

**NAME**

guestfs-release-notes – libguestfs Release Notes

**RELEASE NOTES FOR LIBGUESTFS 1.20**

These release notes only cover the differences from the previous stable/dev branch split (1.18.0). For detailed changelogs, please see the git repository, or the ChangeLog file distributed in the tarball.

**New features**

*libvirt and sVirt (SELinux confinement)*

You can *optionally* use libvirt to launch and manage the backend appliance by:

- setting `LIBGUESTFS_ATTACH_METHOD=libvirt[:URI]`
- using `./configure --with-default-attach-method=libvirt[:URI]`
- or calling the API method `guestfs_set_attach_method`

SVirt (SELinux confinement) is used to secure the libguestfs appliance, if the libvirt backend is selected.

*virtio-scsi, larger number of drives, hotplugging*

Virtio-scsi is now used by default, if it is available. This greatly increases the number of drives that can be added to a single libguestfs handle (up to 255).

You can now hotplug drives (add and remove drives after launch).

Libguestfs can now handle > 25 disks, in all APIs, tools and tests.

You can label drives when adding them, then refer to them by label (`/dev/disk/guestfs/LABEL`) instead of having to use device names (`/dev/sda`).

*new library features*

POSIX Access Control Lists (ACLs) and Linux filesystem capabilities can now be read and written through the API.

Windows Dynamic Disks are now supported. The metadata can only be read (volumes cannot be modified or created). However the data/filesystems in the volumes themselves can be mounted, read and written (Matthew Booth).

Hivex (Windows Registry editing) is now directly supported through the API, making reading or editing the Windows Registry much more efficient.

Several libguestfs APIs were reimplemented so they no longer have any limits on output. The reimplemented APIs are: `guestfs_cat`, `guestfs_find`, `guestfs_read_file`, `guestfs_read_lines`, `guestfs_write`, `guestfs_write_append`, `guestfs_lstatlist`, `guestfs_lxattrlist`, `guestfs_readlinklist`, `guestfs_ls`.

*virt tools*

`guestfish touch 'win:c:\new_file'` now works as expected.

`guestfish` has a new `--network` option, which enables the user network in libguestfs.

You can set `GUESTFISH_PS1` to use fancy prompts in `guestfish`.

`rsync`, `ssh`, `less` and `lrzip` commands are now available in `virt-rescue`. In addition, `rsync` can be used through the API for doing incremental copies.

`virt-sparsify` uses `qcow2 v3` for increased efficiency.

`virt-sysprep` enhancements:

- generate new UUIDs for PVs and VGs
- remove the local machine ID (Wanlong Gao)
- remove ABRT data (Wanlong Gao)

- remove puppet keys and log files (Wanlong Gao)
- remove process accounting files (Wanlong Gao)
- new `--firstboot` parameter allowing firstboot scripts for customizing guests
- remove HOSTNAME field from `ifcfg-eth*` files (Wanlong Gao)
- miscellaneous improvements for SuSE (Olaf Hering)
- remove man pages cache (Wanlong Gao)
- remove crash data generated by kexec-tools (Wanlong Gao)

`virt-make-fs` can now create virtual floppy disks (VFDs).

`guestmount` has a `--pid-file` option, which can be used to avoid a race condition between unmounting the filesystem and using the underlying disk image.

#### *language bindings*

Full-featured Lua bindings have been added in this release (thanks to Jerome Vuarand for many suggestions).

In Ruby, optional arguments hash is optional.

In Python, optional arguments now don't use special "sentinel" values, so any integer can be passed as an optional argument.

Erlang bindings now come with examples and tests.

Erlang bindings now handle 64 bit integer parameters correctly.

The automated 'bindtests' now test for 64 bit cleanliness in parameter passing. Several bugs in the bindings were found and fixed as a result.

Better handling of blocking and non-blocking functions should make libguestfs calls more efficient.

#### *inspection*

Windows guests with unlimited-sized Registries are now supported. By adding the hivex API to the libguestfs API, it is much more efficient and easier to inspect and modify the Windows Registry in guests.

Better support for SuSE guests (Olaf Hering).

Return the architecture of installed applications (John Eckersberg).

Windows 8 is now supported.

