

## openQA Tests - action #42362

[qe-core][qem][virtio][sle15sp0][sle15sp1][desktop][typing] test fails in window\_system because "typing string is too fast in wayland"

2018-10-12 06:17 - zcjia

<b>Status:</b>	In Progress	<b>Start date:</b>	2018-10-12
<b>Priority:</b>	Normal	<b>Due date:</b>	
<b>Assignee:</b>	zcjia	<b>% Done:</b>	0%
<b>Category:</b>	Bugs in existing tests	<b>Estimated time:</b>	0.00 hour
<b>Target version:</b>			
<b>Difficulty:</b>			
<b>Description</b>			
<b>Observation</b>			
openQA test in scenario sle-15-SP1-Installer-DVD-x86_64-desktopapps-remote-client1@64bit-virtio-vga fails in <a href="#">window_system</a>			
There are many failures in "window_system" here: <a href="https://openqa.suse.de/tests/overview?distri=sle&amp;version=15-SP1&amp;build=66.2&amp;groupid=118">https://openqa.suse.de/tests/overview?distri=sle&amp;version=15-SP1&amp;build=66.2&amp;groupid=118</a>			
These failures can go away if you restart the jobs a few times, but it should get proper fix.			
The cause is that "script_output" calls "type_string", which types many characters too fast into gnome, causing some characters missing or repeated.			
Similar issues happens on PPC64 platform, so there is "VNC_TYPING_LIMIT=10" in ppc64 worker.			
I tested on OSD, this setting works fine for gnome.			
(This setting means how many keys are typed into VNC in one second, default value is 50.)			
In other tests, there are also typing failures from time to time.			
@Oliver:			
So I wonder if this setting should be added to the sle-15-desktop medium type?			
<b>Reproducible</b>			
Fails since (at least) Build <a href="#">66.2</a> (current job)			
<b>Expected result</b>			
Last good: <a href="#">63.1</a> (or more recent)			
<b>Further details</b>			
Always latest result in this scenario: <a href="#">latest</a>			
possible misstype ninjakeys			
<b>Related issues:</b>			
Related to openQA Tests - action #41681: [desktop][sporadic][virtio] test fai...		<b>Resolved</b>	<b>2018-09-27</b>
Related to openQA Tests - action #53339: [opensuse] test fails in swing due t...		<b>Resolved</b>	<b>2019-06-19</b>
Related to openQA Tests - action #60257: [functional][u][mistyping] random ty...		<b>Rejected</b>	<b>2019-11-25</b>
Has duplicate openQA Tests - action #51332: [sle][functional][u] test fails i...		<b>Rejected</b>	<b>2019-05-09</b>
Blocks openQA Tests - coordination #43889: [qe-core][epic][functional][virtio]...		<b>Blocked</b>	

## History

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### #1 - 2018-10-12 13:55 - okurz

zcjia wrote:

@Oliver:

So I wonder if this setting should be added to the sle-15-desktop medium type?

I doubt this is a good idea. Also I do not think that "we type too fast". I guess the system is just loaded and a bit unresponsive just after startup. One can consider this a product bug.

I would suggest an approach similar to

<https://github.com/os-autoinst/os-autoinst-distri-opensuse/pull/5365>

which ensures with the desktop\_runner module that there is a certain "cool down time" directly after login. I suggest to involve jbaier as the test module maintainer of window\_system to handle this.

### #2 - 2018-10-17 13:55 - osukup

- Subject changed from [sle15sp1][desktop] test fails in window\_system because "typing string is too fast in gnome" to [qam][sle15sp0][sle15sp1][desktop] test fails in window\_system because "typing string is too fast in gnome"

same on qam jobs .. time to time this fails with typing issues

### #3 - 2018-10-18 02:24 - zcjia

@Oliver, I can confirm that the system load is not high when this error happens. Also, this error can happen elsewhere every now and then, which is very annoying.

I talked to another QA, his opinion and experience is that openQA is typing too fast: 50 key strokes a second is indeed too fast, especially for a desktop environment.

