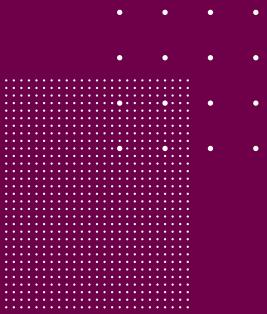


CANONICAL



TECHNICAL WHITE PAPER

Ubuntu Desktop for the enterprise

A paradigm shift in productivity, security and support

January 2011

Executive Summary

Ubuntu has become a serious contender for businesses looking for desktop alternatives. As an open-source system, it offers huge licensing savings over proprietary technologies. And it's far leaner and easier to customise, which helps you minimise management costs and get more from your older hardware.

This paper looks at three key areas where Ubuntu delivers compelling technical benefits for your business: productivity; security; and management and support.

Productivity:

When you compare Ubuntu with proprietary operating systems, you're not comparing like with like. While commercial offerings require you to buy office productivity and collaboration tools separately, Ubuntu gives you everything you need at extremely low cost. By partnering with major desktop vendors, we help your business migrate easily to an open-source platform and integrate Ubuntu desktops seamlessly with your existing environments.

As well as delivering the diverse applications information workers need, Ubuntu offers enterprise-class stability and performance. Because PCs boot up and work faster and never crash, your people can work effectively, and without interruption.

Security:

It's a great relief to know that Ubuntu isn't susceptible to viruses and malware written for Windows. While the risk of malicious attack is smaller from the outset, our dedicated Security team continues to work tirelessly to make Ubuntu even safer.

Specifically, the team works on compiler and kernel hardening to prevent security breaches. It has also introduced advanced security tools such as AppArmor, which allows systems administrators to manage security and access rights for each and every program.

By continuously identifying and resolving vulnerabilities, the Security team maintains the highest level of platform security and stability. We deliver security updates regularly for up to 18 months on standard Ubuntu Desktop Edition releases and for three years for long-term support (LTS) releases.

As the team searches for new security threats, so does the entire, worldwide open-source community. Working together, we can typically respond with an effective patch in just 24 hours or less.

Management and support:

Canonical offers comprehensive services for the Ubuntu desktop through the Ubuntu Advantage programme. This gives your business all the systems management tools and enterprise services you need to get the most from your open-source software.

To ensure success for your Ubuntu desktop deployment, Canonical also gives you access to experienced technical engineers and support staff. With their help, you'll be able to integrate and manage Ubuntu in your business more effectively from day one. And you'll find it far easier to troubleshoot any service issues.

Find out more...

Every day, there are more and more reasons for rolling out Ubuntu on the desktop and fewer not to. Read onto find out how making the change can help you drive productivity, increase security and optimise your desktop management and support.

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Productivity

Ubuntu Desktop Edition allows you to choose from thousands of free, feature-rich, fully supported software applications. As a result, you can give your employees all the productivity tools they need and expect – from email, calendaring and contact capabilities, to office productivity suites.

To deliver productivity applications to information workers in the most effective way possible, more and more businesses are choosing to move desktop applications to a Software as a Service (SaaS) platform. Just some of the benefits of this approach are lower licensing costs, centralised desktop management, increased information security and the ability to use smaller, cheaper workstations.

While the benefits are clear, the SaaS approach requires radical changes to the desktop infrastructure. Instead of opening productivity applications locally on their PCs, employees need a single, browser-based interface to access all their critical tools.

Ubuntu offers key benefits for organisations that want to make this fundamental change. Perhaps most importantly, it can be easily customised so you can remove excess functionality and streamline your desktop image. As a result, you can build leaner desktops that are faster and easier to manage.

EMAIL AND CALENDARING

Evolution is the default application in Ubuntu for integrated email, contacts and calendaring. This tool supports industry-standard email protocols such as IMAP and POP, so you can use it alongside popular collaboration server products such as Novell Groupwise and Google Apps Suite. Evolution supports a local address book and calendar as well as remote contacts through LDAP. It also supports calendars through the WebDAV or iCal protocol.

As the default personal information management client in Ubuntu, much of the information in Evolution is available to other Ubuntu Desktop applications. With Ubuntu's new notifications system, users receive alerts for upcoming appointments and incoming emails and they can see a quick view of the day's agenda in their desktop clock. As an additional benefit, they can easily email a file from the file manager and use their Evolution address book to add recipients quickly and easily.

