

**MALAYSIAN PUBLIC SECTOR  
OPEN SOURCE SOFTWARE (OSS) PROGRAMME**

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**BENCHMARK / EVALUATION REPORT ON  
DISTRO FOR DESKTOP  
Ubuntu 9.10 vs openSUSE 11.2**

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## **SECTION 1 : INTRODUCTION**

## EXECUTIVE SUMMARY

There are a lot of Linux distributions available for Desktop Operating Systems and Server Operating Systems. All those Linux distributions (a.k.a. Distros) based on the same kernel but the applications, features and technologies differ. In terms of popularity, Ubuntu and openSUSE are the top two on the list in the article 'Top ten Linux Distributions' written by Alastair Otter dated 19<sup>th</sup> August 2009.

For the purpose of benchmarking, we have chosen Ubuntu 9.10 and openSUSE 11.2 to compare the general features and to evaluate the desktop's performance. The desktop-oriented evaluations performed on these distributions were RAMspeed and Izone for Writing and Reading performance. All evaluation tests were powered by Phoronix Test Suite.

## INTRODUCTION

Ubuntu 9.10 was released on 29<sup>th</sup> October 2009 and openSUSE 11.2 on 17<sup>th</sup> November 2009. Since the release of these 2 major distros, many reviews and comments have been made such that end users could be confused when choosing their Desktop Operating System. Ubuntu 9.10 and openSUSE 11.2 are both very mature and advanced Desktop Operating Systems and of course both will have their own pros and cons.

To compare and evaluate the general features and system performances of these 2 Desktop Operating systems, an evaluation was conducted by Research and Development unit of OSCC MAMPU.

## **SECTION 2 : EVALUATION METHODS**

## HARDWARE SPECIFICATIONS

The evaluation of Ubuntu 9.10 and openSUSE 11.2 was conducted on the same hardware specifications as listed below:

- Processor : Pentium Dual Core CPU E5300 @ 1.80GHz
- Motherboard : Gigabyte G31M-ES2L
- Architecture : x86
- Chipset : Intel 82G33/G31/P35/P31 + ICH7
- Memory : 4GB RAM
- HDD : 160GB WDC
- Graphics : Intel 82G33/G31 Express IGP 256MB

## COMPARISON & EVALUATION METHODS

First of all, 2 machines with the same hardware specifications were used for comparison and evaluation purposes. Ubuntu 9.10 and openSUSE 11.2 were installed in 2 separate machines and during the installation, the total number of steps was noted. The boot-up time after each installation was calculated using a stopwatch. The boot-up time was calculated from the time BIOS initiated until the desktop login page appeared. This process was conducted 3 consecutive times to get an average count.

The Desktop Operating Systems' general features such as Graphical Management System, Package Management System, file systems and new features were also tested in both distros.

The desktop-oriented evaluations were conducted using the Phoronix Test Suite which is the most comprehensive testing and evaluation platform available for the Linux operating system. This fully open source tool is based on the extensive Linux evaluation work and internal tools

developed by Phoronix.com since 2004. A wide range of tests are available with this tool but the test profiles selected for Ubuntu 9.10 and openSUSE 11.2 were RAMspeed and Izone for Writing and Reading performance.

The details on test profiles selected in this evaluation test.

- 1) RAMspeed : This tests the system memory (RAM) performance.
- 2) Izone (Write) : Izone (Write) is used to measure the performance of writing a new file.
- 3) Izone (Read) : Izone (Read) is used to measure the performance of reading an existing file.

## **SECTION 3 : DISCUSSION OF RESULTS**

## COMPARISON

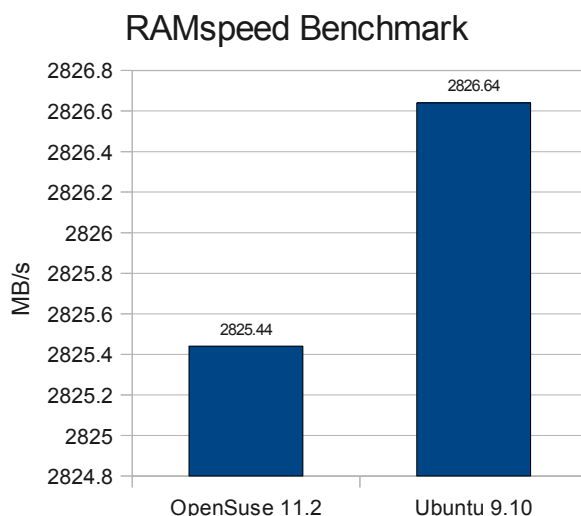
### Ubuntu 9.10 and openSUSE 11.2 comparison table

	Ubuntu 9.10	openSUSE 11.2
General Features	Ubuntu is based on the Debian Linux distribution, founded by Mark Shuttleworth and sponsored by Canonical Ltd	openSUSE operating system is built on top of Linux kernel, developed by the community-supported openSUSE Project and sponsored by Novell
Supported Architectures	x86, AMD64, and ARM	x86, x86_64, ppc
Minimal Hardware Requirements for Desktop	256MB RAM and 4GB HDD	256MB RAM and 3GB HDD
Default file system	Ext4	Ext4
Gnome version	2.28	2.28
Installation	<p>Ubuntu 9.10 installation can be completed in 7 steps. The flow of the installation comprises:</p> <ol style="list-style-type: none"> <li>1) Language Selection</li> <li>2) Region Selection</li> <li>3) Keyboard Layout Selection</li> <li>4) Disk Partitioning</li> <li>5) User Settings</li> <li>6) Summary of Installation</li> <li>7) Reboot</li> </ol>	<p>openSUSE 11.2 installation can be completed in 8 steps. The flow of the installation comprises:</p> <ol style="list-style-type: none"> <li>1) Welcome screen and License Agreement</li> <li>2) Clock and Time Zone</li> <li>3) Disk Partitioning</li> <li>4) User Setting</li> <li>5) Live Installation Settings</li> <li>6) Summary of Installation</li> <li>7) Reboot</li> <li>8) Automatic Configuration</li> </ol>
New features	a) Software centre – Replaces the	Enhances community-packaged