Fedora 18 is now supported.

Inspection of ISOs/CDs/DVDs can now use the libosinfo database.

#### *ports*

Libguestfs without the appliance can be compiled on Mac OS X (Masami HIRATA).

RHEL 5 is now explicitly supported through the 'oldlinux' branch in upstream git.

PowerPC 64 bit is now supported. Also libguestfs has been examined for endianness bugs and these have been fixed.

#### *daemon*

A man page for the daemon (**guestfsd** (8)) is included.

### **Security**

#### *guestfish history file*

The `$HOME/.guestfish` history file is now created with 0600 permissions (instead of 0644 before) so it is no longer world readable.

*CVE-2012-2690*

Old versions of both `virt-edit` and the `guestfish edit` command created a new file containing the changes but did not set the permissions, etc of the new file to match the old one. The result of this was that if you edited a security sensitive file such as `/etc/shadow` then it would be left world-readable after the edit.

This issue was assigned CVE-2012-2690, and is fixed in `libguestfs`  $\geq 1.16$ .

For further information, see [https://bugzilla.redhat.com/show\\_bug.cgi?id=788642](https://bugzilla.redhat.com/show_bug.cgi?id=788642)

### New APIs

- `acl-delete-def-file`
- `acl-get-file`
- `acl-set-file`
- `canonical-device-name`
- `cap-get-file`
- `cap-set-file`
- `create-flags`
- `device-index`
- `disk-has-backing-file`
- `disk-format`
- `disk-virtual-size`
- `filesystem-available`
- `fill-dir`
- `fstrim`
- `get-cachedir`
- `get-libvirt-requested-credentials`
- `get-libvirt-requested-credential-prompt`
- `get-libvirt-requested-credential-challenge`
- `get-libvirt-requested-credential-defresult`
- `get-tmpdir`
- `hivex-close`
- `hivex-commit`
- `hivex-node-add-child`
- `hivex-node-children`
- `hivex-node-delete-child`
- `hivex-node-get-child`
- `hivex-node-get-value`
- `hivex-node-name`
- `hivex-node-parent`
- `hivex-node-set-value`
- `hivex-node-values`
- `hivex-open`
- `hivex-root`
- `hivex-value-key`
- `hivex-value-type`
- `hivex-value-utf8`
- `hivex-value-value`
- `inspect-list-applications2` (John Eckersberg)
- `list-ldm-volumes`
- `list-ldm-partitions`
- `ldmtool-create-all`
- `ldmtool-diskgroup-disks`
- `ldmtool-diskgroup-name`
- `ldmtool-diskgroup-volumes`
- `ldmtool-remove-all`
- `ldmtool-scan`
- `ldmtool-scan-devices`

```

ldmtool-volume-hint
ldmtool-volume-partitions
ldmtool-volume-type
ls0
max-disks
mke2fs (Wanlong Gao)
mklost-and-found
mkswap [added label and uuid optional arguments]
mktemp (Wanlong Gao)
nr-devices
parse-environment
parse-environment-list
rm-f
rsync
rsync-in
rsync-out
set-cachedir
set-libvirt-supported-credentials
set-libvirt-requested-credential
set-tmpdir
shutdown [backported to 1.16 and 1.18]
tar-in [added compress flag]
tar-out [added compress, numericowner, excludes flags]
umount [added force and lazy optional arguments]
utsname
xfs-admin (Wanlong Gao)
xfs-growfs (Wanlong Gao)
xfs-info (Wanlong Gao)
xfs-repair (Wanlong Gao)

```

In the C API only:

```

guestfs_push_error_handler
guestfs_pop_error_handler

```

### Internals

qemu  $\geq 1.1$  is required ( $\geq 1.2$  preferred).

febootstrap  $\geq 3.20$  is required.

libvirt is optional, but if you want to use the new libvirt backend for launching the appliance then libvirt  $\geq 0.10.2$  would be required.

Coverity has been run over the complete codebase, and many issues fixed (thanks Ondrej Vasik, Kamil Dudka).

Functions which previously had no optargs can now be converted to ones with optargs, making extending the API much more flexible. Source and binary backwards compatibility is preserved for users of the API.

