

# wineoops – A statistical approach to Wine crashes

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# Inspiration/Motivation

- [kerneloops.org](http://kerneloops.org)
- Searching the Internet:
  - Wine "starting debugger..."
  - "wine call from" "unimplemented function"
- Some long threads on wine-devel

# kerneloops.org

- Created by Arjan van der Ven
- Collects Linux Kernel
  - Oopses (crash signatures)
  - BUGs, WARNs
- Regular reports to LKML
- Successful



# KERNELOOPS.ORG



## About kerneloops.org

kerneloops.org is a website that tries to help the developers of the Linux kernel by collecting so-called *oopses*, which are the crash signatures of the Linux kernel. The collected oopses are processed statistically to present information for the kernel developers, such as

- Which crash signatures occur the most? (and thus need to be fixed most urgently)
- When did a certain crash signature show up first?
- Which API functions are the most error prone?

Oopses are collected from the linux-kernel mailing list (and a few related lists), the bugzilla.kernel.org bugzilla and from the client application that you can download from this page.

Kernel oops count	
2.6.32-rc	451
2.6.31-release	58384
2.6.31-rc	7604
2.6.30-release	85894
2.6.30-rc	2552
2.6.29-release	203135
2.6.29-rc	20078
2.6.28-release	32029
2.6.28-rc	1747
2.6.27-release	234974
2.6.27-rc	4783
2.6.26-release	168698
2.6.26-rc	894
2.6.25-release	79440

Current top 10 issues		
1. <a href="#">suspend_test_finish(System Product Name)</a>	1324	partial fix in commit 04bf7539c08d64184736cdc5e4ad617eda77eb0f
2. <a href="#">dev_watchdog(sis900)</a>	1016	
3. <a href="#">acpi_idle_enter_bm</a>	976	
4. <a href="#">suspend_test_finish(Unknown)</a>	593	partial fix in commit 04bf7539c08d6
5. <a href="#">tcp_recvmmsg</a>	499	
6. <a href="#">inotify_remove_from_idr</a>	485	Fixed in commit 9f0d793b52eb
7. <a href="#">ieee80211_scan_completed</a>	432	
8. <a href="#">ext2_sync_fs</a>	337	[fixed] Warning when the user unplugs a mounted USB stick
9. <a href="#">idr_callback</a>	297	Fixed in commit 9f0d793b52eb before 2.6.32-rc6
10. <a href="#">ieee80211_tearardown_sdata</a>	285	[fixed] Incorrectly placed check for having the interface up

Kernel oops collection utility	
Version 0.12	<a href="#">kerneloops-0.12.tar.gz</a>
Version 0.10	<a href="#">Fedora 8 src i386 rpms</a>
[included in Fedora]	<a href="#">Fedora packages</a>
[included in Debian]	<a href="#">Debian packages</a>
[included in Gentoo]	<a href="#">Gentoo packages</a>
development	<a href="#">Git repository</a>



# KERNELLOOPS.ORG



Modules in: parport\_pc lp parport autofs4 crc32c libcrc32c iscsi\_sfnet scsi\_transport\_iscsi i2c\_dev i2c\_core lock\_dlm(U) gfs(U) lock

2.6.32 | 2.6.32-rc | 2.6.31-release | 2.6.31-rc | 2.6.30-release | 2.6.30-rc | 2.6.29-release | 2.6.29-rc | .....

Oops search on suspend\_test\_finish(System Product Name) in the 2.6 version kernel series

## History for suspend\_test\_finish(System Product Name)

2.6.31-rc5	1 x
2.6.31	2722 x
2.6.30-rc8	1 x
2.6.30-rc5	1 x
2.6.29-rc8-git2	1 x
2.6.29-rc7-git4	6 x
2.6.29-rc3-git10	2 x
2.6.29-rc3	6 x
2.6.29.1	4 x
2.6.29	24 x
2.6.27.15	1 x

