```
RP/0/RP0/CPU0:router# show version | utility egrep expr uptime linenum
7:router uptime is 5 days, 19 hours, 27 minutes
```

In the following example, the **utility egrep** command is used to locate a regular expression in a file. In this example, all lines with “adm” are displayed. The * character is used as a wildcard.

```
RP/0/RP0/CPU0:router# utility egrep expr Adm* nofile file disk0:/usr/passwd

adm:x:4:4:Admin:/var/adm:
lp:x:71:8:Line Printer Admin:/usr/spool/lp:
uucp:x:5:5:uucp Admin:/usr/lib/uucp:
nuucp:x:9:9:uucp Admin:/var/spool/uucppublic:/usr/lib/uucp/uucico
listen:x:37:4:Network Admin:/usr/net/nls:
ssadmin:x:901218:60001:Sun StorEdge(tm) Configuration Service Agent Admin:./bin/false
```

In the following example, the **nocase** keyword is used to ignore the character case:

```
RP/0/RP0/CPU0:router# utility egrep expr Adm* nocase file disk0:/usr/passwd

adm:x:4:4:Admin:/var/adm:
lp:x:71:8:Line Printer Admin:/usr/spool/lp:
uucp:x:5:5:uucp Admin:/usr/lib/uucp:
nuucp:x:9:9:uucp Admin:/var/spool/uucppublic:/usr/lib/uucp/uucico
listen:x:37:4:Network Admin:/usr/net/nls:
ssadmin:x:901218:60001:Sun StorEdge(tm) Configuration Service Agent Admin:./bin/false
```

In the following example, the **linenum** keyword is used to append the line number to the beginning of each output line:

```
RP/0/RP0/CPU0:router# utility egrep expr Adm* linenum file disk0:/usr/passwd

5:adm:x:4:4:Admin:/var/adm:
6:lp:x:71:8:Line Printer Admin:/usr/spool/lp:
7:uucp:x:5:5:uucp Admin:/usr/lib/uucp:
8:nuucp:x:9:9:uucp Admin:/var/spool/uucppublic:/usr/lib/uucp/uucico
9:listen:x:37:4:Network Admin:/usr/net/nls:
15:ssadmin:x:901218:60001:Sun StorEdge(tm) Configuration Service Agent Admin:./bin/false
```

Related Commands

Command	Description
utility fgrep, on page 25	Searches a file for a fixed character string.

utility fgrep

To search a file for a fixed character string, use the **utility fgrep** command in EXEC mode or administration EXEC

mode.

```
utility fgrep {expr expression|script expression-file} [WORD] [count] [linenum] [matchfile]
[matchline] [nocase] [nofile] [reverse] [file search-file]
```

```
utility fgrep expression [WORD] [count] [linenum] [matchfile] [matchline] [nocase] [nofile]
[reverse] [file search-file]
```

utility fgrep usage

Syntax	Description
expr <i>expression</i>	(-e) A regular expression, whose type is determined by the -e and -f options. This form is used when only one expression is specified on the command line. Any names specified after this option are treated as input files.
script <i>expression-file</i>	(-f) A file containing a set of regular expressions, each separated by a new line. The type of the expressions is determined by the -e and -f options. This form is used when more than one expression is specified. You can specify more than one -f option. The syntax of the <i>expression-file</i> argument is: <i>device</i> :[/ <i>directory-path</i>]/ <i>filename</i>
<i>WORD</i>	(Optional) UNIX command-line option string. The maximum number of characters is 20.
count	(Optional) (-c) Displays a count of selected lines.
linenum	(Optional) (-n) Before each output line, displays the line's line number.
matchfile	(Optional) (-l) ("el") Displays only the names of files containing the selected lines.
matchline	(Optional) (-x) Includes only input lines selected against an entire fixed string or regular expression.
nocase	(Optional) (-i) Ignores uppercase and lowercase distinctions during comparisons.
nofile	(Optional) (-h) Displays results without a filename prefix attached to the matched lines. This option applies only when more than one file is searched.
reverse	(Optional) (-v) Selects only those lines that don't match the specified patterns.
file <i>search-file</i>	(Optional) The file used for the search. Replace the <i>search-file</i> argument with the device and directory path of the file. The syntax for the <i>search-file</i> argument is: <i>device</i> :[/ <i>directory-path</i>]/ <i>filename</i>
usage	(Optional) Displays the UNIX options supported by this command.