The way that libguestfs APIs and structures are represented in the generator has changed to use an OCaml struct instead of a tuple. This makes generator descriptions more flexible and easier to understand. For details see commits 39d1a7db and eb185eef.

Separation of the library code into more files:

- Launch backends are now located in separate files eg. *src/launch-appliance.c*, *src/launch-libvirt.c*.
- Generated action code is now split over several *src/action\*.c* files, for faster compilation.
- The huge *src/guestfs.c* file is now split into smaller logical units.

POD (documentation) is now generated using a rewritten Perl program instead of pod2\* + shell scripts.

Man pages now contain stable dates (Hilko Bengen).

Skipped tests now exit with code 77, so they appear as SKIP: in make check output.

The parallel mount-local test has been rewritten in C (RHBZ#838081).

Ruby 1.8.5 is now supported (though Ruby ≥ 1.9 is preferred).

Perl bindings can be disabled via ./configure --disable-perl (Wulf C. Krueger). Note that Perl is still required in order to build libguestfs.

Java bindings are now enabled/disabled using ./configure --with-java or ./configure --without-java (Wulf C. Krueger).

New configure options ./configure --enable-code-profiling and ./configure --enable-code-coverage.

Multiple fixes to use of 64 bit integers in language bindings.

The appliance backend now uses sgabios instead of vgabios (Dan Berrange).

The ./run script now sets enough environment variables that you can run OCaml, Python, Ruby, Java, GJS, Erlang, Lua programs.

./run --testflag for running tests with minimal output. It also prints the time taken to run each test.

The ./run script now builds up paths cumulatively, meaning that you can use ./run twice, or use the libguestfs and libvirt ./run scripts together.

You can extract a list of external commands required by the daemon, making building the appliance on certain distros easier (Olaf Hering).

The virt-rescue command is now tested during make check.

The generator now removes unused generated files. This helps when going back and forth with git rebase, git bisect, etc.

Tests now run in a separate toplevel tmp/ directory in the source. This allows the directory to be labelled for SELinux (sVirt), and also makes it easier to clean up.

make syntax-checknow works to a greater extent, and many problems in the main code that were found by syntax-check have been fixed (thanks Jim Meyering).

Emacs mode (\*- foo \*-) has been added to generated files.

Progress bar output is now sent to /dev/tty so it doesn't end up in the regular output of the program. virt-resize and virt-sparsify now suppress progress bars if stdout is not a tty.

There is now a ./configure --without-libvirt option. This is useful for testing that the code still compiles without libvirt.

There is now an internal mini-library for running commands. This allows us to redirect errors from external commands into events.

Code for handling temporary directories and the appliance cache was completely overhauled.

Code for temporarily ignoring/disabling errors now looks like this:

```
guestfs_push_error_handler (g, NULL, NULL);
guestfs_mkdir (g, "/foo"); /* We don't care if this fails. */
guestfs_pop_error_handler (g);
```

The tests/extra directory has gone. The “extra tests” are now split into separately runnable targets, such as make check-valgrind. Use make help to get a summary of the targets.

The lpj option is passed to the appliance kernel when using TCG. This should improve clock stability (thanks Marcelo Tosatti, Olaf Hering).

**Bugs fixed**

<https://bugzilla.redhat.com/882417>

libguestfs tools fail with odd error messages if TMPDIR is not an absolute path

<https://bugzilla.redhat.com/882299>

Windows 8 guest disks can't be mounted: "The NTFS partition is in an unsafe state. Please resume and shutdown Windows fully (no hibernation or fast restarting), or mount the volume read-only with the 'ro' mount option."

<https://bugzilla.redhat.com/881953>

libguestfs: migration to /etc/hostname, /etc/vconsole.conf, /etc/locale.conf

<https://bugzilla.redhat.com/880801>

virt-df with two -a options displays incorrect disk image name

<https://bugzilla.redhat.com/879416>

libguestfs-test-tool pauses when you use --help option

<https://bugzilla.redhat.com/876579>

mke2fs API does not apply block device naming translation to journaldevice optarg

<https://bugzilla.redhat.com/860235>

SELinux policy ought to allow qemu to write to unconfined\_u:object\_r:user\_tmp\_t:s0

<https://bugzilla.redhat.com/859949>

RFE: inspect-list-applications does not return the architecture of RPM packages

<https://bugzilla.redhat.com/859885>

inspect-list-applications does not list all installed RPM packages with same name and different versions

<https://bugzilla.redhat.com/859876>

guestfish printed paths are not canonicalized

<https://bugzilla.redhat.com/859875>

Progress bar output should go to tty(?) stderr(?)