## Detailed oops backtraces

Oops number:	#413215 (962 times)	#103618 (13 times)	#51311 (16 times)	#721684 (1 time)
Versions	908x 2.6.31-14-generic 50x 2.6.31-14-generic-pae 2x 2.6.31-12-generic 1x 2.6.31-10-generic 1x 2.6.31-11-generic	13x 2.6.31-14-generic	16x 2.6.31-14-generic	1x 2.6.31-14-generic
Function	suspend_test_finish(System Product Name)	suspend_test_finish(System Product Name)	suspend_test_finish(System Product Name)	suspend_test_finish(Syst Product Name)
Process	962x pm	13x pm	16x pm	1x pm
	oops is tainted	oops is tainted	oops is tainted	oops is tainted
	<b>WARN_ON statement</b>	<b>WARN_ON statement</b>	<b>WARN_ON statement</b>	<b>WARN_ON statement</b>
	kernel/power/suspend_test.c:52 suspend_test_finish+0x7c/0x80)	kernel/power/suspend_test.c:52 suspend_test_finish+0x7c/0x80)	kernel/power/suspend_test.c:52 suspend_test_finish+0x80/0x90)	kernel/power/suspend_te suspend_test_finish+0x7
Backtrace	*suspend_test_finish warn_slowpath_common warn_slowpath_fmt suspend_test_finish suspend_devices_and_enter enter_state state_store kobj_attr_store sysfs_write_file vfs_write ? do_page_fault sys_write system_call_fastpath	*suspend_test_finish warn_slowpath_common warn_slowpath_fmt suspend_test_finish suspend_devices_and_enter enter_state state_store kobj_attr_store sysfs_write_file vfs_write ? do_page_fault sys_write system_call_fastpath	*suspend_test_finish warn_slowpath_common ? suspend_test_finish ? suspend_test_finish warn_slowpath_fmt suspend_test_finish suspend_devices_and_enter enter_state state_store suspend_devices_and_enter state_store ? printk enter_state state_store ? state_store kobj_attr_store sysfs_write_file vfs_write ? sysfs_write_file ? do_page_fault sys_write syscall_call	*suspend_test_finish warn_slowpath_common warn_slowpath_fmt suspend_test_finish suspend_devices_and_enter enter_state state_store kobj_attr_store sysfs_write_file vfs_write ? do_page_fault sys_write system_call_fastpath

## Hardware stats

1806 System Product Name

# Wine Crashes

- Too many
- Too bad
- No time
  - Developers
  - **AND** Users
- No skills
  - Users
  - **AND** Developers

# Statistic Approach

- Time per crash insignificant
- Focus
  - Common issues float to the top
  - “Bad” crashes *should* disappear in the noise
- Hard numbers
  - For Wine
  - Outside parties

# wineoops

- Idea and tips from [kerneloops.org](http://kerneloops.org)
- Perl scripts
- Database (sqlite)
- Some bad web pages



# wineoops

- Demo quality
- Crashes from Aug, Sep, Oct archives
  - wine-bugs
  - wine-devel
  - wine-users / Forums

## About wineoops

wineoops is statistical approach to handle Wine crash dump reports. The idea is heavily based on the [kerneloops.org](http://kerneloops.org) website that provides very successfully a similar service for the Linux Kernel.

wineoops is at the moment still in a proof of concept phase but the data are real Wine crash dumps collected from the Wine bug tracker, the wine-user and the wine-devel mailing list.

## Wine Crash Statistics

### General statistics

Number of crashes collected: 434

Date of first crash: 2009-08-01 05:50:41

Date of last crash: 2009-11-01 01:02:11

### Top Problematic Functions

Module	Function	Count
ntdll	raise_status	10
libc.so.6	memcpy	9
kernel32	RaiseException	7
ole32	DllRegisterServer	6
wineX11	X11DRV_XRender_ExtTextOut	6
ntdll	RtlAllocateHeap	5
user32	WINPROC_wrapper	5
wined3d	DestroyContext	5
libc.so.6	strlen	4
rpcrt4	_RpcExceptionFilter	4
gdi32	GetObjectW	3
kernel32	__wine_emulate_instruction	3
libssl.so.0.9.8	SSL_CTX_set_default_verify_paths	3
libwine.so.1	wine_utf8_wcstombs	3
ntoskrnl.exe	MmMapIoSpace	3
user32	call_window_proc	3
dbghelp	elf_load_debug_info	2
hhctrl	NavigateToChm	2
i915_dri.so	intel_validate_framebuffer	2
libcrypto.so.0.9.8	lh_insert	2
mfc42	4083	2
mshtml	update_window_doc	2
msi	msi_destroy_stringtable	2
ntdll	__regs_RtlRaiseException	2
ntoskrnl.exe	IoGetCurrentProcess	2

### Exception Types

Type	Count
page fault	354
unimplemented function	28
0xc0000025	12
assertion failed	11
C++ exception	7
divide by zero	5
0x000006ba	4
0xe0434f4d	4
wait failed on critical section	3
floating point	2
privileged instruction	2
0x80000001	1
CTRL-C	1

### Crashes per Wine Version

Wine Version	Count
UNKNOWN	411
wine-1.1.32	6
wine-1.1.27	3
wine-1.1.29	3
wine-1.1.30	3
wine-1.1.31	3
wine-1.1.26	2
wine-0.9.46	1
wine-1.1.28	1
wine-1.1.30~winehq1	1

# TODOs

- Get feedback
- Public git repo
- Parser improvements
- Same bug detection
- Web bling
- Add more crash sources
- Automate run

# Dreams & Wishes

- Help with TODOs is welcome
- Pink Ponies
  - Ban **ALL** automatic line wrapping
  - Wine version in crashes
  - UUID/GUID for each crash

# Future

- Extent crash dialog to submit the crashes
  - Privacy (no additional data)
  - Easy for user to submit (Ask/Always/Never)
  - Short and pregnant **why** they want to submit
  - Sell it to the distributions
- Collector on winehq.org
- Collect ERR/WARN/FIXME too??