Ubuntu on Power, LinuxONE / z Systems

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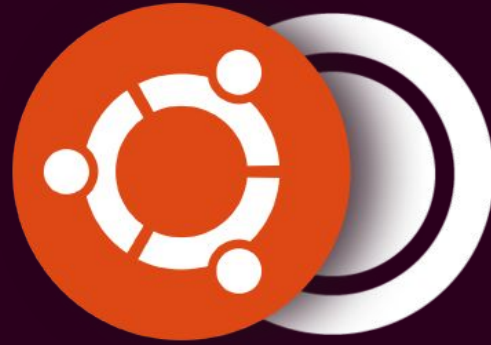
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CANONICAL

Agenda

➢ Overview of Canonical/Ubuntu

➢ Ubuntu Differentiation

➢ Ubuntu OpenStack

➢ Introducing Ubuntu on IBM LinuxONE

➢ Questions

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Canonical

We are the company behind Ubuntu.

2004
FOUNDED

700+
EMPLOYEES

40+
COUNTRIES

London

Boston

Beijing

Shanghai

Canonical and Ubuntu | Best of both worlds

CANONICAL

Global Professional Services

Hardware enablement & Certification

Product Development

Ubuntu

#1 Linux Desktop

#1 Cloud OS

#1 Enterprise Cloud Server

Now also for phones, tablets & IoT devices

Mobile Telephony - Ubuntu Phone

PC - Desktop and Laptop

Enterprise Server

Thin Client OS

Cloud Host and Guest - OpenStack

IoT - snappy Ubuntu Core
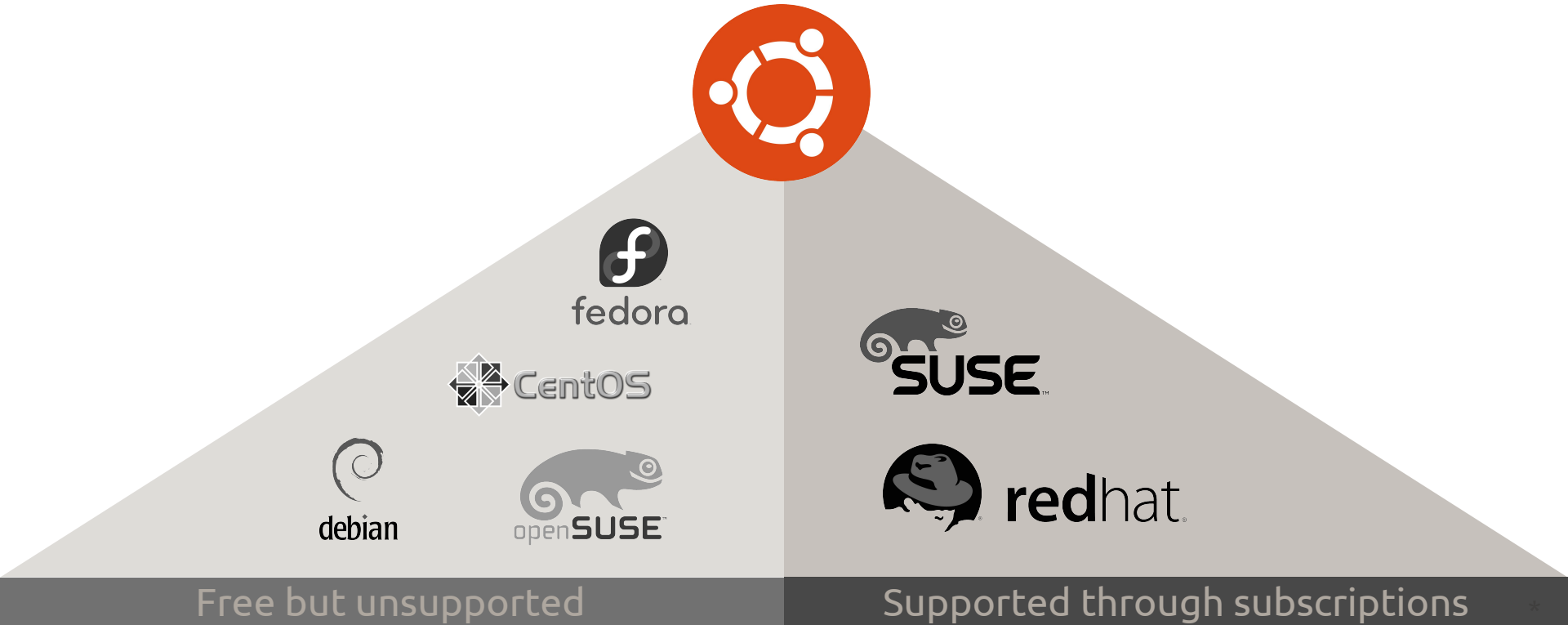
Management and services - Landscape, UA, JuJu

