

Linux System Call Table for x86_64

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Introduction

This document lists the Linux system call numbers for the x86_64 architecture, including their names, arguments, and links to manuals and implementations. The data is sourced from the `syscall_64.tbl` file in the Linux 6.16-rc1 kernel and the `syscalls.h` header file. For more details, refer to the `syscall(2)` and `syscalls(2)` man pages or visit <https://filippo.io/linux-syscall-table/>.

System Call Table

The return value of each system call is placed in `%rax`. Below is the comprehensive table of system calls:

<code>%rax</code>	Name	Manual	Entry Point
0	<code>read</code>	read(2)	<code>sys_read</code>
1	<code>write</code>	write(2)	<code>sys_write</code>
2	<code>open</code>	open(2)	<code>sys_open</code>
3	<code>close</code>	close(2)	<code>sys_close</code>
4	<code>stat</code>	stat(2)	<code>sys_newstat</code>
5	<code>fstat</code>	fstat(2)	<code>sys_newfstat</code>
6	<code>lstat</code>	lstat(2)	<code>sys_newlstat</code>
7	<code>poll</code>	poll(2)	<code>sys_poll</code>
8	<code>lseek</code>	lseek(2)	<code>sys_lseek</code>
9	<code>mmap</code>	mmap(2)	<code>sys_ksys_mmap_pgoff</code>
10	<code>mprotect</code>	mprotect(2)	<code>sys_mprotect</code>
11	<code>munmap</code>	munmap(2)	<code>sys_munmap</code>
12	<code>brk</code>	brk(2)	<code>sys_brk</code>
13	<code>rt_sigaction</code>	rt_sigaction(2)	<code>sys_rt_sigaction</code>
14	<code>rt_sigprocmask</code>	rt_sigprocmask(2)	<code>sys_rt_sigprocmask</code>
15	<code>rt_sigreturn</code>	rt_sigreturn(2)	<code>sys_rt_sigreturn</code>
16	<code>ioctl</code>	ioctl(2)	<code>sys_ioctl</code>
17	<code>pread64</code>	pread64(2)	<code>sys_pread64</code>
18	<code>pwrite64</code>	pwrite64(2)	<code>sys_pwrite64</code>
19	<code>readv</code>	readv(2)	<code>sys_readv</code>
20	<code>writev</code>	writev(2)	<code>sys_writev</code>
21	<code>access</code>	access(2)	<code>sys_access</code>

%rax	Name	Manual	Entry Point
22	pipe	pipe(2)	sys_pipe
23	select	select(2)	sys_select
24	sched_yield	sched_yield(2)	sys_sched_yield
25	mremap	mremap(2)	sys_mremap
26	msync	msync(2)	sys_msync
27	mincore	mincore(2)	sys_mincore
28	madvise	madvise(2)	sys_madvise
29	shmget	shmget(2)	sys_shmget
30	shmat	shmat(2)	sys_shmat
31	shmctl	shmctl(2)	sys_shmctl
32	dup	dup(2)	sys_dup
33	dup2	dup2(2)	sys_dup2
34	pause	pause(2)	sys_pause
35	nanosleep	nanosleep(2)	sys_nanosleep
36	getitimer	getitimer(2)	sys_getitimer
37	alarm	alarm(2)	sys_alarm
38	setitimer	setitimer(2)	sys_setitimer
39	getpid	getpid(2)	sys_getpid
40	sendfile	sendfile(2)	sys_sendfile64
41	socket	socket(2)	sys_socket
42	connect	connect(2)	sys_connect
43	accept	accept(2)	sys_accept
44	sendto	sendto(2)	sys_sendto
45	recvfrom	recvfrom(2)	sys_recvfrom
46	sendmsg	sendmsg(2)	sys_sendmsg
47	recvmsg	recvmsg(2)	sys_recvmsg
48	shutdown	shutdown(2)	sys_shutdown
49	bind	bind(2)	sys_bind
50	listen	listen(2)	sys_listen
51	getsockname	getsockname(2)	sys_getsockname
52	getpeername	getpeername(2)	sys_getpeername
53	socketpair	socketpair(2)	sys_socketpair
54	setsockopt	setsockopt(2)	sys_setsockopt
55	getsockopt	getsockopt(2)	sys_getsockopt
56	clone	clone(2)	sys_clone
57	fork	fork(2)	sys_fork
58	vfork	vfork(2)	sys_vfork
59	execve	execve(2)	sys_execve
60	exit	exit(2)	sys_exit
61	wait4	wait4(2)	sys_wait4
62	kill	kill(2)	sys_kill
63	uname	uname(2)	sys_newuname
64	semget	semget(2)	sys_semget
65	semop	semop(2)	sys_semop
66	semctl	semctl(2)	sys_semctl
67	shmdt	shmdt(2)	sys_shmdt