Command Default The keyboard input (standard input) is used if no files are specified.

If more than one input file is specified, then the filename is displayed before each line.

Command Modes EXEC, Admin EXEC

Command History	Release	Modification
	Release 3.4.0	This command was introduced.
	Release 3.6.0	The following devices were added: disk0a: , disk1a: , and compactflasha: .

Usage Guidelines To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

The **utility fgrep** command searches files for a fixed character string (as opposed to `grep` and `egrep`, which search for a pattern that matches an expression).

The results are displayed to the standard output (terminal screen).



Note The `fgrep` utility options are entered using the displayed syntax, or with UNIX-equivalent syntax. The UNIX-equivalent syntax is displayed in parentheses () in the syntax description. For example, the **count** keyword can also be entered using the UNIX-equivalent (**-c**). To display the UNIX-equivalent syntax online, enter the **usage** keyword.

Task ID	Task ID	Operations
	universal	execute

The following example, the **utility fgrep** command is used with the **nocase** and **linenum** keywords:

```
RP/0/RP0/CPU0:router# show version | utility fgrep expr uptime nocase linenum
7:router uptime is 5 days, 20 hours, 10 minutes
```

Related Commands	Command	Description
	utility egrep, on page 22	Searches a file using full regular expressions.

utility find

To locate files within one or more directories, use the **utility find** command in

EXEC mode or administration EXEC

mode.

utility find {**path** *directory-path* {*LINE*|**name** *filename-pattern*|**user** *user-id*}|**usage**}

Syntax Description

path <i>directory-path</i>	Specifies the storage device and directory for the file search. The search is performed for the specified directory and all subdirectories in that directory tree. If a directory path is not specified, then the search is performed in the current directory (a path of . [dot] is assumed).
<i>LINE</i>	(Optional) UNIX command-line expressions provided as a string.
name <i>filename-pattern</i>	(Optional) Searches for the name of the file. The <i>filename-pattern</i> argument is a regular expression string.
user <i>user-id</i>	(Optional) Searches for files belonging to a specific user. The <i>user-id</i> argument is the username of the file owner.
usage	(Optional) Displays the UNIX options supported by this command.

Command Default

If a directory path is not specified, then the search is performed in the current directory.

If a **name** *filename-pattern* is not specified, then the search return all files in the specified directory.

If a user is not specified, then the search is performed for all users.

Command Modes

EXEC, Admin EXEC

Command History

Release	Modification
Release 3.4.0	This command was introduced.
Release 3.6.0	The following devices were added: disk0a: , disk1a: , and compactflasha: .

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the **utility find** command to locate files within one or more directories. You can perform the search for a specific directory (and its subdirectories). If a directory is not specified, then the search is performed for the current directory.

To search for a regular expression string, use the **name** *filename-pattern* keyword and argument. Replace the *filename-pattern* argument with the regular expression string. If this option is not used, then all files within the specified directory are displayed.

To search for files belonging to a specific user, use the *user-id* argument. If this option is not used, then files belonging to all users are displayed.

Task ID	Task ID	Operations
	universal	execute

In the following example, the **utility find** command is used to locate the file named “hfr-fwdg-3.8.0”. The path is the root directory of disk0:

```
RP/0/RP0/CPU0:router# utility find path disk0: name hfr-fwdg-3.4.0

disk0:/instdb/admin_pkgs_mdata/hfr-fwdg-3.8.0
disk0:/hfr-fwdg-3.8.0
```

In the following example, the **utility find** command is used to locate files matching a pattern. In this example, all files ending in “.txt” are displayed:

```
RP/0/RP0/CPU0:router# utility find path disk0:/usr name *.txt

disk0:/usr/test2.txt
```

In the following example, the UNIX equivalent option is used to locate files matching a pattern. In this example, all files ending in “.txt” are displayed:

```
RP/0/RP0/CPU0:router# utility find path disk0: -name *.txt

disk0:/hfr-base-3.8.0/etc/vim/doc/editing.txt
disk0:/hfr-base-3.8.0/etc/vim/doc/help.txt
disk0:/hfr-base-3.8.0/etc/vim/doc/intro.txt
disk0:/hfr-base-3.8.0/etc/vim/doc/uganda.txt
disk0:/usr/test2.txt
```

In the following example, the files belonging to a specific user are displayed:

```
RP/0/RP0/CPU0:router# utility find path disk0:/usr user 0

disk0:/usr
disk0:/usr/passwd
disk0:/usr/test2.txt
```

