ubuntu
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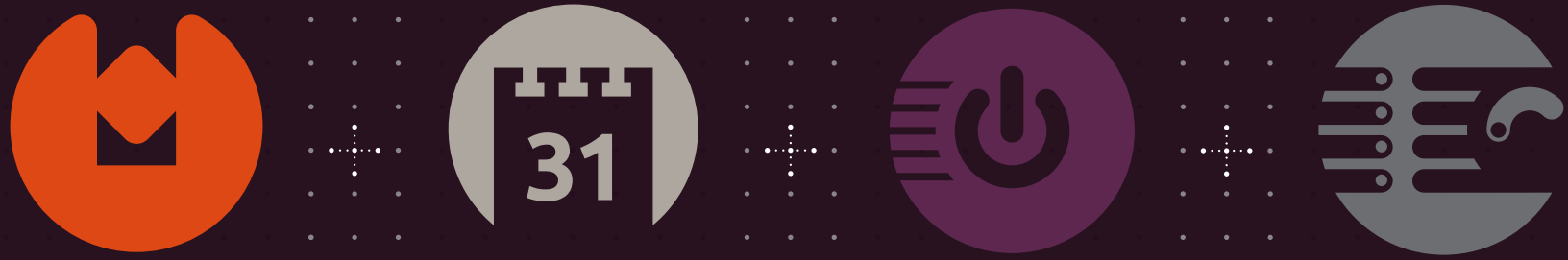
eBOOK

Certified Ubuntu Cloud Guest: the best of Ubuntu on the best clouds

The benefits of using certified images when you choose the cloud's favourite OS



COMMERCIAL SUPPORT FROM VENDOR

GUARANTEED TO BE UP TO DATE

FAST ISSUE RESOLUTION AND BUG FIXES

COMPATABILITY WITH UBUNTU CLOUD TOOLSET

What you will learn

Ubuntu has a long history in the cloud. It is the world's number one platform for deployments of OpenStack – the world's leading cloud infrastructure platform. And it is the number one guest operating system, with more images running on the leading public clouds than all other operating systems combined.

Ubuntu is a free operating system; in fact anyone can download an image, whenever they want. So why are certified images so important?

Certified images are essential for organisations and individuals that require the highest level of security and reliability. Whether it's an unforeseen incompatibility that requires extensive developer resource to fix, or a security vulnerability that impedes operations while you wait for a patch, the implications downtime and vulnerabilities can often be measured in millions of dollars.

Certified Ubuntu Cloud Guest images give you the peace of mind you need to run mission critical workloads on any of the world's leading public clouds. They are supported by Canonical, the company behind Ubuntu, ensuring that updated images are delivered automatically and that bugs and vulnerabilities are fixed fast. Additionally, as the images are standardised, they help you avoid being locked into the services of one infrastructure supplier. They ensure that you are always running on the most up-to-date version of Ubuntu, so you can rely on complete compatibility with other up-to-date Ubuntu images, whether they're running on your developers' laptops or other public clouds.

An enormous amount of work goes into creating and maintaining certified images, because it's necessary to ensure that the best Ubuntu experience is available to everyone. With a cutting-edge toolset and enterprise commercial support available directly from the vendor, there's no better choice in the cloud – whatever the cloud. And if you're considering using the services of a public cloud provider who currently doesn't offer certified Ubuntu images, ask them to talk to Canonical today about joining the CPC program and offering all the benefits of Ubuntu certified images to their customers. Because in today's competitive cloud world, you need all the advantages you can get, whether you're a startup or a stock market titan.

About the author

Udi Nachmany

Director, Ubuntu Certified Public Cloud

At Canonical, Udi heads up the Ubuntu Certified Public Cloud program, which aims to bring the best of Ubuntu Guest (VMs and containers) to users of Ubuntu partner clouds. Most of Udi's career to date has been focused on bringing transformative technologies from inception to commercialisation – both with startups and large corporates. Apart from his day job, Udi enjoys running, yoga, reading and startup mentorship. Having previously worked in Israel, the US, Japan and France, since 2011 Udi has resided in London, UK with his family.

Content

A history of leadership in the cloud

Ubuntu has long been one of the world's favourite free operating systems. It has seen success on the desktop, the server, mobile devices and in the cloud – where it is truly dominant.

It is the number one infrastructure OS for OpenStack, the world's leading open source cloud platform, with 65% of OpenStack deployments. This has led Canonical to develop an unrivalled toolset for automating and simplifying some of the most challenging aspects of cloud design and implementation.

Ubuntu Cloud Guest is a virtualised version of Ubuntu Server, adapted for use on public clouds of all kinds.