Common Ubuntu Platform
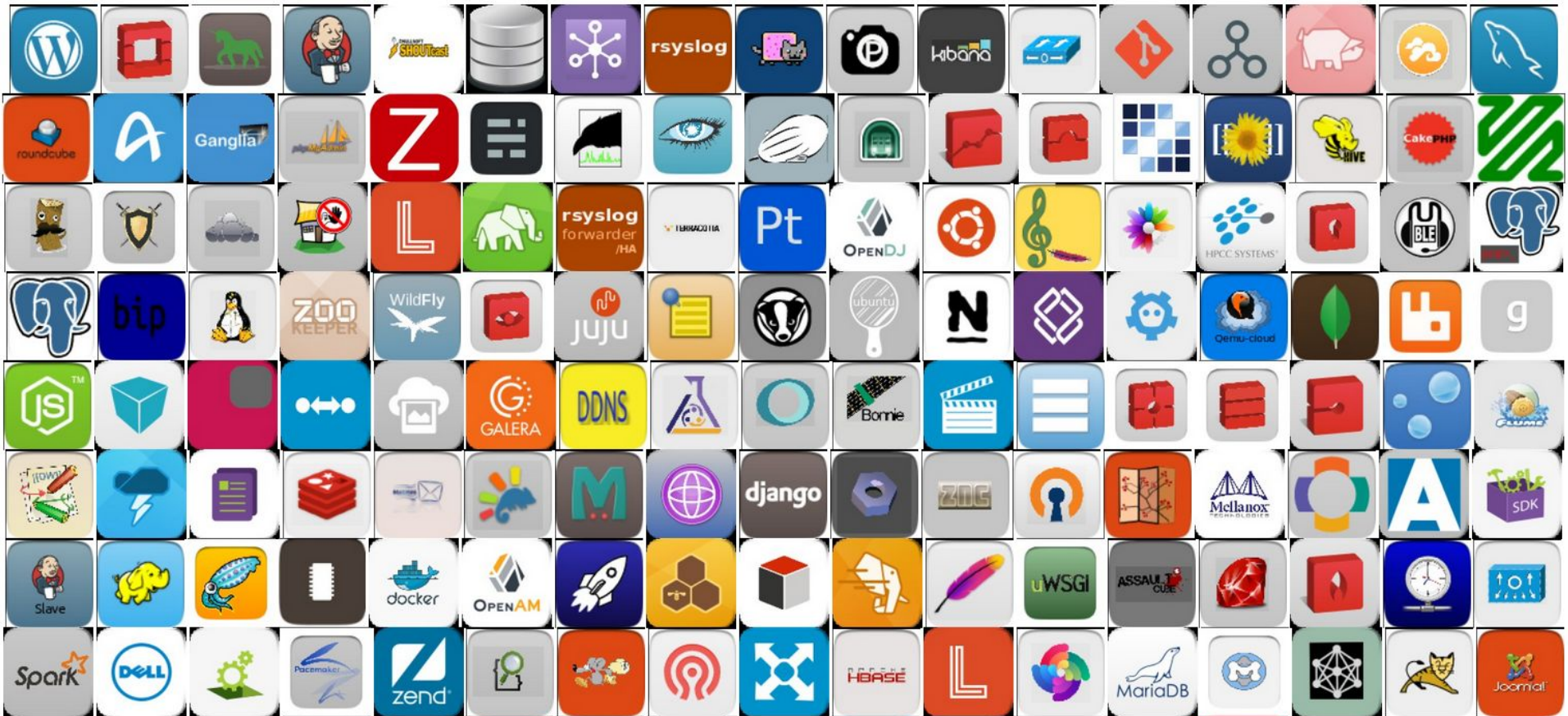
A developer friendly model

Ubuntu OS freely available but supported when you need it to be.