In the following example, the UNIX equivalent option is used to display files belonging to a specific user:

```
RP/0/RP0/CPU0:router# utility find path disk0:/usr -user 0

disk0:/usr
disk0:/usr/passwd
```

```
disk0:/usr/test2.txt
```

Related Commands

Command	Description
utility which, on page 45	Locates a program file.

utility head

To copy bytes or lines at the beginning of a file or from the standard input, use the **utility head** command in EXEC mode or administration EXEC mode.

utilityhead[{*WORD*||**bytes**] [**count** *number*][**file** *source*][**usage**}]

Syntax Description

WORD	(Optional) UNIX command-line option string. The maximum number of characters is 80.
bytes	(Optional) (-c) Copies the data in bytes from the beginning of each specified file. The default setting is to copy lines of data.
count number	(Optional) (-n) Specifies the number of lines (default) or bytes to be copied. The <i>number</i> argument is an unsigned decimal integer. By default, the utility head command copies the first ten units (lines or bytes) of the file. Use the count number option to change the default.
file source	(Optional) Specifies the storage device, directory, and filename for the files. If a file is not specified, the standard input is used.
usage	(Optional) Displays the UNIX options supported by this command.

Command Default

If the **utility head** command is entered without keywords or arguments, the first ten lines of the file or standard output are copied.

If no file is specified, then the standard input is used.

Command Modes

EXEC, Admin EXEC

Command History

Release	Modification
Release 3.4.0	This command was introduced.
Release 3.6.0	The following devices were added: disk0a: , disk1a: , and compactflasha: .

Usage Guidelines

The **utility head** command copies the beginning bytes (default) or lines of one or more files to the standard output (usually the user interface display). Use the **bytes** or **lines** keywords to copy the data based on lines or bytes. Use the **count number** option to specify the number of bytes or lines to copy. By default, the **utility head** command copies the first 10 lines of each file.

If more than one file is selected, an identifying header is added before the output for each file. If no file is specified, then the standard input (keyboard) is used.



Note Keywords are entered using the displayed syntax, or with UNIX-equivalent syntax. The UNIX-equivalent syntax is displayed in parentheses () in the syntax description. To display the UNIX-equivalent syntax online, enter the **usage** keyword.

In the following example, the **utility head** command is used to display the first 15 lines from the output of the **show version** command:

```
RP/0/RP0/CPU0:router# show version | utility head count 15

Cisco IOS XR Software, Version 3.4.0
Copyright (c) 2006 by cisco Systems, Inc.

ROM: System Bootstrap, Version 1.40(20060413:002654) [CRS-1 ROMMON],

router uptime is 5 days, 20 hours, 21 minutes
System image file is "disk0:hfr-os-mbi-3.4.0/mbihfr-rp.vm"

cisco CRS-8/S (7457) processor with 4194304K bytes of memory.
7457 processor at 1197Mhz, Revision 1.2

16 GigabitEthernet/IEEE 802.3 interface(s)
2 Ethernet/IEEE 802.3 interface(s)
20 Packet over SONET/SDH network interface(s)

RP/0/RP0/CPU0:router#
```

In the following example, the **utility head** command is entered with the **bytes** keyword. Only the first 15 bytes of output are displayed.

```
RP/0/RP0/CPU0:router# show version | utility head count 15 bytes

Cisco IOS XR S

RP/0/RP0/CPU0:router#
```

utility less

To display a file page-by-page, use the **utility less** command in EXEC mode or administration EXEC mode.

utility less {[**exitEOF**] [*WORD*]|**nocase**|**position** *line-number*|**startat** *string*} [**file** *source-file*]

Syntax Description		
exitEOF	(Optional) (-E)	Automatically exits the utility the first time an end-of-file is encountered.
<i>WORD</i>	(Optional)	UNIX command-line option string. The maximum number of characters is 80.
nocase	(Optional) (-i)	Ignores uppercase and lowercase distinctions during comparisons.
position <i>line-number</i>	(Optional) (-j)	Uses the line at <i>line-number</i> on the screen to position matched lines during a pattern search.
startat <i>string</i>	(Optional) (-p)	Starts at the first occurrence of the pattern specified by the <i>string</i> argument in the file.
file <i>source-file</i>	(Optional)	Specifies the storage device and directory path for the text file to be displayed. The default is standard input. The syntax for the <i>source-file</i> argument is: <i>device</i> :[/ <i>directory-path</i>]/ <i>filename</i>

Command Default If no text file is specified, standard input is assumed.