One of the first operating systems to be made available widely on the world's public clouds, it now enjoys a dominant position on clouds from vendors including Amazon, Google, Microsoft, IBM and numerous others.

Today, Ubuntu runs more public cloud workloads than any other platform – in most cases with a share of 60-70% of instances. Fast, secure and proven in the most demanding production environments, its significant developer mindshare, a favourable licensing model, and a policy of regular updates are just some of the advantages that have made it the world's number one platform.

It is:

- Proven for enterprise-scale workloads on all leading public clouds
- Free from licence fees, regardless of how many images you run
- Enterprise-grade support and management tools available directly from Canonical
- Maintenance and security updates guaranteed for five years with Ubuntu LTS (long-term support) versions

Long-term support for long-term success

Crucial to the success of Ubuntu in enterprise environments has been its predictable release schedule and commitment to support each release for a given period.

A release of Ubuntu has taken place every six months for the last decade, with a long-term support release (LTS) being issued every two years, complete with the guarantee of security and maintenance updates for a full five years. As Ubuntu has evolved into a mainstay of the cloud, the guarantee of long-term support has been vital to its users.

Every certified image of Ubuntu is based on an LTS release, however the promise of certified images goes much further than regular updates.

What exactly are certified images?

Anyone can deploy an Ubuntu image – even their own – onto a cloud. It's one reason why the OS is so popular. But for mission-critical workloads that can scale to thousands of virtual servers, certified images are vital.

Certified Ubuntu Cloud Guest images are official images of Ubuntu Server, produced and maintained by Canonical and optimised individually to run on public clouds. Free from licence fees, they offer all the benefits of the standard image, from frequent scheduled release cycles and low total cost of ownership, to interoperability with a range of cloud platforms and freedom from vendor lock-in. So cloud operators and users will always have access to the latest Ubuntu features, backed up by the system's extensive security and compliance accreditations.

Certified Images are offered by public cloud operators who have joined Canonical's Ubuntu Certified Public Cloud Program. This means that they work closely with Canonical on many levels to ensure an optimal Ubuntu-based user experience on their clouds.

10 reasons to choose certified images

There are many reasons to ensure your workloads are running on certified images. The most important include:

1. The best Ubuntu experience at all times
2. Optimised for the leading public clouds
3. Dependable experience across clouds
4. Consistency with your development and testing environments
5. Guaranteed to be up-to-date
6. Fast issue resolution and bug fixes
7. Rapid update and software installation
8. 100% compatible with the cutting-edge Ubuntu cloud toolset
9. Systems management and enterprise-grade Ubuntu Advantage support packages
10. A rich ecosystem of services at your fingertips

Let’s look at each one in turn

1. The best Ubuntu experience at all times

Certified Ubuntu images are the only images developed, published and managed by Canonical, the company behind Ubuntu. Which means they are the only images you can be sure have come from a trusted and secure source.

An enormous amount of work goes into creating and maintaining certified images. They are the only ones guaranteed to benefit from Canonical's ongoing development work, which includes performance analysis and testing at scale, across multiple public cloud environments. And they are the only ones guaranteed to include all the latest kernel patches, drivers, tools and packages at the time of deployment.

Ubuntu offers the best experience of any cloud guest operating system – and certified Ubuntu images offer that experience consistently. Regular updates of cloud images mean that the number of updates users need to run is usually minimal, which speeds up the deployment of new instances and lets users react quickly to demands without costly idling of resources.

2. Optimised for the leading public clouds

Every public cloud infrastructure is different, from the kernel to the virtualisation layer. To ensure the best user experience, the world's leading public clouds – including industry heavyweights such as Microsoft, Amazon, Google and IBM – deploy certified Ubuntu images. This means that, while they include packages and tools a vendor requires to enable unique features on their particular cloud platform, they remain complete in terms of all the Ubuntu code.

By working directly with the providers through the Certified Public Cloud Program, Canonical ensures that every certified image benefits from the same Canonical testing and optimisation as the base Ubuntu image, regardless of modifications for a particular vendor. Moreover, they benefit from extra Canonical tests, specific to the partner cloud.