@jbaier, what's your opinion on this matter?

### #4 - 2018-10-22 08:18 - jbaier\_cz

For me it is a little bit weird. It was working quite confidently at the time of the development. Now I see those errors more and more often. Of course, I can rewrite the test (at the cost of loosing the record\_info feature for pretty presentation), however this issue could come back in other tests as there are a few tests which types in the terminal.

It would be nice to know the root of the issue (load on the worker / openQA backend issue / unreliable typing short after boot).

### #5 - 2018-10-29 06:23 - zcjia

- Status changed from New to In Progress

There are failures in palaces other than "window\_system", for example in "firefox\_smoke":

[https://openqa.suse.de/tests/2216384#next\\_previous](https://openqa.suse.de/tests/2216384#next_previous)

And I have an important discovery: all these "typing too fast" failures happen in wayland instead of X11.

I'll try to dig deeper.

### #6 - 2018-10-29 06:51 - zcjia

- Assignee set to zcjia

### #7 - 2018-10-30 09:21 - dzedro

I think problem is in broken key presses with QEMU VGA=std or QEMU VGA=virtio

### #8 - 2018-10-31 08:17 - zcjia

The reason to use QEMU VGA=virtio for wayland is that wayland doesn't support the default "cirrus", see <https://progress.opensuse.org/issues/21786>

### #9 - 2018-11-02 01:40 - zcjia

- Subject changed from [qam][sle15sp0][sle15sp1][desktop] test fails in window\_system because "typing string is too fast in gnome" to [qam][sle15sp0][sle15sp1][desktop] test fails in window\_system because "typing string is too fast in wayland"

I tested X11+virtio, there's no problem; so the problem happens in wayland+virtio.

I'll try to reproduce this problem outside of openQA.

**#10 - 2018-11-12 08:40 - yfjiang**

Hi [zcjia](#), [okurz](#), I saw an upstream bug of qemu was reported <https://bugs.launchpad.net/qemu/+bug/1802465>, it looks X is also affected but wayland is more easy to be impacted with a shorter length of trigger string. The problem is we are not sure how the issue will be escalated yet.

By the fact that there are quite some desktop testing of SLE-15-SP1 desktop were blocked by this issue, and Alpha-3 is coming:

<http://openqa.suse.de/tests/overview?distri=sle&version=15-SP1&build=88.6&groupid=118>

Is there a way to add an acceptable workaround to make the testing run more reliably? Thank you!

**#11 - 2018-11-16 02:13 - zcjia**

Since SLE-15-SP1-Alpha3 is coming, I will apply the workaround on OSD:

by adding "VNC\_TYPING\_LIMIT=10" to machine type "64bit-virtio-vga".

Let's see how it goes.

**#12 - 2018-11-16 13:09 - okurz**

Yes, I think this is a good idea. As long as you call the ticket only done when you removed that workaround again I am fine ;)

**#13 - 2018-11-21 10:00 - okurz**

- Related to action #41681: *[desktop][sporadic][virtio] test fails in window\_system to open windows or type correctly - related to wayland/virtio? added*

**#14 - 2018-11-23 15:23 - szarate**

- Description updated

So, looking at this... looks to me again to missing keys/ninjakeys: [https://openqa.suse.de/tests/2167333#step/window\\_system/4](https://openqa.suse.de/tests/2167333#step/window_system/4) if you look closely... the N is never let go and looking at the latest job: <https://openqa.suse.de/tests/2277128> there's a poem missing there... and the same for other jobs in the build...