Command Modes EXEC
Administration EXEC

Command History	Release	Modification
	Release 3.5.0	This command was introduced.
	Release 3.6.0	The following devices were added: disk0a: , disk1a: , and compactflasha: .

Usage Guidelines To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Use the **utility less** command to display files page by page. You can specify regular expressions for pattern matching using the **startat** keyword. You can scroll up as well as down. When you enter the less mode, commands are similar to the “vi” editor.



Note Keywords are entered using the displayed syntax, or with UNIX-equivalent syntax. The UNIX-equivalent syntax is displayed in parentheses () in the syntax description. To display the UNIX-equivalent syntax online, enter the **usage** keyword.

Task ID

Task ID Operations

universal execute

The following example, the **utility less** command is used to display the file “config_store”. Only part of the file is shown here.

```
RP/0/RP0/CPU0:router# utility less file disk0:/usr/config_store
```

```
Last configuration change at Tue Feb 20 18:34:02 2007 by xxx
!
hostname H1
line console
  exec-timeout 600 0
  session-timeout 600
!
line default
  exec-timeout 600 0
  session-timeout 600
!
.
.
.
```

utility mv

To rename or move a file from one directory to another, use the **utility mv** command in EXEC mode or administration EXEC mode.

utility mv *[[{WORD|force|interactive}] source source-file target target-file|usage]*

Syntax Description		
WORD	(Optional) UNIX command-line option string. The maximum number of characters is 80.	
force	(Optional) (-f) Forces an overwrite if the target file already exists. There is no confirmation prompt.	
interactive	(Optional) (-i) Specifies to prompt for confirmation before renaming a file.	
source source-file	Specifies the storage device, directory, and filename for the file to be moved.	
target target-file	Specifies the new storage device, directory, and filename for the file.	
usage	(Optional) Displays the UNIX options supported by this command.	

Command Default No default behavior or values

Command Modes EXEC, Admin EXEC

Command History	Release	Modification
	Release 3.4.0	This command was introduced.
	Release 3.6.0	The following devices were added: disk0a: , disk1a: , and compactflasha: .

Usage Guidelines To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.



Note Keywords are entered using the displayed syntax, or with UNIX-equivalent syntax. The UNIX-equivalent syntax is displayed in parentheses () in the syntax description. To display the UNIX-equivalent syntax online, enter the **usage** keyword.

Task ID	Task ID	Operations
	universal	execute

In the following example, the **utility mv** command is used to move the file “aaa” from disk0a: to disk1a:

```
RP/0/RP0/CPU0:router# utility mv source disk0a:/aaa target disk1a:/aaa
```

Related Commands

Command	Description
utility cut, on page 6	Cuts characters or lines from the output displayed from standard input or a file.
utility sort, on page 36	Sorts, merges, or sequence-checks the output displayed from standard input or a file.
utility tail, on page 39	Copies the end portion of the output displayed from standard input or a file.

utility sort

To sort, merge, or sequence-check the lines in one or more files, or from the standard input, use the **utility sort** command in

EXEC mode or administration EXEC

mode.

utility sort {{{*WORD*}}}[**dict**] [**fieldSep** *character*] [**ignoreblank**] [**key** *key-definition*] [**lowercase**] [**merge**] [**numeric**] [**outfile** *filename*] [**printable**] [**reverse**] [**unique**]]] [**file** *filename*]|**usage**}