Free but unsupported | Supported through subscriptions

45,000 binaries built from 9,000 source projects
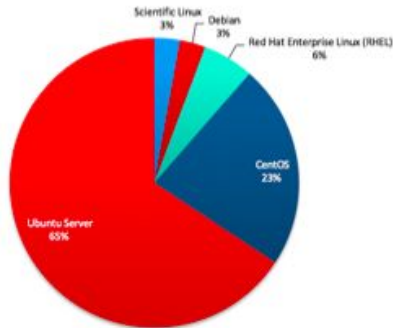
1500+ Workloads for developers to pick

Developers choose Ubuntu for Cloud

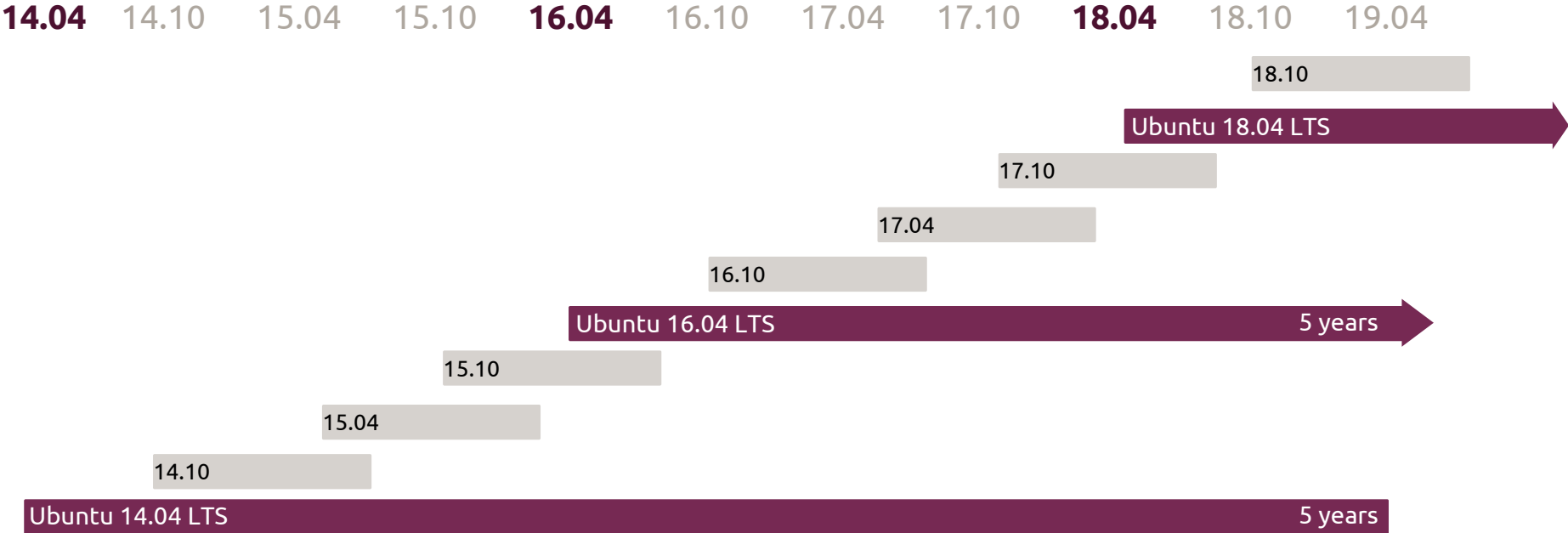
70% Public guests
Sources: QWS, Various, Consolidated clouds

OpenStack with more than 1,000 users

65% use Ubuntu

Consistent release cycle: 5 years long term support every 2 years

14.04   14.10   15.04   15.10   **16.04**   16.10   17.04   17.10   **18.04**   18.10   19.04

18.10

Ubuntu 18.04 LTS

17.10

17.04

16.10

Ubuntu 16.04 LTS   5 years

15.10

15.04

14.10

Ubuntu 14.04 LTS   5 years

OpenStack Release cycle

| **14.04** | 14.10 | 15.04 | 15.10 | **16.04** | 16.10 | 17.04 | 17.10 | **18.04** | 18.10 | 19.04 |