<https://bugzilla.redhat.com/858696>

virt-sysprep reports Guestfs.Error("read\_lines: fopen: /etc/sysconfig/network: No such file or directory") on some Fedora guests

<https://bugzilla.redhat.com/858128>

libguestfs fail to list devices added by add-drive-ro-with-if twice

<https://bugzilla.redhat.com/858126>

virt-inspector fail to work with some windows guests

<https://bugzilla.redhat.com/853762>

virt-sparsify should use a more robust method to detect the input format

<https://bugzilla.redhat.com/853393>

libvirt doesn't label console, serial sockets

<https://bugzilla.redhat.com/853159>

virt-rescue in Fedora 18 is completely broken

<https://bugzilla.redhat.com/852394>

libguestfs inspection limits registries to 100 MiB

<https://bugzilla.redhat.com/852194>

virt-sparsify --compress fails if output is raw format

<https://bugzilla.redhat.com/847881>

RFE: allow extra arguments (like --exclude) to tar-out

- <https://bugzilla.redhat.com/847880>  
tar-out should allow (or force) --numeric-owner
- <https://bugzilla.redhat.com/845522>  
guestfish “copy-out / localdir” command fails with “No such file or directory”
- <https://bugzilla.redhat.com/845488>  
Long filenames on NTFS cause tar-out, copy-out etc to fail with error “Cannot open: File name too long”
- <https://bugzilla.redhat.com/842307>  
RFE: Need help designing and implementing selinux policy for libguestfs/sVirt
- <https://bugzilla.redhat.com/840572>  
virt-make-fs / tar-in should support vfat properly
- <https://bugzilla.redhat.com/840115>  
guestfish touch problem – case\_sensitive\_path API expects the file to exist
- <https://bugzilla.redhat.com/836710>  
Data loss when writing to qcow2-format disk files
- <https://bugzilla.redhat.com/834712>  
lvresize, lvresize-free fail unnecessarily if you don’t change the size of the LV: “New size (nn extents) matches existing size (nn extents)”
- <https://bugzilla.redhat.com/824716>  
compress-device-out didn’t support bzip2
- <https://bugzilla.redhat.com/824043>  
guestfish unrecognized mount option gives confusing error message
- <https://bugzilla.redhat.com/823887>  
Filenames containing Chinese characters can’t be created on vfat filesystems
- <https://bugzilla.redhat.com/823885>  
virt-make-fs cannot create vfat filesystem containing filesystems with Chinese characters
- <https://bugzilla.redhat.com/823883>  
virt-make-fs -t fat fails with an obscure error message
- <https://bugzilla.redhat.com/823821>  
Inspection fails when /etc/HOSTNAME is empty
- <https://bugzilla.redhat.com/801117>  
libguestfs cannot get icon for Windows 8
- <https://bugzilla.redhat.com/798979>  
Ubuntu install CDs from oneiric onwards are not recognized: “multi-boot operating systems are not supported”
- <https://bugzilla.redhat.com/782167>  
libguestfs doesn’t recognize Windows Dynamic disks in some configurations, eg. spanned
- <https://bugzilla.redhat.com/713678>  
Not all febootstrap messages are redirected to log callbacks
- <https://bugzilla.redhat.com/627675>  
libguestfs inspector code cannot handle /dev/disk/by-id/\* paths
- <https://bugzilla.redhat.com/602997>  
part-get-bootable gives wrong result with an unordered part layout

## SEE ALSO

**guestfs-examples** (1), **guestfs-faq** (1), **guestfs-performance** (1), **guestfs-recipes** (1), **guestfs-testing** (1), **guestfs** (3), **guestfish** (1), <http://libguestfs.org/>

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[https://bugzilla.redhat.com/enter\\_bug.cgi?component=libguestfs&product=Virtualization+Tools](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.