%rax	Name	Manual	Entry Point
68	msgget	msgget(2)	sys_msgget
69	msgsnd	msgsnd(2)	sys_msgsnd
70	msgrcv	msgrcv(2)	sys_msgrcv
71	msgctl	msgctl(2)	sys_msgctl
72	fcntl	fcntl(2)	sys_fcntl
73	flock	flock(2)	sys_flock
74	fsync	fsync(2)	sys_fsync
75	fdatasync	fdatasync(2)	sys_fdatasync
76	truncate	truncate(2)	sys_truncate
77	ftruncate	ftruncate(2)	sys_ftruncate
78	getdents	getdents(2)	sys_getdents
79	getcwd	getcwd(2)	sys_getcwd
80	chdir	chdir(2)	sys_chdir
81	fchdir	fchdir(2)	sys_fchdir
82	rename	rename(2)	sys_rename
83	mkdir	mkdir(2)	sys_mkdir
84	rmdir	rmdir(2)	sys_rmdir
85	creat	creat(2)	sys_creat
86	link	link(2)	sys_link
87	unlink	unlink(2)	sys_unlink
88	symlink	symlink(2)	sys_symlink
89	readlink	readlink(2)	sys_readlink
90	chmod	chmod(2)	sys_chmod
91	fchmod	fchmod(2)	sys_fchmod
92	chown	chown(2)	sys_chown
93	fchown	fchown(2)	sys_fchown
94	lchown	lchown(2)	sys_lchown
95	umask	umask(2)	sys_umask
96	gettimeofday	gettimeofday(2)	sys_gettimeofday
97	getrlimit	getrlimit(2)	sys_getrlimit
98	getrusage	getrusage(2)	sys_getrusage
99	sysinfo	sysinfo(2)	sys_sysinfo
100	times	times(2)	sys_times
101	ptrace	ptrace(2)	sys_ptrace
102	getuid	getuid(2)	sys_getuid
103	syslog	syslog(2)	sys_syslog
104	getgid	getgid(2)	sys_getgid
105	setuid	setuid(2)	sys_setuid
106	setgid	setgid(2)	sys_setgid
107	geteuid	geteuid(2)	sys_geteuid
108	getegid	getegid(2)	sys_getegid
109	setpgid	setpgid(2)	sys_setpgid
110	getppid	getppid(2)	sys_getppid
111	getpgrp	getpgrp(2)	sys_getpgrp
112	setsid	setsid(2)	sys_setsid
113	setreuid	setreuid(2)	sys_setreuid

%rax	Name	Manual	Entry Point
114	setregid	setregid(2)	sys_setregid
115	getgroups	getgroups(2)	sys_getgroups
116	setgroups	setgroups(2)	sys_setgroups
117	setresuid	setresuid(2)	sys_setresuid
118	getresuid	getresuid(2)	sys_getresuid
119	setresgid	setresgid(2)	sys_setresgid
120	getresgid	getresgid(2)	sys_getresgid
121	getpgid	getpgid(2)	sys_getpgid
122	setfsuid	setfsuid(2)	sys_setfsuid
123	setfsgid	setfsgid(2)	sys_setfsgid
124	getsid	getsid(2)	sys_getsid
125	capget	capget(2)	sys_capget
126	capset	capset(2)	sys_capset
127	rt_sigpending	rt_sigpending(2)	sys_rt_sigpending
128	rt_sigtimedwait	rt_sigtimedwait(2)	sys_rt_sigtimedwait
129	rt_sigqueueinfo	rt_sigqueueinfo(2)	sys_rt_sigqueueinfo
130	rt_sigsuspend	rt_sigsuspend(2)	sys_rt_sigsuspend
131	sigaltstack	sigaltstack(2)	sys_sigaltstack
132	utime	utime(2)	sys_utime
133	mknod	mknod(2)	sys_mknod
134	uselib	Not implemented	
135	personality	personality(2)	sys_personality
136	ustat	ustat(2)	sys_ustat
137	statfs	statfs(2)	sys_statfs
138	fstatfs	fstatfs(2)	sys_fstatfs
139	sysfs	sysfs(2)	sys_sysfs
140	getpriority	getpriority(2)	sys_getpriority
141	setpriority	setpriority(2)	sys_setpriority
142	sched_setparam	sched_setparam(2)	sys_sched_setparam
143	sched_getparam	sched_getparam(2)	sys_sched_getparam
144	sched_setscheduler	sched_setscheduler(2)	sys_sched_setscheduler
145	sched_getscheduler	sched_getscheduler(2)	sys_sched_getscheduler
146	sched_get_priority_max	sched_get_priority_max(2)	sys_sched_get_priority_max
147	sched_get_priority_min	sched_get_priority_min(2)	sys_sched_get_priority_min
148	sched_rr_get_interval	sched_rr_get_interval(2)	sys_sched_rr_get_interval
149	mlock	mlock(2)	sys_mlock
150	munlock	munlock(2)	sys_munlock
151	mlockall	mlockall(2)	sys_mlockall
152	munlockall	munlockall(2)	sys_munlockall
153	vhangup	vhangup(2)	sys_vhangup
154	modify_ldt	modify_ldt(2)	sys_modify_ldt
155	pivot_root	pivot_root(2)	sys_pivot_root
156	_sysctl	_sysctl(2)	sys_ni_syscall
157	prctl	prctl(2)	sys_prctl
158	arch_prctl	arch_prctl(2)	sys_arch_prctl
159	adjtimex	adjtimex(2)	sys_adjtimex