**#15 - 2018-11-23 15:36 - szarate**

- Related to coordination #43889: *[qe-core][epic][functional][virtio][wayland] openQA makes spelling mistakes added*

**#16 - 2018-11-24 10:03 - okurz**

- Subject changed from *[qam][sle15sp0][sle15sp1][desktop] test fails in window\_system because "typing string is too fast in wayland" to [qam][virtio][sle15sp0][sle15sp1][desktop] test fails in window\_system because "typing string is too fast in wayland"*

yes, but in this example again it's specific to virtio, see [#41681](#)

**#17 - 2018-12-04 08:51 - zgao**

- File *gnome\_wayland\_qxl.png* added
- File *gnome\_wayland\_qxl2.png* added
- File *gnome\_wayland\_virtio.png* added
- File *gnome\_wayland\_virtio2.png* added
- File *gnome\_x11\_qxl.png* added
- File *gnome\_x11\_virtio.png* added
- File *kde\_wayland\_qxl.png* added
- File *kde\_wayland\_virtio.png* added
- File *kde\_wayland\_virtio2.png* added
- File *kde\_x11\_qxl.png* added

I ran several tests with respect to

- qxl or virtio
- x11 or wayland
- gnome or kde

It seems to me that:

- qxl seems to mitigate the problem, if you could compare `gnome_wayland_qxl.png` to `gnome_wayland_virtio.png` in the attachment
- x11 has much fewer typing misses but once in a while it still happens
- A special case ABCDE causes high miss rate on shift key (around 50%) for both x11 and wayland, please refer to \*2.png in the attachment

Above is my option and it's merely based on my observation. I ran around 1000 characters for each test. Qemu version based on stable-2.12 and `queue_count` enlarged to 102400.

What do you think? What other things can we tweak?

#### #18 - 2018-12-04 15:31 - okurz

Good evaluation. I wonder why you selected libreoffice though. IMHO libreoffice is especially prone to cause mistyping, see [#43889](#), maybe because of "spell correction" or something. The original ticket observation was about "window\_system" so maybe the results would actually be different if you would conduct the experiment in a more "simple" environment, e.g. gedit/kwrite

#### #19 - 2018-12-11 10:50 - zgao

Thank you!

I actually tested on both gedit and libreoffice. I will proceed with gedit here after.

I found a special case about sending key streams ending with a uppercase letter, e.g. ABCDE, AbC, aaaC

If you could refer to `gnome_wayland_virtio2.png`, `gnome_wayland_qxl2.png` or `kde_wayland_virtio2.png` in the above attachment, you could found there's a obvious miss on lowercase or uppercase every two times.

The reason is as follows, when we send one character A, the key code sent is actually like

1. capslock pressed
2. a pressed
3. enter pressed So capslock is always used instead of shift and now capslock gets toggled.

If a lowercase letter comes after a capital letter, the capslock would be pressed again so capslock will get back to normal. But if key stream ends with a uppercase letter, it is observed that capslock is not pressed again and therefore toggled.

Now I'm wondering which part of code actually deals with capslock, is it ps2 driver handling it or vncdotool?  
What do you think?

#### #20 - 2018-12-11 14:39 - okurz

Are you sure it's "caps lock" or just "shift"? I guess that it is either qemu or VNC, I doubt that vncdotool is involved here at all. [https://build.opensuse.org/package/view\\_file/Virtualization/qemu/0025-Fix-tigervnc-long-press-issue.patch?expand=1](https://build.opensuse.org/package/view_file/Virtualization/qemu/0025-Fix-tigervnc-long-press-issue.patch?expand=1) might be related? Just browsed the web quickly myself, maybe <https://www.berrange.com/posts/2010/07/04/more-than-you-or-i-ever-wanted-to-know-about-virtual-keyboard-handling/> helps. Sorry, can't help more.

#### #21 - 2018-12-14 11:40 - zgao

- File `qemu_vnc_keypress.jpg` added

Thank you for the comment!!

An update about this issue,

I checked on guest OS regarding what values kernel receive, and it turns out to be wrong.

- First on guest OS, I found the keyboard device at `/dev/input/eventX`, X might subject to be any number.
- Then I monitor what this device -- eventX receives by `evtest /dev/input/eventX`

According to my observation, there are key misses at `/dev/input/eventX`. But I have not yet find any key wrongly ordered. A key miss might cause a lot more errors on x11 or wayland.