"The office applications in Ubuntu are familiar, intuitive and far better than Microsoft Office when it comes to feature-richness, total cost of ownership and value for money."

MK Yadava
Managing Director,
AMTRON

Evolution is a fully featured open source groupware application – and a powerful, flexible and generally great email client, too.

Evolution makes it easy to connect to Microsoft Exchange servers, filters spam using SpamAssassin and supports S/MIME for secure messaging.¹

¹ http://email.about.com/cs/linuxclientrevs/gr/ximian_evo.htm

OFFICE SUITE

Ubuntu includes the commonly used open-source office suite OpenOffice.org. This software, which is comparable in functionality to Microsoft Office®, provides word processing, spreadsheet presentation and basic database capabilities for the desktop.

With OpenOffice, users can open, create and edit Microsoft Office documents and vice versa. By default, OpenOffice uses the Open Document Format, ODF, ensuring the documents you create can be used by anyone using any other office productivity suite.

The main advantage of ODF is the ability to migrate data from legacy applications to different or new versions with minimal effort and cost. This truly open format ensures long-term compatibility of your data with future productivity applications.

A move from Microsoft Office 2003 to OpenOffice 3 might be compared to a move from Office 2000 to Office 2003: there are small differences, and users who have learned things by rote may require some training, but the concepts are all the same.²

Partner Solutions

Together with our partners, Canonical can deliver an end-to-end desktop solution for your business. We partner with major vendors, finding and integrating essential desktop applications so you don't have to.

WINDOWS INTEGRATION

It's very rare to replace proprietary desktop systems with open source overnight. That means when you introduce Ubuntu desktops into your environment, there's likely to be a mix of Mac, Windows and even legacy UNIX clients. It is equally probable that Microsoft servers will control certain functions, such as print and file sharing or user authentication.

Through extensive development and testing, Canonical has ensured that Ubuntu can integrate fully with Microsoft desktop and server-side systems. As a result, you can start small with your Ubuntu implementation, safe in the knowledge that there'll be no disruption to normal activities. You can also continue to benefit from your existing investments in IT.

To minimise risk for Ubuntu projects, some businesses trial the operating system within their existing Windows environment. Others deploy open-source productivity applications on Windows before migrating to Ubuntu, ensuring the easiest possible transition for end users.

² <http://www.techsoup.org/learningcenter/software/page4765.cfm>

Authentication

Ubuntu includes Likewise Open for authentication within a Windows Active Directory domain. With Likewise, you can join a machine to the Microsoft domain, making use of existing, centralised Windows authentication infrastructure. Likewise also supports offline authentication, so roaming users can still log in when they're not connected to the network.

Likewise Open also enforces defined Active Directory policies for passwords to increase security. If you have more complex authentication needs, you can upgrade to Likewise Enterprise, which enables you to migrate existing Ubuntu user IDs and group IDs to Active Directory (UID/GID mappings).

Using Likewise Enterprise, you can easily apply Active Directory group policies to your Ubuntu systems using standard Active Directory tools. That means you can control hundreds of Ubuntu preferences centrally, just as you can in a Windows environment. It is simple to manage user and computer settings such as desktop lockdown or disabling the command line, and it's just as easy to manage application settings.

File sharing

Ubuntu end users can share files easily with colleagues and customers, irrespective of the operating system or productivity applications they are working with. File sharing is seamless between desktops and laptops, through common file repositories on Windows servers, and between Ubuntu and Windows desktops.

IBM's COLLABORATION SUITE

An alternative collaboration suite supported by Ubuntu is IBM's Client for Smart Work (ICSW). Powered by Lotus Domino server, ICSW on Ubuntu offers proven reliability, with free updates to help you keep your desktops secure and running smoothly.

This solution consists of the Lotus Symphony® productivity suite and Lotus Notes® for collaboration. Lotus Symphony allows you to easily create spreadsheets, text documents and presentations in the OASIS Open Document Format, which is fully compatible with Microsoft Office. Lotus Notes provides a calendaring client with integrated instant messaging and chat, with the option of tapping into a variety of applications built on Lotus Domino.

As an added benefit, ICSW gives you a choice of rich or thin, web-browser-based email clients. By adding VERDE from Virtual Bridges, you can virtualise the desktop and lower your total cost of ownership.