Syntax Description	
<i>WORD</i>	(Optional) UNIX command-line option string. The maximum number of characters is 80.
dict	(Optional) (-d) Sorts in dictionary order. Uses only alphanumeric and blank characters in the sort operation.
fieldSep <i>character</i>	(Optional) (-t) Specifies a character as the field separator.
ignoreblank	(Optional) (-b) Ignores leading blank characters in field comparisons.
key <i>key-definition</i>	(Optional) (-k) Defines a key to be the sort key. The <i>key-definition</i> argument field is defined using the following syntax: <i>field_start</i> [<i>type_string</i>] [, <i>field_end</i>] [<i>type_string</i>] <ul style="list-style-type: none"> • <i>field_start</i> and <i>field_end</i>—Specifies the beginning and end of the key field. • <i>type_string</i>—Specifies attributes specific to the key. <p>The <i>field_start</i> and <i>field_end</i> arguments are each specified by a pair of digits of the form <i>m.n</i>, where the <i>m</i> refers to the field starting after the <i>m</i>th field separator in a line. For <i>field_start</i>, the <i>.n</i> refers to the <i>n</i>th character of the specified field, and is taken as zero if not specified. For <i>field_end</i>, the <i>.n</i> refers to the <i>n</i>th character after the last character of the specified field, and is taken as zero if not specified.</p> <p>The <i>type_string</i> argument may be formed from the characters <i>bdfinr</i>, which apply their defined attributes to the determination of the key.</p> <p>Note When ordering options appear independent of key field specifications, the requested field ordering rules are applied globally to all sort keys. When attached to a specific key, the specified ordering options override all global ordering options for that key.</p>
lowercase	(Optional) (-f) Folds uppercase letters into lowercase (ignores case and treats upper case characters the same as lowercase characters).
merge	(Optional) (-m) Merges sorted files. Assumes that the files are already sorted and so does not sort the files.
numeric	(Optional) (-n) Interprets the field as numeric and sorts in numeric order. Includes the sign and optional thousands separator. This keyword also ignores leading blank characters in field comparisons (implies the ignoreblank keyword).

outfile <i>filename</i>	(Optional) (-o) Writes the results to a file. The <i>filename</i> argument is the destination disk, directory, and filename. The <i>filename</i> argument can be the same as the source file.
printable	(Optional) (-i) Ignores all nonprintable characters.
reverse	(Optional) (-r) Reverses the sort order. The sort is ascending by default.
unique	(Optional) (-u) Suppresses all but one line in each set of lines having equal keys.
file <i>filename</i>	(Optional) Specifies a file to be sorted.
usage	(Optional) Displays the UNIX options supported by this command.

Command Default

If no file is specified, then the standard input (keyboard) is used.

If an **outfile** *filename* keyword and argument is not specified, then the standard output (display) is used.

The file is sorted in ascending order.

Command Modes

EXEC, Admin EXEC

Command History

Release	Modification
Release 3.4.0	This command was introduced.
Release 3.6.0	The following devices were added: disk0a: , disk1a: , and compactflasha: .

Usage Guidelines**Note**

Keywords are entered using the displayed syntax, or with UNIX-equivalent syntax. The UNIX-equivalent syntax is displayed in parentheses () in the syntax description. To display the UNIX-equivalent syntax online, enter the **usage** keyword.

In the following example, the **utility sort** command is used to sort the contents of the file “words.txt”:

```
RP/0/RP0/CPU0:router# utility sort file disk0:/usr/words.txt
```

```
The
few
inquires
A
Code.
Date
Done
This
best-selling
bestseller
book
come
concerning
fiction,
```

```
have
its
list
muscle
of
onto
our
the
way
way
work
```

In the following example, only the unique characters in the file “words.txt” are displayed:

```
RP/0/RP0/CPU0:router# utility sort unique file disk0:/usr/words.txt
```

```
Code.
Date
best-selling
book
concerning
have
list
of
our
way
work
```

utility tail

To copy the end portion of a file or the standard input, use the **utility tail** command in EXEC mode or administration EXEC mode.

utility tail {{{*WORD*}}}[**bytes**] [**continuous**] [**count** *number*]} [**file** *input-file*][**usage**]

Syntax Description

WORD	(Optional) UNIX command-line option string. The maximum number of characters is 80.
bytes	(Optional) (-c) Copies the end of the file measured in bytes. The default is lines.
continuous	(Optional) (-f) Continues to copy data from the end of the file after the last line is reached. The operation pauses for 1 second, and then resumes in a continuous loop. The input file must be a regular file, not a terminal or a FIFO special file (a named pipe).
count number	(Optional) (-n) Copies the number of lines (default) or bytes specified with the <i>number</i> argument. The range is 0 to 4294967295. By default, the last 10 lines are copied. The <i>number</i> argument is a decimal integer that defines the location in the file to begin copying: <ul style="list-style-type: none"> • Include the plus (+) character to copy from the beginning of the file. • Include the minus (-) character to copy from the end of the file. • Do not include a character to copy from the end of the file. <p>Note Select the bytes keyword to copy the information measured in a count of bytes.</p>
file input-file	(Optional) Directory path and filename for the input file. If no file is specified, then the standard input is used. The syntax for the <i>input-file</i> argument is: <i>device</i> :[/ <i>directory-path</i>]/ <i>filename</i> The <i>device</i> argument, followed by a colon, indicates the name of the device where the file is located. Use the online help (?) function to display the available storage devices and network protocols.
usage	(Optional) Displays the UNIX options supported by this command.