Additionally, qemu has vnc layer, input event queue layer, ps2 key queue layer. I printed values in the queues of these lays --- and found out they are all accurate.

So I presume it is a problem about qemu interfacing with guest kernel.  
I attached a graph how qemu deals with key inputs, it's made by me and hope it helps.

#### #22 - 2018-12-14 16:58 - okurz

wow, I appreciate your fine detailed investigation notes, especially the picture can help understanding, thx.

#### #23 - 2018-12-19 06:39 - zgao

I found the bug resides both in qemu internals and in wayland.

In qemu, it is a concurrency problem since capslock LED is handled by another thread --- so keycode streams get messed up when capslock LED is emitted.

I opened up a [bug on qemu upstream](#)

The bug regarding wayland is observed when kernel event device receives correct keycode streams, gedit still shows wrong values. It seems to be relevant to [bug 1117833: Wayland: brief unresponsiveness and repeated keys](#) This bug is not observed on x11.

To check if kernel is to blame or not, I used ftrace and dynamic\_debug to peek into what kernel receives. It seems kernel receives what qemu sends it and passes all recognized key streams to /dev/input/event.

#### #24 - 2018-12-21 12:31 - zgao

Found related bug report related to fedora.

[Bug 1658676 - Typing '<' more than once \(with the specific keypress sequence used by os-autoinst\) breaks with usb-kbd and VNC.](#)

Also,  
['Less than' \(<\), 'more than' \(>\), and 'pipe' \(!\) can't be typed via VNC.](#)

Additionally, I will pay some attention to wayland bug, since it happens much more often comparably.

#### #25 - 2019-01-11 12:18 - zgao

[Issue raised on gnome-shell gitlab](#)

As pointed out by zcjia, wayland typing issue only happens after gnome-shell 3.2.6.

Noted that this wayland issue is to be blame for severe typing flaws on wayland under gnome.

But typing issues on openQA involves qemu issues, and possibly other parts ---we found that create\_hdd\_\* cases might have user name typed wrong, but I failed to reproduce this problem in installed x11 instance where I tested around 250,000 characters through vnc 10ms per char.

You could refer to [gnome-gdm](#), where typing user name went wrong 3 out of the 10 times from 20181214 to 20190103. They fail at first\_boot  
Also, in [this case](#) and [this case](#)

#### #26 - 2019-01-11 13:49 - okurz

Regarding wrong user name typing during installation: That should fail the test earlier in [https://openqa.opensuse.org/tests/829175#step/user\\_settings/2](https://openqa.opensuse.org/tests/829175#step/user_settings/2) with the right needle. It looks like the last matched needle has vanished. Maybe you are onto this already?

#### #27 - 2019-04-02 07:55 - SLindoMansilla

- Related to deleted (coordination #43889: [qe-core][epic][functional][virtio][wayland] openQA makes spelling mistakes)

#### #28 - 2019-04-02 07:55 - SLindoMansilla

- Blocks coordination #43889: [qe-core][epic][functional][virtio][wayland] openQA makes spelling mistakes added

#### #29 - 2019-05-20 09:36 - okurz

- Has duplicate action #51332: [sle][functional][u] test fails in firefox - wrong html page loaded added

#### #30 - 2019-06-21 04:34 - okurz

- Related to action #53339: [opensuse] test fails in swing due to incorrect rendering on 16bpp framebuffer added

#### #31 - 2019-07-06 04:24 - AdamWill

This ticket is kinda more broad than my specific issue, but I did notice one very specific issue with the Firefox Wayland native backend (specifically, it does not happen with the X11 backend): typing modified characters fails very often. See [https://bugzilla.redhat.com/show\\_bug.cgi?id=1727388](https://bugzilla.redhat.com/show_bug.cgi?id=1727388) . I found that reversing the order of the 'key up' events when doing modified characters - so e.g. to type a colon we do:

1. shift down
2. ; down
3. ; up
4. shift up

instead of this:

1. shift down
2. ; down
3. shift up

4. ; up

works around that problem; <https://github.com/os-autoinst/os-autoinst/pull/1174> is my PR for that.