UBUNTU CERTIFIED HARDWARE

Part of Ubuntu's popularity on the desktop is due to its fast-paced development, which allows it to work with all the latest hardware. Canonical works closely with all the major desktop manufacturers to ensure full compatibility with their latest products, including Acer, AMD, Asus, ARM SoC partners (such as Freescale, Marvell and TI), as well as Dell, Lenovo, HP, Intel, Sharp, Toshiba and Wyse.

As part of the hardware certification process, Canonical's Ubuntu developers work with manufacturers to address any technology issues and ensure compatibility with future Ubuntu releases. Our certification engineers also conduct extensive, ongoing testing to establish full compatibility for security and maintenance updates.

By working with all the top desktop vendors, Canonical is ensuring that Ubuntu users can benefit from the power and speed of the latest hardware and subsystems.

To view a full list of certified hardware please visit
<http://www.ubuntu.com/certification/>

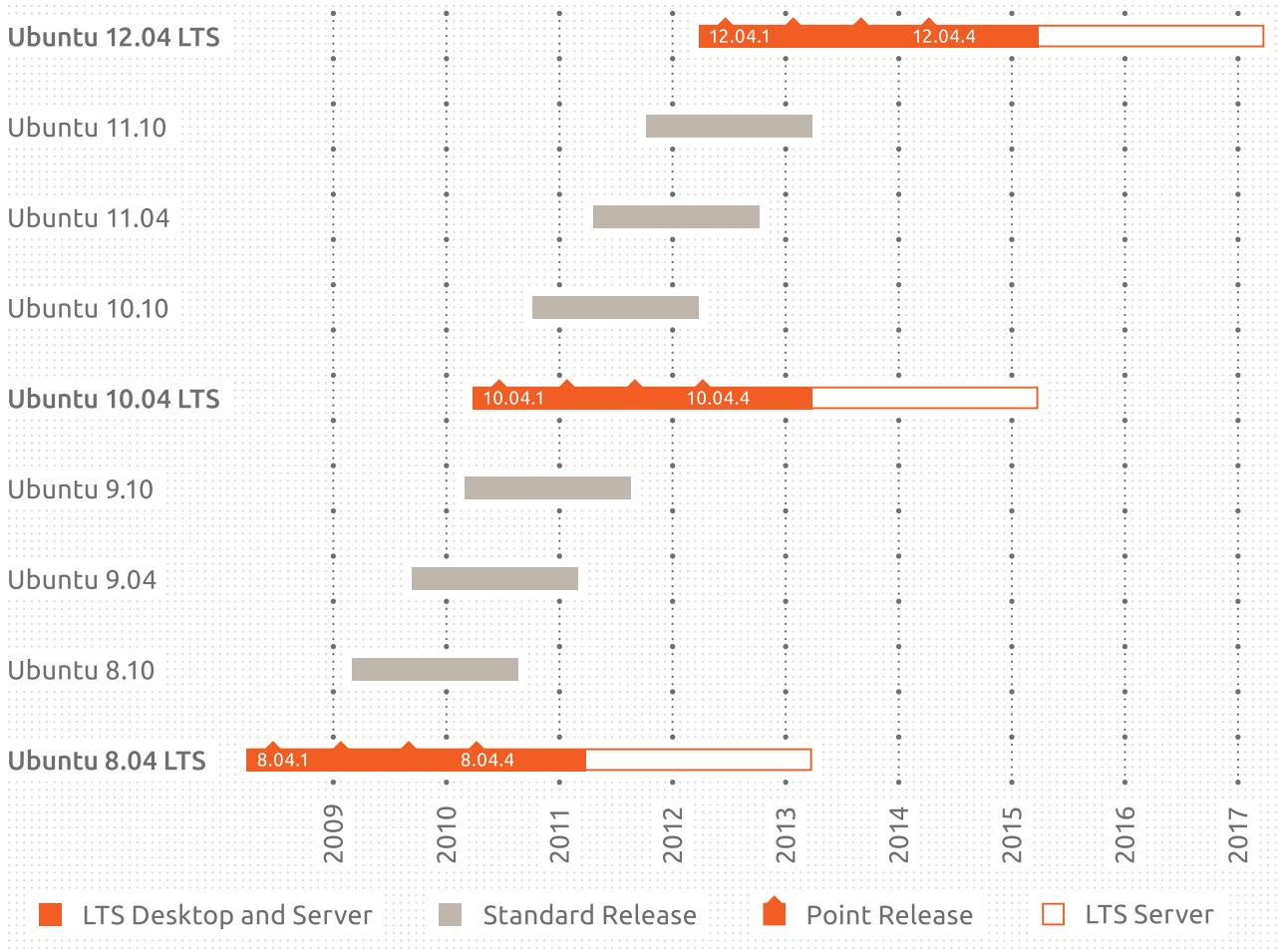
Security

At Ubuntu, we recognise that security is critical for businesses of all sizes. That's why we provide a number of security features at no additional cost, including regular security updates for all releases within their lifecycle. The diagram below shows how updates are delivered during the first 18 months of each standard Ubuntu desktop release and for three years for long-term support releases. Our security team also releases regular security patches, and typically reacts to newly discovered threats within 24 hours.

The security team takes responsibility for addressing all issues that affect source packages in the Ubuntu Main and Restricted repositories. All packages are audited to identify and resolve any security vulnerabilities before they are accepted for integration into Ubuntu. The team also continuously works on proactive security measures, from integrating AppArmor and PolicyKit in Ubuntu through to compiler and kernel hardening.

According to Dell, Ubuntu is unaffected by the vast majority of viruses and spyware. For Dell's top ten list of things you should know about Ubuntu, visit: www.dell.co.uk/ubuntu

Ubuntu Lifecycle



APPARMOR

Security is greatly enhanced in Ubuntu through the use of mandatory access control (MAC) rules provided by AppArmor. This allows you to allocate a security profile to each program, setting the authority and access rights of that program. It supplements the traditional UNIX discretionary access control with additional rules that control which file or system resources a program has access to. AppArmor can even 'learn' typical sets of rules and turn them into an enforcement standard that can be applied widely.

POLICYKIT