%rax	Name	Manual	Entry Point
160	setrlimit	setrlimit(2)	sys_setrlimit
161	chroot	chroot(2)	sys_chroot
162	sync	sync(2)	sys_sync
163	acct	acct(2)	sys_acct
164	settimeofday	settimeofday(2)	sys_settimeofday
165	mount	mount(2)	sys_mount
166	umount2	umount2(2)	sys_umount
167	swapon	swapon(2)	sys_swapon
168	swapoff	swapoff(2)	sys_swapoff
169	reboot	reboot(2)	sys_reboot
170	sethostname	sethostname(2)	sys_sethostname
171	setdomainname	setdomainname(2)	sys_setdomainname
172	iopl	iopl(2)	sys_iopl
173	ioperm	ioperm(2)	sys_ioperm
174	create_module	Not implemented	
175	init_module	init_module(2)	sys_init_module
176	delete_module	delete_module(2)	sys_delete_module
177	get_kernel_syms	Not implemented	
178	query_module	Not implemented	
179	quotactl	quotactl(2)	sys_quotactl
180	nfsservctl	Not implemented	
181	getpmsg	Not implemented	
182	putpmsg	Not implemented	
183	afs_syscall	Not implemented	
184	tuxcall	Not implemented	
185	security	Not implemented	
186	gettid	gettid(2)	sys_gettid
187	readahead	readahead(2)	sys_readahead
188	setxattr	setxattr(2)	sys_setxattr
189	lsetxattr	lsetxattr(2)	sys_lsetxattr
190	fsetxattr	fsetxattr(2)	sys_fsetxattr
191	getxattr	getxattr(2)	sys_getxattr
192	lgetxattr	lgetxattr(2)	sys_lgetxattr
193	fgetxattr	fgetxattr(2)	sys_fgetxattr
194	listxattr	listxattr(2)	sys_listxattr
195	llistxattr	llistxattr(2)	sys_llistxattr
196	flistxattr	flistxattr(2)	sys_flistxattr
197	removexattr	removexattr(2)	sys_removexattr
198	lremovexattr	lremovexattr(2)	sys_lremovexattr
199	fremovexattr	fremovexattr(2)	sys_fremovexattr
200	tkill	tkill(2)	sys_tkill
201	time	time(2)	sys_time
202	futex	futex(2)	sys_futex
203	sched_setaffinity	sched_setaffinity(2)	sys_sched_setaffinity
204	sched_getaffinity	sched_getaffinity(2)	sys_sched_getaffinity
205	set_thread_area	Not implemented	

