

# Establishing Linux Verification Center and Creation of an Open- Source LSB Test Suite

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# Agenda

- § About Project
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- § LSB Standard
- § Related Projects
- § Main Project Stages
- § Current Results and Plans

# Official Status

- § Customer: «Federal Agency for Science and Innovations», Ministry of Education and Science, Russia
- § Federal Program «Research and Development in the Priority Fields of Science and Technology» 2002-2006, Sector «Informational and Telecommunication Systems»
- § Lot IT-KP.4/003, 2005-2006, 15 million rubles (about US\$520000).

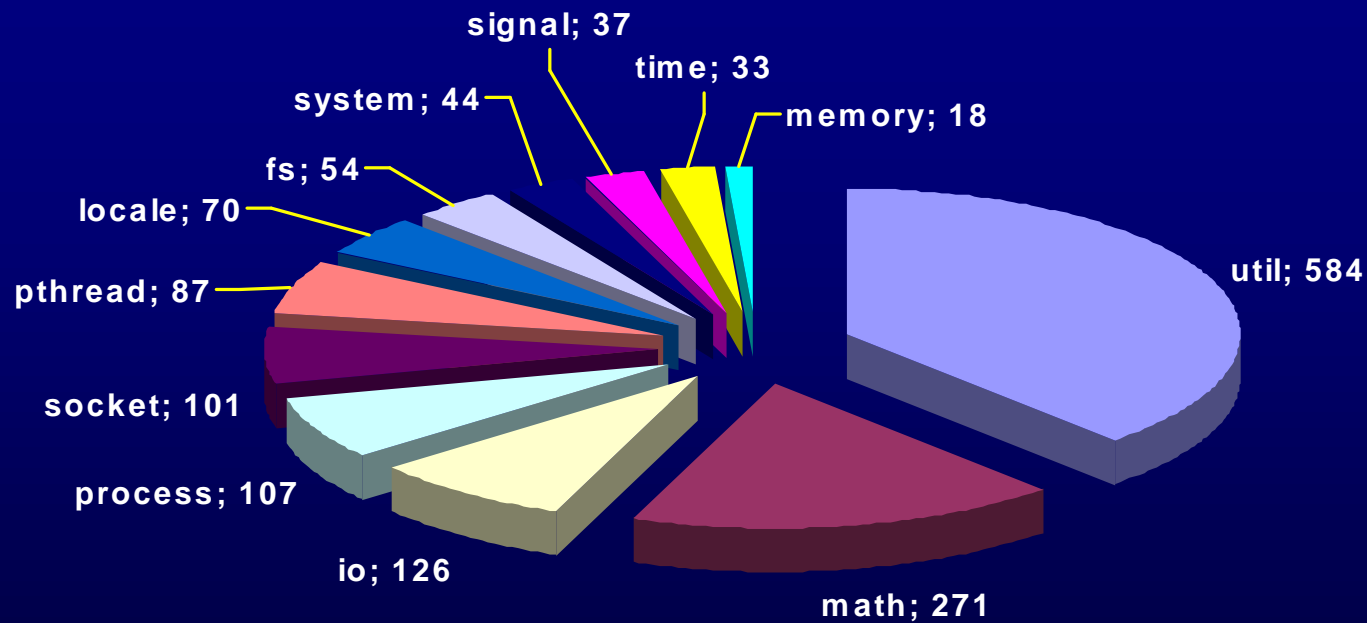
# Project Goals

- § Establishing Linux Verification Center
- § Analysis and formalization of LSB Core 3.1 requirements on Linux system interfaces
- § Development of an open source Test Suite for LSB conformance and functional testing of Linux

# Linux Standard Base (LSB)

- § Developed by Free Standards Group ([www.linuxbase.org](http://www.linuxbase.org)) since 2000
- § The first version 1.0 – June 2001
- § Current version 3.1 – October 2005
- § Platinum Members: HP, IBM, Intel
- § Gold Members: CA, Conectiva, Red Hat, Novell, MandrakeSoft, Miracle Linux, Sun Microsystems, Turbolinux, etc.