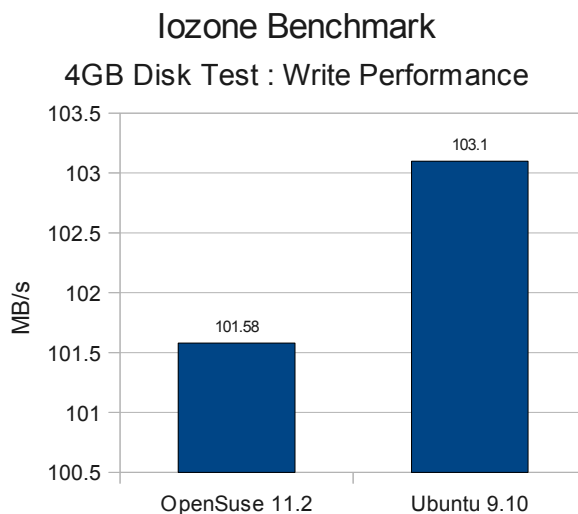
	<p>traditional Add/Remove Applications with an easier-to-use design</p> <p>b) Ubuntu One - File sharing service with other computers and the Ubuntu One network storage service.</p>	<p>applications and extends the reach of the system's suite of administration tools.</p>
<p>Boot up time                  (From BIOS until the login screen)  <i>Please see the appendix for table of results</i></p>	26sec	24.1sec
<p>Graphical Management System</p>	<p>Ubuntu does not provide a specific control panel for system management but many management tools have been added to the default installation</p>	<p>YaST – A full featured management tool where the system configuration can be performed here. One stop administration tool</p>
<p>Package Management Tools</p>	<p>Synaptic is a graphical package management program for Advanced Packaging Tool (APT). It provides the same features as the 'apt-get' command line utility. Software Center, a new feature in Ubuntu 9.10 replaces the previous "add/remove applications" tool and organises the software available for Ubuntu in an app store format.</p>	<p>YaST Software Management module is the software installer and package manager</p>
<p>Popularity based on Distrowatch Rank</p>	1 <sup>st</sup>	4 <sup>th</sup>

## EVALUATION TEST RESULT

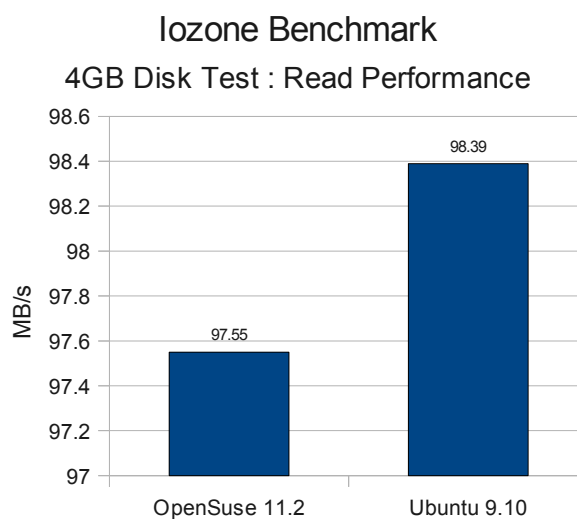
All the test results are presented here in bar charts. In all charts better performance is indicated by higher values.



RAMspeed test results shows Ubuntu 9.10 can process 2826.64 MB/s on general data sets without 3D acceleration compared to openSUSE 11.2's 2825.44 MB/s.



The 4GB disk test on write performance with lozone shows Ubuntu 9.10 can process in 103.10 MB/s compared to openSUSE 11.2's 101.58 MB/s



The 4GB disk test on read performance with lozone shows Ubuntu 9.10 can process in 98.39 MB/s compared to openSUSE 11.2's 97.55 MB/s

## CONCLUSIONS

Based on comparison and evaluation results, Ubuntu 9.10 and openSUSE 11.2 have their own advantages. From the test results of RAMspeed, Ubuntu 9.10 outperformed openSUSE 11.2. Ubuntu 9.10 is superior in its Package Management Tools while openSUSE 11.2 is superior in its Graphical System Management. Both Desktop Operating Systems are good in their own features and performances, but there is so little difference between these 2 releases that OSCC MAMPU recommends either as suitable for the average desktop user.

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## **SECTION 4 : REFERENCES**

## REFERENCES

Lists of references reviewed or consulted during the analysis.

- i. <http://www.openSUSE.org/en/>
- ii. <http://www.ubuntu.com/>
- iii. <http://www.phoronix-test-suite.com/>
- iv. <http://distrowatch.com/>
- v. [http://en.wikipedia.org/wiki/Ubuntu\\_operating\\_system](http://en.wikipedia.org/wiki/Ubuntu_operating_system)
- vi. <http://en.wikipedia.org/wiki/openSUSE>

## **SECTION 5 : APPENDIX**

Boot up time test results (From BIOS until the login screen)

No.of test	Boot up time (sec)	
	Ubuntu 9.10	openSUSE 11.2
1	25.9	23.9
2	26.1	24.3
3	26	24.1
<b>Average</b>	<b>26</b>	<b>24.1</b>