3. Dependable experience across clouds

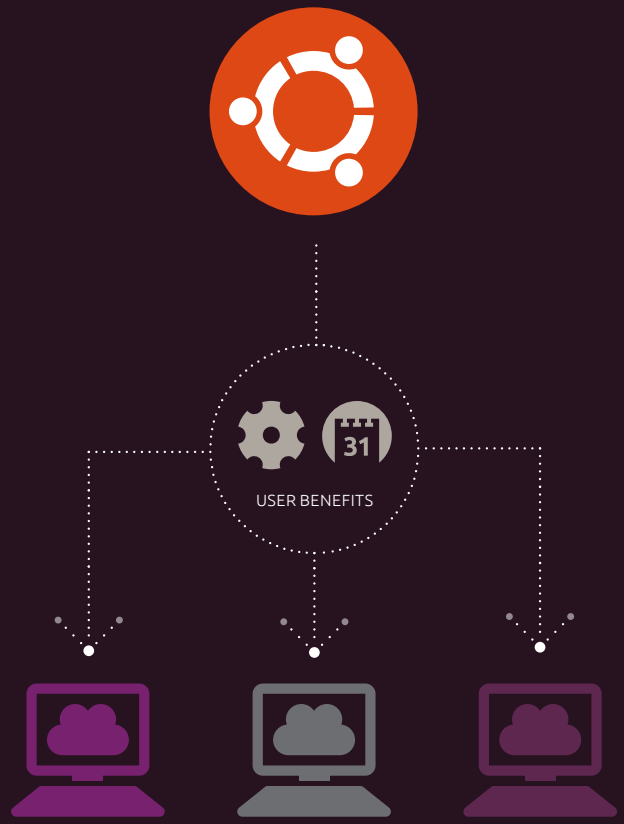
The cloud – and in particular, the open cloud – evolved with many implicit promises. Among them was the freedom for users to move workloads from cloud to cloud, seamlessly. Like all technology markets, however, vendors innovate to compete. And any unique features they introduce, while contributing to the technological development of the cloud as a whole, can introduce variations that make it more difficult for users to switch. The ability of the cloud user to negotiate is therefore diminished as the threat of lock-in rears its head.

With certified Ubuntu images, however, all aspects of the image are tested – including any vendor specific code – to ensure that the Ubuntu experience remains the same, but optimised to the specific cloud provider.

So if you run your workloads on a certified image with one public cloud vendor, you can be assured that the same great experience can be had on another Ubuntu-certified platform.

We work very closely with each cloud owner, not only to ensure they can add tools and code into Ubuntu, but also to ensure that all these additional features are packaged and supported by Canonical – and crucially,updated with the rest of the OS.

This means users can benefit from the features that innovative vendors are putting into their clouds without compromising their ability to switch clouds, or even use multiple cloud providers.



4. Consistency with your development and testing environments

Fundamental to the success of Ubuntu in the cloud has been its popularity with developers – and specifically the consistency between the Ubuntu image and associated tools, from the desktop to the server and the cloud. This means that the version of the OS running on your chosen public cloud will behave exactly the same as the version running on your developers' laptops and any staging or testing environments you operate in-house. If you are using OpenStack internally, as part of a hybrid cloud architecture, the images running on your private cloud will behave in the same way as those running elsewhere.

Even the service modelling toolset, based around Canonical's Juju, will treat all environments identically, automating deployment and management, wherever your services need to run.

5. Guaranteed to be up-to-date

Canonical updates all certified images regularly, usually delivering them on an automated basis, so a user of a partner cloud will always be able to deploy the freshest images

Images are made available to partner clouds every 24 hours with enablement, development, publication and maintenance across all cloud availability zones. Each one has been checked for any changes to the packages and any updated code is automatically rolled in. Updates to the Linux kernel do require a reboot to take effect. These are rolled in and delivered on a six-weekly basis, due to the additional testing requirements – and this makes it quicker and easier to spin the images up. Nevertheless, the regular cadence means that the version of the Linux kernel running inside any certified image at any time will always be within six weeks of the latest version.

6. Fast issue resolution and bug fixes

As described above, certified Ubuntu images contain additional packages. Canonical ensures that all that new code is subject to the same Quality Assurance processes as the rest of Ubuntu.

Certified Ubuntu images are tested in the cloud at scale, so you can rely on them to work in production. Based on knowledge gleaned from more than five years of diagnosing and acting on the issues that can arise in large cloud deployments, Canonical will address bugs through Ubuntu's standard process, whether it pertains purely to Ubuntu or the way the OS interacts with the cloud vendor's own code.

7. Rapid update and software installation

Canonical works closely with public cloud vendors to optimise update mechanisms, which means you can reduce update time, complexity and costs and focus on meeting your service-level targets. Secure archive mirrors provide Ubuntu software packages and are continually updated to have the latest package updates. For the larger clouds – usually more than 250 Ubuntu hosts per region or availability zone – providers are required to make images available in all regions, to ensure fast and reliable access.