# LSB Core Interfaces by Functional Groups



**Total 1532 Functions**

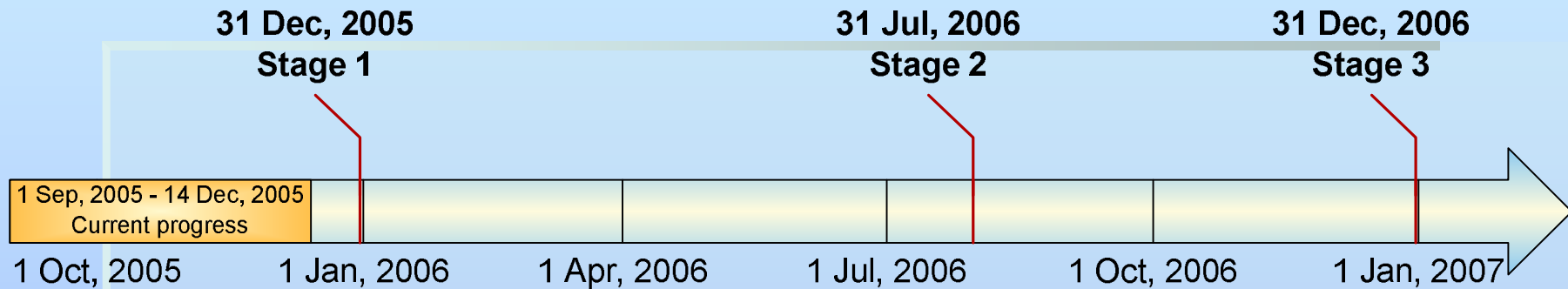
# Related Projects

- § LSB Test Suite [The Open Group / Free Standards Group]
- § Linux Testing Project (LTP) [SGI, IBM]
- § Glibc Tests [Redhat]
- § Open Posix [Intel]

# LSB Testing Coverage

Subsystem	Total	Glibc	LTP	LSB Suite	OpenPosix	No Tests
fs	54	31	33	22	0	13
io	126	73	66	59	0	29
locale	70	62	15	56	0	8
math	271	68	35	23	0	185
memory	18	12	18	7	0	0
process	107	60	77	53	0	14
pthread	87	78	79	0	59	2
signal	37	23	29	9	27	8
socket	101	34	48	0	0	45
system	44	13	23	10	1	16
time	33	23	31	10	11	2
util	584	146	72	118	0	386
Total	1532	623	526	367	98	708

# LSB Testing Stages



§ Stage 1: design

§ Stage 2: basic specifications and tests

§ Stage 3: test suite upgrade and evolution

# Current Progress

- § Basic specifications and tests for 220 functions
- § A few dozens of remarks for LSB/POSIX standard's text
- § A few behavioral mismatches with LSB of Fedora Core 4

# Implementation Code Coverage by Tests

Function Group	ISP RAS	GLIBC	Delta
fs.dir	96,3%	96,3%	0,0%
fs.name	100,0%	97,6%	2,4%
util.bit	100,0%	100,0%	0,0%
util.conversion.token	100,0%	100,0%	0,0%
util.inet	94,6%	75,2%	19,4%
util.search.queue	100,0%	42,9%	57,1%
util.search.search	88,6%	79,5%	9,1%
util.search.tree	73,5%	94,3%	-20,8%
util.string.str	98,3%	96,7%	1,6%
util.string.wmem	90,1%	87,9%	2,2%
util.string.wstr	99,3%	79,4%	19,9%

# Plans

- § Linux Verification Center Web-site  
([www.linuxtesting.ru](http://www.linuxtesting.ru),  
[www.linuxtesting.org](http://www.linuxtesting.org)) – beginning 2006
- § The first test suite version – summer 2006
- § Participating in conferences:
  - § LinuxWorld, Boston, USA – 06.04.06
  - § LinuxWorld, San Francisco, USA – 15.08.06
  - § LinuxWorld, Moscow – 04.09.06

**Thank you!**