O*   18 months   extra 18 months for customers

N*   18 months

Mitaka LTS   5 years

Ubuntu 16.04 LTS   5 years

Mitaka LTS   5 years

Liberty   18 months

Kilo   18 months   extra 18 months for customers

Juno   18 months

Icehouse LTS   5 years

Ubuntu 14.04 LTS   5 years
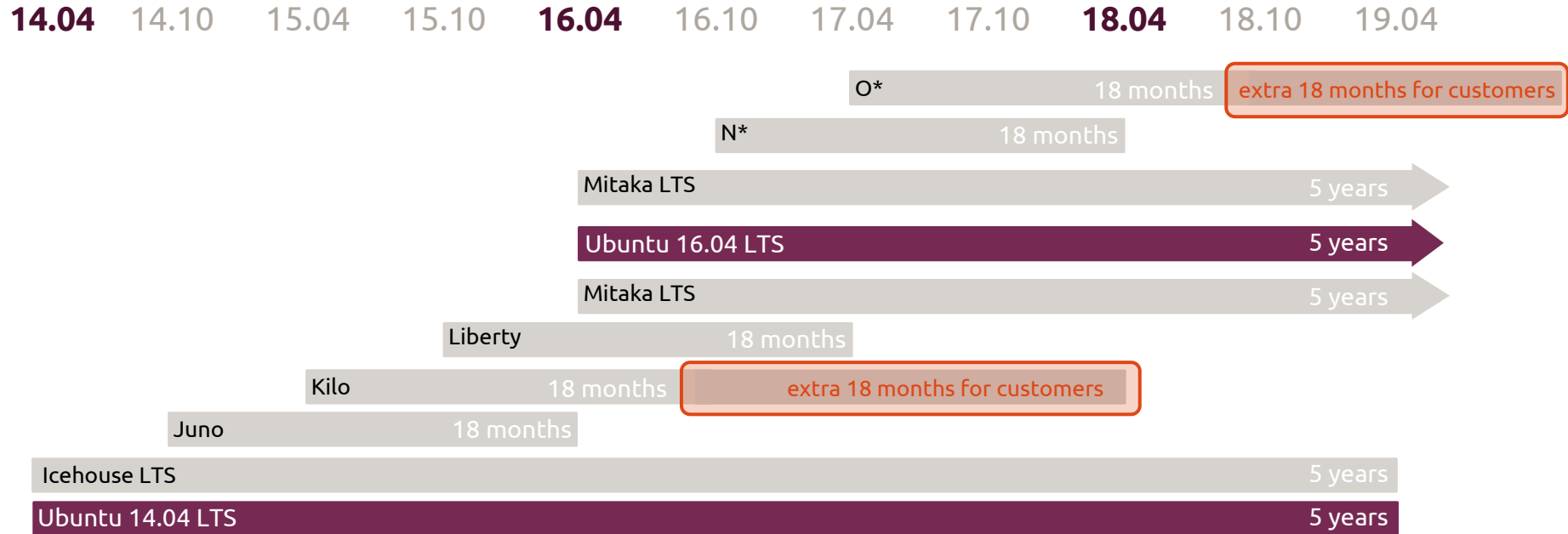
3 complementary automation tools

MAAS

JUJU

LANDSCAPE

PHYSICAL PROVISIONING

+

DYNAMIC RE-PURPOSING

SERVICES MODELING, DEPLOYMENT

+

SCALING

ADMINISTRATION

+

AUDIT

+

COMPLIANCE

ubuntu®
Supported by Canonical

Juju: service modeling and deployment tool for cloud speed

demo - url: http://www.ubuntu.com/cloud/juju

Canonical OpenStack

Management & Automation

Infrastructure Services

Landscape & Autopilot

Juju

Nova

Horizon

Ceilometer /Telemetry

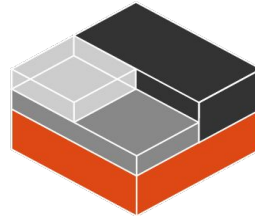Keystone

Neutron

Swift

Cinder

Glance

Ubuntu 16.04 LTS

MAAS

intel

Power

IBM LinuxONE

14

Ubuntu is 70% of modern scale-out ops
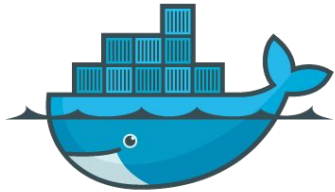
Application Containers

Machine Containers
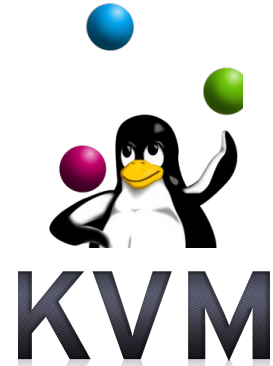
Virtual Machines

LXD Features

LXD is a daemon exporting an authenticated representational state transfer application programming interface (REST API) both locally over a unix socket and over the network using https.