8. 100% compatibility with the Ubuntu toolset

Ubuntu has been at the forefront of cloud infrastructure development for more than five years – almost as long, in fact, as commercial public clouds have existed. In this time, Canonical has strengthened the Ubuntu cloud offering with a suite of tools that can help you simplify, speed up, and secure your cloud operations. By using certified images, you ensure that you can make the most of the entire cloud toolset.

Juju could be considered the core of Canonical's cloud ecosystem. It is the fastest way to deploy and scale out your Ubuntu workloads on any compatible cloud – including private clouds built on OpenStack, and all of the world's leading public clouds. Its powerful GUI, command-line and API interfaces make it easy to model, deploy, manage, monitor and scale out your services quickly. Juju automatically manages the relationships of applications, so automation and scaling of solution deployments no longer requires script and configuration file editing.

Whether you are deploying an environment for the first time or making a set of changes to an existing one, you can deploy services to your target cloud in minutes with the click of a button or a short command. And with Juju Charm bundles, you can launch an entire cloud environment with one click.

While its feature set is growing as fast as the cloud itself, Juju has already been available for several years, making it a mature technology. It's one of the reasons why it is relied on so heavily today, with industry heavyweights including Microsoft, IBM, HP, Intel and Cisco all using it – with many of them contributing to its development.

9. Commercial support from the vendor

If you need enterprise-grade commercial support, it's available in the form of Ubuntu Advantage, the Canonical services package. It provides access to experienced Canonical engineers, as well as a range of tools and services that help you optimise the performance of your cloud-based solutions.

Used together, Ubuntu Advantage and certified Ubuntu images guarantee the best possible Ubuntu experience. In addition to the bespoke direct support your cloud vendor receives as part of the Certified Public Cloud program, you too will enjoy direct access to engineering support from Canonical.

Landscape is the systems management solution at the heart of Ubuntu Advantage. It offers a complete package for managing your Ubuntu estate, and because it is designed specifically for Ubuntu by Canonical, it offers more features than any platform-agnostic alternative could, enabling you to easily and effectively manage, patch and update your Ubuntu machines.

To learn more about supporting your cloud with Ubuntu Advantage, visit ubuntu.com/management/landscape-features

10. An established ecosystem of services

Organisations the world over choose Ubuntu for their cloud workloads, in part because of the enormous range of services it supports. When you choose a certified Ubuntu image, you can rely on that entire ecosystem to be fully functional in your cloud environment. From Ceph, Hadoop and MySQL to Nagios, Wordpress and IBM DB2, virtually every major business application can run in the cloud on Ubuntu. Use your certified images in combination with Juju and Landscape and you can deploy, monitor and manage a world-class cloud operation; safe in the knowledge that you have the full support of Canonical.

How to make sure you are using certified images

To find a public cloud partner offering certified Ubuntu images, go to the Ubuntu partner site at ubunt.eu/cpc

On many clouds, non-certified Ubuntu images have been made available by application vendors in the marketplace. Often, they are captured from running images. This means that they are not certified by Canonical, and they may not benefit from the updates and support that all certified images enjoy.

If you are deploying Ubuntu Cloud Guests in the public cloud, you will be able to find the latest images in the main image menu of the cloud you have chosen. This means you can deploy certified Ubuntu Cloud Guests quickly and easily, with no need to download or install them manually.

In conclusion

Alongside hygiene factors like security, stability and speed, Ubuntu benefits from significant developer mindshare, a favourable licensing model and a policy of regular updates. Together, these advantages have made it the number one cloud operating system, both for the base infrastructure and the guest images that run on top.

The real promise of Ubuntu lies not simply in downloading and deploying your own images, but in tapping into the best user experience, the rich ecosystem and the service package offered to cloud suppliers and customers alike. And you can only be sure of this when you insist on certified Ubuntu images.

For mission critical workloads, certified Ubuntu images are nothing short of a necessity.

About Canonical

At Canonical, we are passionate about the potential of open source software to transform business. For over a decade, we have supported the development of Ubuntu and promoted its adoption in the enterprise.

By providing custom engineering, support contracts and training, we help clients in the telecoms and IT services industries to cut costs, improve efficiency and tighten security with Ubuntu and OpenStack. We work with hardware manufacturers like HP, Dell and Intel, to ensure the software we create can be delivered on the world's most popular devices. And we contribute thousands of man-hours every year to projects like OpenStack, to ensure that the world's best open source software continues to fulfil its potential.

Learn more

You can learn more about the Ubuntu Certified Public Cloud Program at partners.ubuntu.com/programmes/public-cloud

You can follow the Ubuntu Insights cloud blog at insights.ubuntu.com/cloud-and-server/

To find a cloud provider offering certified Ubuntu images, go to ubunt.eu/cpc