Command Default

If the **utility tail** command is entered without keywords or arguments, the last 10 lines of the standard input are copied.

Command Modes

EXEC, Admin EXEC

Command History

Release	Modification
Release 3.4.0	This command was introduced.
Release 3.6.0	The following devices were added: disk0a: , disk1a: , and compactflasha: .

Usage Guidelines

Use the **utility tail** command to copy data from the end of a file. By default, the last 10 lines are copied. Use the **bytes** keyword to copy the data measured in bytes. Use the **count** *number* option to define the number of lines or bytes to copy. Use the **file** *filename* option to specify an input file.

**Note**

Keywords are entered using the displayed syntax, or with UNIX-equivalent syntax. The UNIX-equivalent syntax is displayed in parentheses () in the syntax description. To display the UNIX-equivalent syntax online, enter the **usage** keyword.

In the following example, the **utility tail** command is used to display the last 10 lines of the output from the **show version** command:

```
RP/0/RP0/CPU0:router# show version | utility tail count 10

  By iox25.cisco.com in /auto/ioxws46/nightly/ci-34_hfr_06.09.13 for c2.95.3-8

hfr-base, V 3.4.0[4n_06.09.13], Cisco Systems, at disk0:hfr-base-3.4.0
  Built on Wed Sep 13 22:04:26 UTC 2006
  By iox25.cisco.com in /auto/ioxws46/nightly/ci-34_hfr_06.09.13 for c2.95.3-8

hfr-os-mpi, V 3.4.0[4n_06.09.13], Cisco Systems, at disk0:hfr-os-mpi-3.4.0
  Built on Wed Sep 13 21:47:10 UTC 2006
  By iox25.cisco.com in /auto/ioxws46/nightly/ci-34_hfr_06.09.13 for c2.95.3-8

RP/0/RP0/CPU0:router#
```

In the following example, the **utility tail** command is used with the **bytes** keyword to display the last 10 bytes in the output:

```
RP/0/RP0/CPU0:router# show version | utility tail count 10 bytes

.95.3-p8

RP/0/RP0/CPU0:router#
```


utility uniq

To display or remove repeated lines in a file, use the **utility uniq** command in EXEC mode or administration EXEC mode.

utility uniq [{{[[*WORD*]]*[afterChars number] [afterField number] [count] [nonrepeating|repeating]*}}] [*infile input-file outfile output-file*][*usage*]

Syntax Description	<i>WORD</i>	(Optional) UNIX command-line option string. The maximum number of characters is 80.
	afterChars <i>number</i>	(Optional) (-s) Ignores the first characters on each line of the input file. Use the <i>number</i> argument to specify the number of characters. The range is 0 to 4294967295.
	afterField <i>number</i>	(Optional) (-f) Ignores the first fields on each line of the input file. Use the <i>number</i> argument to specify the number of fields. The range is 0 to 4294967295.
	count	(Optional) (-c) Displays the number of times the line appeared in the input file at the beginning of each output line.
	nonrepeating	(Optional) (-u) Displays only the nonrepeating lines from the input file (repeating lines are not displayed).
	repeating	(Optional) (-d) Displays only the repeating lines from the input file (nonrepeating lines are not displayed).
	infile <i>input-file</i>	(Optional) Specifies an input file for processing. The <i>input-file</i> argument specifies the device, directory, and filename of the input file. If no input file is specified, then the standard input (keyboard) is used. The syntax of the <i>input-file</i> argument is: <i>device</i> :[/ <i>directory-path</i>]/ <i>filename</i> . The <i>device</i> argument, followed by a colon, indicates the name of the device where the file is located. Use the online help (?) function to display the available storage devices and network protocols.
	outfile <i>output-file</i>	(Optional) Specifies an output file. The <i>output-file</i> argument specifies the device, directory, and filename of the output file. If no file is specified, then the standard output (display) is used. The syntax of the <i>output-file</i> argument is: <i>device</i> :[/ <i>directory-path</i>]/ <i>filename</i> . The <i>device</i> argument, followed by a colon, indicates the name of the device where the file is located. Use the online help (?) function to display the available storage devices and network protocols.
	usage	(Optional) Displays the UNIX options supported by this command.

Command Default

If no input file is specified, then the standard input is used.