This software component, included in Ubuntu, provides a fine-grained and consistent authorisation system for actions that are restricted to certain users and administrators. In a multi-user system, for example, normal users are not allowed to change the clock, change or format internal system partitions, or install software. With PolicyKit, the system services which perform these actions can check whether the user is allowed to perform the action, and ask them for their password before making any changes.

ANTI-VIRUS

Every year Windows viruses cost businesses worldwide billions of dollars in lost time, productivity and data loss. Although Ubuntu is largely immune to any Windows virus, worm or trojan attack, there are a number of standalone anti-virus tools packaged with Ubuntu for added security. The most popular one is the opensource ClamAV software package and its graphical front end, ClamTK.

REMOTE ACCESS

Ubuntu includes a number of client-side applications that allow end users to access company resources securely from a remote location. This is extremely useful where employees work from outside the office or travel frequently.

Ubuntu provides remote access based on native client software that connects with Cisco and OpenVPN virtual private network (VPN) servers. The VPN client software is integrated into Ubuntu's Network Manager and allows end users to connect and disconnect easily from their corporate VPN.

For the benefit of corporate IT departments, Ubuntu includes a remote desktop viewer. This allows helpdesk staff to access any Ubuntu user's desktop remotely and fix issues faster. By default, the remote desktop viewer requires the end-user accept the remote connection, ensuring the highest levels of privacy and security.

Developers and systems administrators can use Ubuntu remote access software to administer both Ubuntu Desktop and Server systems, or any system running a secure shell (ssh) server.

"We've been amazed by the stability and the reliability of the Ubuntu distribution. We don't have to spend time deploying lots of patches and worrying about security. And we don't have any trouble with viruses, which gives us real confidence in Ubuntu as a solid technology platform."

Martin Andel
Systems Administrator,
Skalica City Hall

Systems management and support

Canonical recognises that effective systems management and support are critical in any enterprise IT environment. To help you get the best from your Ubuntu desktops, we provide Ubuntu Advantage, a comprehensive set of services that includes our Landscape systems management and monitoring tool, enterprise-level support, access to the Canonical Knowledge Base and end-to-end legal assurance.

As the commercial sponsor of Ubuntu, Canonical has definitive expertise on the Ubuntu platform. Our Global Support and Services team has direct access to Ubuntu engineering teams, empowering us to resolve even the most complex issues. As a business, having this level of backing and support offers unrivalled peace of mind.

