

NAME

virt-df – Display free space on virtual filesystems

SYNOPSIS

All guests:

```
virt-df [--options]
```

Single guest:

```
virt-df [--options] -d domname
```

```
virt-df [--options] -a disk.img [-a disk.img ...]
```

Old style:

```
virt-df [--options] domname
```

```
virt-df [--options] disk.img [disk.img ...]
```

DESCRIPTION

virt-df is a command line tool to display free space on virtual machine filesystems. Unlike other tools, it doesn't just display the size of disk allocated to a virtual machine, but can look inside disk images to see how much space is really being used.

If used without any *-a* or *-d* arguments, virt-df checks with libvirt to get a list of all active and inactive guests, and performs a df-type operation on each one in turn, printing out the results.

If any *-a* or *-d* arguments are specified, virt-df performs a df-type operation on either the single named libvirt domain, or on the disk image(s) listed on the command line (which must all belong to a single VM). **In this mode (with arguments), virt-df will only work for a single guest.** If you want to run on multiple guests, then you have to invoke virt-df multiple times.

Use the *--csv* option to get a format which can be easily parsed by other programs. Other options are similar to the standard **df**(1) command.

EXAMPLES

Show disk usage for a single libvirt guest called F14x64. Make the output human-readable:

```
# virt-df -d F14x64 -h
Filesystem                                Size      Used    Available    Use%
F14x64:/dev/sda1                          484M        66M      393M        14%
F14x64:/dev/vg_f13x64/lv_root             7.4G       3.4G      4.0G        46%
```

Show disk usage for a disk image file called *test.img*:

```
$ virt-df -a test1.img
Filesystem                                1K-blocks    Used    Available    Use%
test1.img:/dev/sda1                      99099       1551     92432        2%
```

If a single guest has multiple disks, use the *-a* option repeatedly. A plus sign (+) is displayed for each additional disk. **Note: Do not do this with unrelated guest disks.**

```
$ virt-df -a Win7x32TwoDisks-a -a Win7x32TwoDisks-b
Filesystem                                1K-blocks    Used    Available    Use%
Win7x32TwoDisks-a+:/dev/sda1             102396      24712     77684        25%
Win7x32TwoDisks-a+:/dev/sda2            12478460   7403416    5075044       60%
Win7x32TwoDisks-a+:/dev/sdb1             521212     55728     465484       11%
```

OPTIONS

--help

Display brief help.

-a FILE

--add FILE

Add FILE which should be a disk image from a virtual machine. If the virtual machine has multiple block devices, you must supply all of them with separate *-a* options.

The format of the disk image is auto-detected. To override this and force a particular format use the *--format=..* option.

-a URI

--add URI

Add a remote disk. See “ADDING REMOTE STORAGE” in **guestfish** (1).

--blocksize=512

--blocksize=4096

--blocksize

This parameter sets the sector size of the disk image. It affects all explicitly added subsequent disks after this parameter. Using *--blocksize* with no argument switches the disk sector size to the default value which is usually 512 bytes. See also “guestfs_add_drive_opts” in **guestfs** (3).

-c URI

--connect URI

If using libvirt, connect to the given URI. If omitted, then we connect to the default libvirt hypervisor.

If you specify guest block devices directly (*-a*), then libvirt is not used at all.

--csv

Write out the results in CSV format (comma-separated values). This format can be imported easily into databases and spreadsheets, but read “NOTE ABOUT CSV FORMAT” below.

-d guest

--domain guest

Add all the disks from the named libvirt guest. Domain UUIDs can be used instead of names.

--format=raw|qcow2|..

--format

The default for the *-a* option is to auto-detect the format of the disk image. Using this forces the disk format for *-a* options which follow on the command line. Using *--format* with no argument switches back to auto-detection for subsequent *-a* options.

For example:

```
virt-df --format=raw -a disk.img
```

forces raw format (no auto-detection) for *disk.img*.

```
virt-df --format=raw -a disk.img --format -a another.img
```

forces raw format (no auto-detection) for *disk.img* and reverts to auto-detection for *another.img*.

If you have untrusted raw-format guest disk images, you should use this option to specify the disk format. This avoids a possible security problem with malicious guests (CVE-2010-3851).

-h

--human-readable

Print sizes in human-readable format.

You are not allowed to use *-h* and *--csv* at the same time.

-i

--inodes

Print inodes instead of blocks.

--one-per-guest

Since libguestfs 1.22, this is the default. This option does nothing and is left here for backwards compatibility with older scripts.

-P nr_threads

Since libguestfs 1.22, virt-df is multithreaded and examines guests in parallel. By default the number of threads to use is chosen based on the amount of free memory available at the time that virt-df is started. You can force virt-df to use at most `nr_threads` by using the `-P` option.

Note that `-P 0` means to autodetect, and `-P 1` means to use a single thread.

--uuid

Print UUIDs instead of names. This is useful for following a guest even when the guest is migrated or renamed, or when two guests happen to have the same name.

Note that only domains that we fetch from libvirt come with UUIDs. For disk images, we still print the disk image name even when this option is specified.

-v**--verbose**

Enable verbose messages for debugging.

-V**--version**

Display version number and exit.

-x Enable tracing of libguestfs API calls.

STATVFS NUMBERS

`virt-df` (and `df(1)`) get information by issuing a `statvfs(3)` system call. You can get the same information directly, either from the host (using libguestfs) or inside the guest:

From the host

Run this command:

```
guestfish --ro -d GuestName -i statvfs /
```

(change `/` to see stats for other filesystems).

From inside the guest

Run this command:

```
python -c 'import os; s = os.statvfs ("/"); print s'
```

(change `/` to see stats for other filesystems).

NOTE ABOUT CSV FORMAT

Comma-separated values (CSV) is a deceptive format. It *seems* like it should be easy to parse, but it is definitely not easy to parse.

Myth: Just split fields at commas. Reality: This does *not* work reliably. This example has two columns:

```
"foo,bar",baz
```

Myth: Read the file one line at a time. Reality: This does *not* work reliably. This example has one row:

```
"foo
bar",baz
```

For shell scripts, use `csvtool` (<https://github.com/Chris00/ocaml-csv> also packaged in major Linux distributions).

For other languages, use a CSV processing library (eg. `Text::CSV` for Perl or Python's built-in `csv` library).

Most spreadsheets and databases can import CSV directly.

EXIT STATUS

This program returns 0 if successful, or non-zero if there was an error.

SEE ALSO

df(1), **guestfs**(3), **guestfish**(1), **virt-filesystems**(1), <http://libguestfs.org/>.

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BUGS

To get a list of bugs against libguestfs, use this link:
<https://bugzilla.redhat.com/buglist.cgi?component=libguestfs&product=Virtualization+Tools>

To report a new bug against libguestfs, use this link:
https://bugzilla.redhat.com/enter_bug.cgi?component=libguestfs&product=Virtualization+Tools

When reporting a bug, please supply:

- The version of libguestfs.
- Where you got libguestfs (eg. which Linux distro, compiled from source, etc)
- Describe the bug accurately and give a way to reproduce it.
- Run **libguestfs-test-tool**(1) and paste the **complete, unedited** output into the bug report.