- Two clients for this daemon, one is an OpenStack plugin, the other a standalone command line tool.
- Secure by default (unprivileged containers, apparmor, seccomp, etc.)
- Image based workflow (no more locally built rootfs)
- Support for online snapshotting, including running state
- Live migration support
- Shell command control

LXD

Ubuntu & Z Series

Introducing Ubuntu on IBM Systems parity with x86

	POWER8	IBM LinuxONE™ / IBM
Releases	Ubuntu 14.04 LTS, 14.10, 15.04, 15.10, 16.04 LTS	Ubuntu 16.04 LTS (APRIL 2016!)
Environments	PowerKVM (Guest OS) PowerVM (LPAR) Host OS w/KVM (bare metal PowerNV)	Host OS w/KVM (LPAR) z/VM (Guest OS) KVM for Z (Guest OS)
Kernel	Kernel 4.4 ppc64le	Kernel 4.4 s390x (64bit)
Systems	812L / 822L / 812LC / 822LC	zBC12 / zEC12 / z13 / z13s / LinuxONE
Ubuntu OpenStack	Host OS, PowerKVM	Host OS (LPAR), KVM for Z (Guest OS)
Packages Available	Ubuntu Server Main and Universe (All the supported packages) approx. ~41000	Ubuntu Server Main and Universe (All the supported packages) approx. ~41000
Tools	Juju / Landscape / Autopilot	Juju / Landscape / Autopilot
Support	from Canonical or IBM (Canonical for L3)	from Canonical

Announcing: LinuxONE, z Systems with Ubuntu

Value Prop
- Ubuntu brings LinuxONE to the Cloud with Massive Scalability and Performance in the frame and Elastic Pricing
  - Developer ecosystem with access to modern dev/ops
  - Containers with LXD, Docker
  - Juju for modern modelling and hybrid operations
  - Strong economics - fixed support pricing to enable scalable usage of Ubuntu
  - Very disruptive pricing - See here

LinuxONE Open Beta
- Ran from March 24th to April 20th
- Hundreds of downloads

IBM LinuxONE community cloud for developers: Coming soon!

GA'd: April 21, 2016

Preview: IBM Interconnect Demo

OSS Package Readiness on z Ubuntu

IBM LinuxONE™

Currently Supported		**Work In Progress (Targeting 2H2016)**
Work in progress (targeting 2Q2016)		

Languages and Dev Environment	Databases	Config/Monitoring/ Management	App Development & DevOps	Web Application Dev/Perf & CMS
Node.js	Apache CouchDB	Ansible	ANTLR	Apache HTTP
Erlang	MySQL	Apache ZooKeeper	Apache Maven	Apache Tomcat
gccgo, Golang	MariaDB	cAdvisor	Doxygen	Ceilometer client
oCaml	MongoDB	virt-install	Protobuf	Drupal
Rails	Apache Cassandra	Chef	Snappy-java	HAProxy
Ruby	Apache Geode	Puppet	Xerces-C	WordPress
R	PostgreSQL	etcd	XMLSec	Apache jMeter
Scala	Redis	Consul	Apigility	Joomla
	MongoDB Drivers		Jenkins	Magento
			Wildfly	NGINX
				SugarCRM

Container Management	Messaging & Streaming	Big Data & Analytics		
Docker	Logstash (ELK)	Apache Spark	**IaaS & PaaS**	**Front End**
Docker Compose	RabbitMQ	Elasticsearch	Juju	Kibana
Docker Swarm	Apache Kafka	Apache Solr	OpenStack (2Q)	
Docker Distribution	Fluentd		Cloud Foundary (3Q)	
Kubernetes				

IBM Software on z Ubuntu

Initial focus is on Big Data, Analytics, and Middleware

- **Java – target 16.04**

- **xIC – target 16.04**

- **Liberty Archive Install – target April 2016**

    - **WebSphere Application Server – target 2H 2016**

    - **WebSphere MQ – target 2H 2016**

- **DB2 LUW – target 2H2016**

> **Available in Ubuntu 16.04**
> **Planned for post 16.04**

More Middleware, Big Data and Analytics products are on the horizon

IBM Ubuntu Support Line Offering

IBM Linux Support Line front ends Canonical Ubuntu Advantage support package:

- Level 1 and 2 support from IBM TSS, Level 3 delivered from Canonical
- Incudes support for Ubuntu OS, Ubuntu OpenStack, Juju, MAAS, Landscape
- Per server pricing; not per socket
- For order quantities greater than 25 Canonical will include Landscape Dedicated Server

24/7

What's included?	1 or 3 year options	Ubuntu Advantage Server	Ubuntu Advantage Cloud	Delivered By:
Level 1 & Level 2 Support	9x5 or 24x7 support options via IBM Support Line	✓	✓	IBM's Linux Support Team
Level 3 Support	Available 24x7 to IBM support (based on problem severity), via Ubuntu Advantage	✓	✓	Canonical to IBM (on behalf of Canonical entitled customers)
Landscape systems management	Landscape Dedicated Server, via Ubuntu Advantage	✓	✓	Canonical to entitled customers
Legal assurance	Ubuntu Assurance program, via Ubuntu Advantage	✓	✓	Canonical to entitled customers
Knowledge and support	Knowledge base, via Ubuntu Advantage	✓	✓	Canonical to entitled customers

Ubuntu Advantage Offering also offered by Canonical: http://www.ubuntu.com/download/server/power8

Simple Per Drawer Pricing

Pricing for Ubuntu Advantage is based on the number of Drawers, Regardless of the number of IFLs or Model

Model	Drawers	Cores/IFLs	1 Year	3 Years
zBC12	1	Up to 13	$19,500	$58,500
zEC13	1	Up to 20	$19,500	$58,500
	2	Up to 43	$39,000	$117,000
	3	Up to 66	$58,500	$175,500
	4	Up to 101	$78,000	$234,000
LinuxONE Rockhopper	1	Up to 20	$19,500	$58,500
LinuxONE Emperor	1	Up to 30	$19,500	$58,500
	2	Up to 63	$39,000	$117,000
	3	Up to 96	$58,500	$175,500
	4	Up to 141	$78,000	$234,000