Ubuntu Advantage not only provides support from Canonical's support engineers, it also gives you access to our inside knowledge of Ubuntu. Our support team constantly contribute how-to articles to the online Knowledge Base, keeping it relevant and up to date. This central repository gives you quick and easy access to technical guides on best practices, configurations and issue resolution.

SYSTEMS MANAGEMENT AND MONITORING

Tracking and updating system configurations is one of the most time-consuming tasks for IT administrators. To automate and streamline key tasks related to configurations, Canonical created the Landscape systems management and monitoring tool.

Landscape gives you a single, web-based interface where you can view system parameters and manage package updates across multiple Ubuntu machines. Using it, you can run scripts to automate routine work such as starting and stopping services, performing backups and profiling hardware.

The table on the following page shows how Landscape can help overcome common systems management pain points.

"Ubuntu Advantage provides the set of services that companies need to make Ubuntu a core part of their IT strategy.

Flexible pricing and a choice of service levels means any business can realise what our customers already experience – that to optimize your Ubuntu deployment, engaging with the appropriate Canonical service is the easiest and fastest route to success."

Neil Levine
Vice President of corporate services at Canonical
Quoted in *The Register*³

"By making regular contact with the IT team, we can get to know a customer's IT environment intimately, and proactively advise on how to make the most of Ubuntu in the specific context of the organisation."

Etienne Goyer
Premium Service Engineer,
Canonical

³ http://www.theregister.co.uk/2010/06/07/canonical_ubuntu_services/

Key pain points	Landscape features
High/growing administration and management costs	Reduce daily workloads by simplifying routine system management tasks <ul style="list-style-type: none"> • Save time by applying system updates across multiple desktops • Reduce errors and inconsistencies through script automation • Decrease management times and costs for mobile devices by applying updates when they come online
Time/Resource requirements	<ul style="list-style-type: none"> • Schedule routine updates for maintenance windows • Reduce systems management workloads and give administrators more time to focus on higher value activities • Increase the system density in your business without increasing pressure on existing administrators or hiring new administrators
System downtime	<ul style="list-style-type: none"> • Receive alerts when a system unexpectedly goes offline • Pinpoint bottlenecks or other problems areas before they impact on service
Security	<ul style="list-style-type: none"> • Instantly see system status via a single, web-based interface and receive automatic alerts, to when systems need security or package updates • Enhance security by assigning permissions to different system administrators
Auditing and compliance	<ul style="list-style-type: none"> • Simplifying security reviews based on Landscape's detailed history logs, which display actions performed by all administrators

Ubuntu Advantage includes the complete features of the Landscape tool, offered as a SaaS solution. As an alternative deployment option, the Landscape Dedicated Server is also available. This installs locally on your site, allowing you to host the Landscape service yourself.

Customer repositories

Using the Landscape systems management tool, you can easily align and standardise Ubuntu desktop versions across your business for greater control. You can upgrade your Ubuntu desktops easily from these custom repositories, ensuring greater security and control for desktop updates across the business.

Conclusion

For busy IT managers, change is the enemy. As long as servers and desktops stay running, it's extremely hard to see beyond tomorrow's glitches and challenges.

While resistance to change is undoubtedly the biggest obstacle to open-source adoption, the world is changing fast. This is because more and more businesses are beginning to understand the massive cost and performance benefits on offer from software like Ubuntu.

Using a start-small, incremental approach to deployment, you can experience these benefits for yourself at minimal risk and with no disruption to your normal activities. What's more, you can choose to ramp up your deployment quickly and easily in the future, safe in the knowledge that enterprise-class support is available.

Put simply, Ubuntu is driving a paradigm shift in open-source productivity, security and management based on:

Free productivity software including highly stable office and collaboration applications.

Enterprise-class security based on kernel hardening, on-going security updates and patches, and advanced security tools such as AppArmor and PolicyKit.

Enhanced management and support through the Ubuntu Advantage programme, which gives you long-term access to comprehensive systems management tools and experienced technical support professionals.

To learn more about Ubuntu, and how it can help you drive productivity, increase security and optimise your desktop management and support, visit www.canonical.com or www.ubuntu.com

Alternatively, contact us at <https://pages.canonical.com/contact>