If no output file is specified, then the standard output is used.

Command Modes EXEC, Admin EXEC

Command History	Release	Modification
	Release 3.4.0	This command was introduced.
	Release 3.6.0	The following devices were added: disk0a: , disk1a: , and compactflasha: .

Usage Guidelines Use the **utility uniq** command to display only lines that are repeated in a file, or to display only lines that appear once. This utility compares only adjacent lines, so the file or standard input must be sorted.



Note Keywords are entered using the displayed syntax, or with UNIX-equivalent syntax. The UNIX-equivalent syntax is displayed in parentheses () in the syntax description. To display the UNIX-equivalent syntax online, enter the **usage** keyword.

In the following example, the **utility uniq** command is used to display the repeating lines in the output of the **show environment** command:

```
RP/0/RP0/CPU0:router# show environment | utility uniq repeating
host      5V          4500,5500      4250,5750      4000,6000
fabricq 1.25V      1125,1375      1063,1438      1000,1500
fabricq 1.25V      1125,1375      1063,1438      1000,1500
ingress 1.25V      1125,1375      1063,1438      1000,1500
spa5     1.5V          1500,0         1575,1425      0,0
host      5V          4500,5500      4250,5750      4000,6000
fabricq 1.25V      1125,1375      1063,1438      1000,1500
fabricq 1.25V      1125,1375      1063,1438      1000,1500
ingress 1.25V      1125,1375      1063,1438      1000,1500
spa5     1.5V          1500,0         1575,1425      0,0
```

utility wc

To count words, lines, or bytes in a file, use the **utility wc** command in EXEC mode or administration EXEC mode.

utility wc [{{[[*WORD*]]|**bytes** |**lines** |**words**}}] [**file** *input-file*]**usage**}]

Syntax Description

WORD	(Optional) UNIX command-line option string. The maximum number of characters is 80.
bytes	(Optional) (-c) Displays the number of bytes in each input file.
lines	(Optional) (-l) (-œel-?) Displays the number of lines in each input file.
words	(Optional) (-w) Displays the number of words in each input file.
file <i>input-file</i>	(Optional) Specifies the input file. The <i>input-file</i> argument specifies the device, directory, and filename of the input file. If no input file is specified, then the standard input (keyboard) is used. The syntax of the <i>input-file</i> argument is: <i>device</i> :[/ <i>directory-path</i>] / <i>filename</i> . The <i>device</i> argument, followed by a colon, indicates the name of the device where the file is located. Use the online help (?) function to display the available storage devices and network protocols.
usage	(Optional) Displays the UNIX options supported by this command.

Command Default

Output is displayed in the order bytes, words, and lines, even if the options are entered in a different order.

Command Modes

EXEC, Administration EXEC

Command History

Release	Modification
Release 3.4.0	This command was introduced.
Release 3.6.0	The following devices were added: disk0a: , disk1a: , and compactflasha: .

Usage Guidelines

To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.

Output is displayed in the following order:

- When keywords are entered, the output appears in the order bytes, words, and lines.
- When no keyword is entered, the output appears in the order lines, words, and bytes.
- When any UNIX equivalent options are entered, the output appears in the order specified by the options. For example, if the command **utility wc -w -l -c** is entered, the output appears in the order words, lines, and bytes.



Note Keywords are entered using the displayed syntax, or with UNIX-equivalent syntax. The UNIX-equivalent syntax is displayed in parentheses () in the syntax description. To display the UNIX-equivalent syntax online, enter the **usage** keyword.

Task ID

Task ID Operations

universal execute

In the following example, the **utility wc** command is issued to display the number of lines, words, and bytes in the output of the **show version** command:

```
RP/0/RP0/CPU0:router# show version | utility wc
                221      1160      10820
```

The output displays the following:

- 221 lines
- 1160 words
- 10820 bytes

In the following example, the **utility wc** command is entered with the **words** keyword to display the number of words in the output of the **show version** command:

```
RP/0/RP0/CPU0:router# show version | utility wc words
                1160
```

utility which

To locate a program file, use the **utility which** command in EXEC mode or administration EXEC mode.

utility which {{{*WORD*}}}[**all**] [**fullname**] [**long** [*link*]]} **program** *program-name*{**usage**}

Syntax Description		
	<i>WORD</i>	(Optional) UNIX command-line option string. The maximum number of characters is 80.
	all	(Optional) (-a) Displays all occurrences of the program specified by the program <i>pathname</i> keyword and argument.
	fullname	(Optional) (-f) Displays the full pathname of the program file.
	long [<i>link</i>]	(Optional) (-l) (“el”) Displays the long format for each program found, and also displays link information if the file is a symlink.
	program <i>program-name</i>	Specifies the name of the program file.
	usage	(Optional) Displays the UNIX options supported by this command.