#### #32 - 2019-07-06 04:25 - AdamWill

For the record, in the Fedora tests we commonly use our `type_slowly` and `type_very_slowly` macros for typing in GNOME (and KDE), exactly because we've seen this kind of problem before. `type_slowly` just slows down the typing speed. `type_very_slowly` slows it down even more, and does a `wait_screen_change` between each key press.

#### #33 - 2019-10-27 15:26 - okurz

Hi [zcjia](#), [zgao](#) the issue of problems with typing characters persists as also the linked tickets describe, e.g. [#43889](#). What are your plans on working on this issue?

#### #34 - 2019-10-28 01:20 - zcjia

okurz wrote:

Hi [zcjia](#), [zgao](#) the issue of problems with typing characters persists as also the linked tickets describe, e.g. [#43889](#). What are your plans on working on this issue?

Hi Oliver, (zgao was an intern and left the company), this problem is caused by multiple sources, one of them is the version of GNOME. I will give this problem another try as we are going to GNOME 3.34 in SLE15SP2.

#### #35 - 2019-10-28 08:28 - okurz

I saw the latest problem in Tumbleweed where there is already gnome 3.34 so no need to wait :)

#### #36 - 2020-01-24 11:14 - okurz

- Related to action #60257: *[functional][u][mistyping] random typing issues on wayland added*

#### #37 - 2020-04-09 20:42 - bmwiedemann

For the record: the original rate was 6.66 keystrokes/s from

<https://github.com/os-autoinst/os-autoinst/blob/v1/bmwqemu.pm#L398>

That was still using the qemu monitor interface where capital letters were one "sendkey shift-n".

And when typing longer strings, it would wait for output to catch up after 13 chars:

<https://github.com/os-autoinst/os-autoinst/blob/v1/bmwqemu.pm#L423>

mostly meant for isolinux and grub where BIOS keystroke buffer was limited to 15 and graphics could take a while to redraw. But I also remember cases where KDE was slow to react and slower typing helped.

#### #38 - 2020-11-06 10:17 - tjyrinki\_suse

- Subject changed from *[qam][virtio][sle15sp0][sle15sp1][desktop] test fails in window\_system because "typing string is too fast in wayland"* to *[qe-core][qam][virtio][sle15sp0][sle15sp1][desktop] test fails in window\_system because "typing string is too fast in wayland"*

#### #39 - 2020-11-26 12:50 - tjyrinki\_suse

- Subject changed from *[qe-core][qam][virtio][sle15sp0][sle15sp1][desktop] test fails in window\_system because "typing string is too fast in wayland"* to *[qe-core][qem][virtio][sle15sp0][sle15sp1][desktop] test fails in window\_system because "typing string is too fast in wayland"*

#### #40 - 2021-04-30 07:39 - tjyrinki\_suse

- Subject changed from *[qe-core][qem][virtio][sle15sp0][sle15sp1][desktop] test fails in window\_system because "typing string is too fast in wayland"* to *[qe-core][qem][virtio][sle15sp0][sle15sp1][desktop][typing] test fails in window\_system because "typing string is too fast in wayland"*

### Files

gnome_wayland_qxl2.png	87.8 KB	2018-12-04	zgao
gnome_wayland_qxl.png	156 KB	2018-12-04	zgao
gnome_wayland_virtio.png	143 KB	2018-12-04	zgao
gnome_wayland_virtio2.png	74.5 KB	2018-12-04	zgao
gnome_x11_qxl.png	178 KB	2018-12-04	zgao
gnome_x11_virtio.png	189 KB	2018-12-04	zgao
kde_wayland_virtio.png	97.7 KB	2018-12-04	zgao
kde_wayland_virtio2.png	72.2 KB	2018-12-04	zgao
kde_x11_qxl.png	137 KB	2018-12-04	zgao

kde_wayland_qxl.png	156 KB	2018-12-04	zgao
qemu_vnc_keypress.jpg	147 KB	2018-12-14	zgao