%rax	Name	Manual	Entry Point
206	io_setup	io_setup(2)	sys_io_setup
207	io_destroy	io_destroy(2)	sys_io_destroy
208	io_getevents	io_getevents(2)	sys_io_getevents
209	io_submit	io_submit(2)	sys_io_submit
210	io_cancel	io_cancel(2)	sys_io_cancel
211	get_thread_area	Not implemented	
212	lookup_dcookie	Not implemented	
213	epoll_create	epoll_create(2)	sys_epoll_create
214	epoll_ctl_old	Not implemented	
215	epoll_wait_old	Not implemented	
216	remap_file_pages	remap_file_pages(2)	sys_remap_file_pages
217	getdents64	getdents64(2)	sys_getdents64
218	set_tid_address	set_tid_address(2)	sys_set_tid_address
219	restart_syscall	restart_syscall(2)	sys_restart_syscall
220	semtimedop	semtimedop(2)	sys_semtimedop
221	fadvise64	fadvise64(2)	sys_fadvise64
222	timer_create	timer_create(2)	sys_timer_create
223	timer_settime	timer_settime(2)	sys_timer_settime
224	timer_gettime	timer_gettime(2)	sys_timer_gettime
225	timer_getoverrun	timer_getoverrun(2)	sys_timer_getoverrun
226	timer_delete	timer_delete(2)	sys_timer_delete
227	clock_settime	clock_settime(2)	sys_clock_settime
228	clock_gettime	clock_gettime(2)	sys_clock_gettime
229	clock_getres	clock_getres(2)	sys_clock_getres
230	clock_nanosleep	clock_nanosleep(2)	sys_clock_nanosleep
231	exit_group	exit_group(2)	sys_exit_group
232	epoll_wait	epoll_wait(2)	sys_epoll_wait
233	epoll_ctl	epoll_ctl(2)	sys_epoll_ctl
234	tgkill	tgkill(2)	sys_tgkill
235	utimes	utimes(2)	sys_utimes
236	vserver	Not implemented	
237	mbind	mbind(2)	sys_mbind
238	set_mempolicy	set_mempolicy(2)	sys_set_mempolicy
239	get_mempolicy	get_mempolicy(2)	sys_get_mempolicy
240	mq_open	mq_open(2)	sys_mq_open
241	mq_unlink	mq_unlink(2)	sys_mq_unlink
242	mq_timedsend	mq_timedsend(2)	sys_mq_timedsend
243	mq_timedreceive	mq_timedreceive(2)	sys_mq_timedreceive
244	mq_notify	mq_notify(2)	sys_mq_notify
245	mq_getsetattr	mq_getsetattr(2)	sys_mq_getsetattr
246	kexec_load	kexec_load(2)	sys_kexec_load
247	waitid	waitid(2)	sys_waitid
248	add_key	add_key(2)	sys_add_key
249	request_key	request_key(2)	sys_request_key
250	keyctl	keyctl(2)	sys_keyctl
251	ioprio_set	ioprio_set(2)	sys_ioprio_set

%rax	Name	Manual	Entry Point
252	ioprio_get	ioprio_get(2)	sys_ioprio_get
253	inotify_init	inotify_init(2)	sys_inotify_init
254	inotify_add_watch	inotify_add_watch(2)	sys_inotify_add_watch
255	inotify_rm_watch	inotify_rm_watch(2)	sys_inotify_rm_watch
256	migrate_pages	migrate_pages(2)	sys_migrate_pages
257	openat	openat(2)	sys_openat
258	mkdirat	mkdirat(2)	sys_mkdirat
259	mknodat	mknodat(2)	sys_mknodat
260	fchownat	fchownat(2)	sys_fchownat
261	futimesat	futimesat(2)	sys_futimesat
262	newfstatat	newfstatat(2)	sys_newfstatat
263	unlinkat	unlinkat(2)	sys_unlinkat
264	renameat	renameat(2)	sys_renameat
265	linkat	linkat(2)	sys_linkat
266	symlinkat	symlinkat(2)	sys_symlinkat
267	readlinkat	readlinkat(2)	sys_readlinkat
268	fchmodat	fchmodat(2)	sys_fchmodat
269	faccessat	faccessat(2)	sys_faccessat
270	pselect6	pselect6(2)	sys_pselect6
271	ppoll	ppoll(2)	sys_ppoll
272	unshare	unshare(2)	sys_unshare
273	set_robust_list	set_robust_list(2)	sys_set_robust_list
274	get_robust_list	get_robust_list(2)	sys_get_robust_list
275	splice	splice(2)	sys_splice
276	tee	tee(2)	sys_tee
277	sync_file_range	sync_file_range(2)	sys_sync_file_range
278	vmsplice	vmsplice(2)	sys_vmsplice
279	move_pages	move_pages(2)	sys_move_pages
280	utimensat	utimensat(2)	sys_utimensat
281	epoll_pwait	epoll_pwait(2)	sys_epoll_pwait
282	signalfd	signalfd(2)	sys_signalfd
283	timerfd_create	timerfd_create(2)	sys_timerfd_create
284	eventfd	eventfd(2)	sys_eventfd
285	fallocate	fallocate(2)	sys_fallocate
286	timerfd_settime	timerfd_settime(2)	sys_timerfd_settime

Notes

- System calls are implemented in functions named as in the Entry Point column, generated with `DEFINE_SYSCALLx` macros.
- For detailed arguments, refer to the original source at <https://filippo.io/linux-syscall-table>
- The generator for this table is available on GitHub.

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