Command Default None

Command Modes EXEC, Admin EXEC

Command History	Release	Modification
	Release 3.4.0	This command was introduced.

Usage Guidelines To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.



Note Keywords are entered using the displayed syntax, or with UNIX-equivalent syntax. The UNIX-equivalent syntax is displayed in parentheses () in the syntax description. To display the UNIX-equivalent syntax online, enter the **usage** keyword.

Task ID	Task ID	Operations
	universal	execute

In the following example, the **utility which** command is entered without keywords or arguments to display the location of the perl program:

```
RP/0/RP0/CPU0:router# utility which program perl
/pkg/bin/perl
```

In the following example, the **utility which** command is entered with the **fullname** keyword to display the full directory path of the perl program:

```
RP/0/RP0/CPU0:router# utility which fullname program perl
/disk0:/hfr-base-3.8.0.1I/sbin/perl
```

In the following example, the **utility which** command is entered with the **long** keyword to display additional details about the perl program file:

```
RP/0/RP0/CPU0:router# utility which long program perl
-rwxrwxrwx 1 0 0 19245 Jul 28 14:31 /pkg/bin/perl
```

Related Commands

Command	Description
utility find, on page 27	Locates a file.

utility xargs

To run a program from one or more argument lists, use the **utility xargs** command in EXEC mode or administration EXEC mode.

utility xargs [{*WORD*|**trace**}] [**program** [*program-name*] [*initial-arguments*]][**usage**]

Syntax Description		
	<i>WORD</i>	(Optional) UNIX command-line option string. The maximum number of characters is 80.
	trace	(Optional) (-t) Prints each program on standard error before executing.
	program	(Optional) Specifies the name of the program and initial arguments. If a program name is not specified, then the echo utility is used.
	<i>program-name</i>	(Optional) Specifies the name of the program. If a program name is not specified, then the echo utility is used.
	<i>initial-arguments</i>	(Optional) Specifies the initial arguments.
	usage	(Optional) Displays the UNIX options supported by this command.

Command Default If no program is specified, then the echo utility is used (the input lines are displayed).

Command Modes EXEC, Administration EXEC

Command History	Release	Modification
	Release 3.4.0	This command was introduced.

Usage Guidelines To use this command, you must be in a user group associated with a task group that includes appropriate task IDs. If the user group assignment is preventing you from using a command, contact your AAA administrator for assistance.



Note Keywords are entered using the displayed syntax, or with UNIX-equivalent syntax. The UNIX-equivalent syntax is displayed in parentheses () in the syntax description. To display the UNIX-equivalent syntax online, enter the **usage** keyword.

Task ID	Task ID	Operations
	universal	execute

In the following example, the **utility xargs** command is used to display the egress lines:

```
RP/0/RP0/CPU0:router# more disk0:/usr/files | utility xargs program grep EGRESS
```

```
disk0:/usr/atm.cfg:service-policy output EGRESS-GigabitEthernet0-0-0-0-101
disk0:/usr/atm.cfg:service-policy output EGRESS-GigabitEthernet0-0-0-0-102
disk0:/usr/atm.cfg:service-policy output EGRESS-GigabitEthernet0-0-0-0-103
disk0:/usr/atm.cfg:service-policy output EGRESS-GigabitEthernet0-0-0-0-104
disk0:/usr/atm.cfg:service-policy output EGRESS-GigabitEthernet0-0-0-0-105
disk0:/usr/atm.cfg:service-policy output EGRESS-GigabitEthernet0-0-0-0-106
disk0:/usr/atm.cfg:service-policy output EGRESS-GigabitEthernet0-0-0-0-107
disk0:/usr/atm.cfg:service-policy output EGRESS-GigabitEthernet0-0-0-0-108
disk0:/usr/atm.cfg:service-policy output EGRESS-common
disk0:/usr/atm.cfg:service-policy output EGRESS-common
disk0:/usr/atm.cfg:service-policy output EGRESS-common
disk0:/usr/atm.cfg:service-policy output EGRESS-common
disk0:/usr/atm.cfg:service-policy output EGRESS-common
.....
```