Pricing is in USD

1 Year Premium Support Comparison

Pricing below shows all IFLs enabled
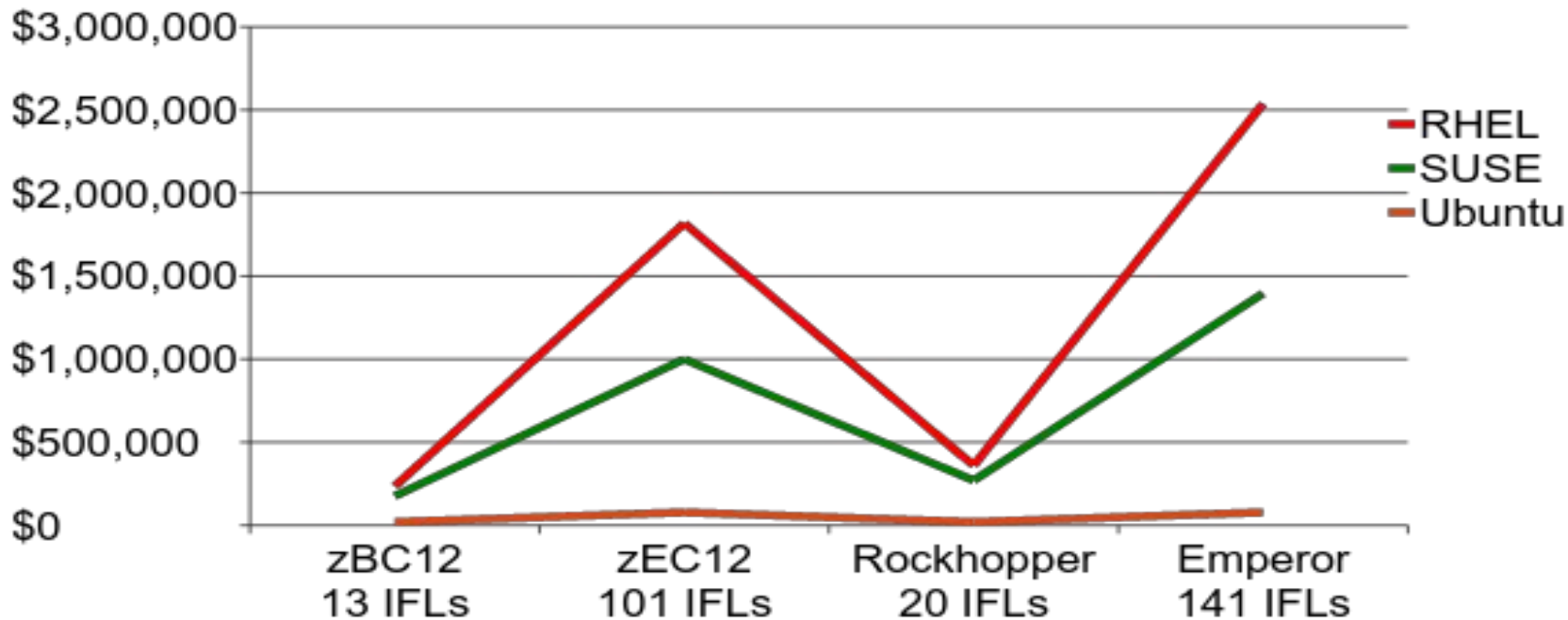
* http://www.suse.com/products/systemz/how-to-buy/
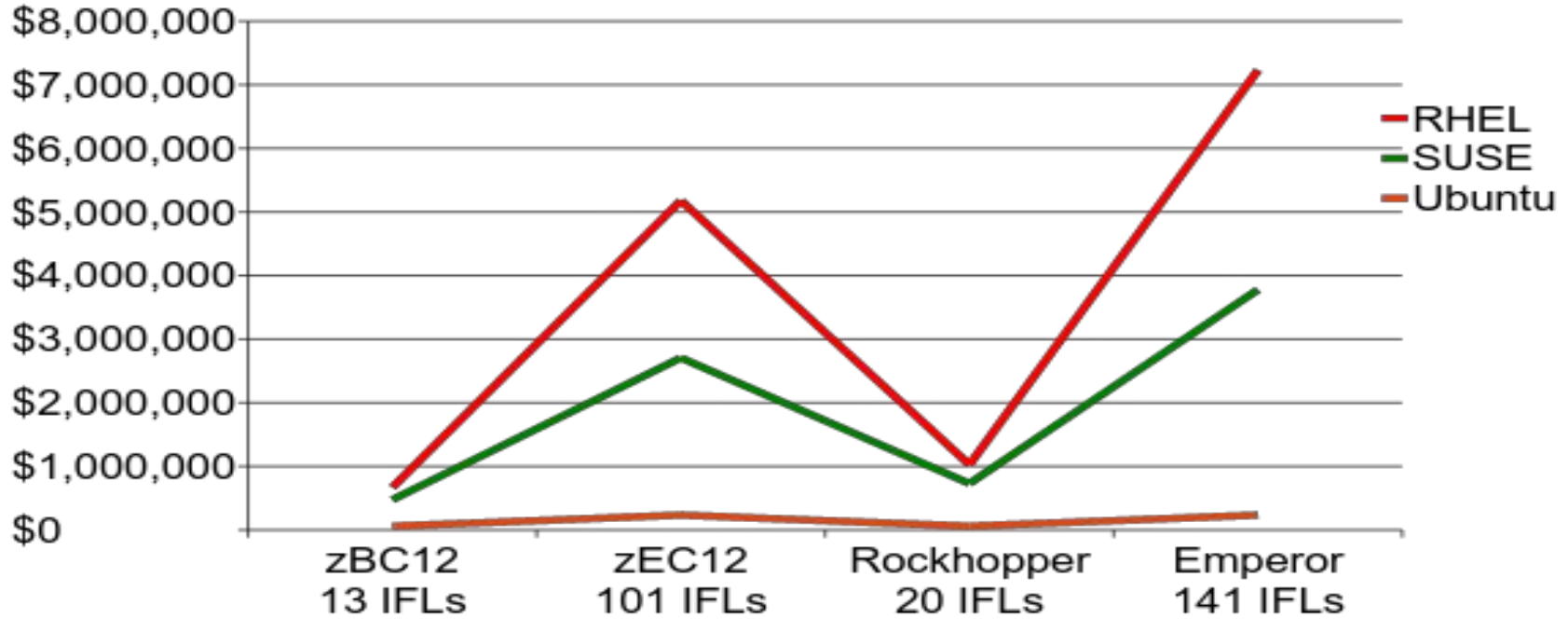* http://www.redhat.com/f/html/partners_us_skulist.html

3 Year Premium Support Comparison

Pricing below shows all IFLs enabled

zBC12 – Pricing Comparison
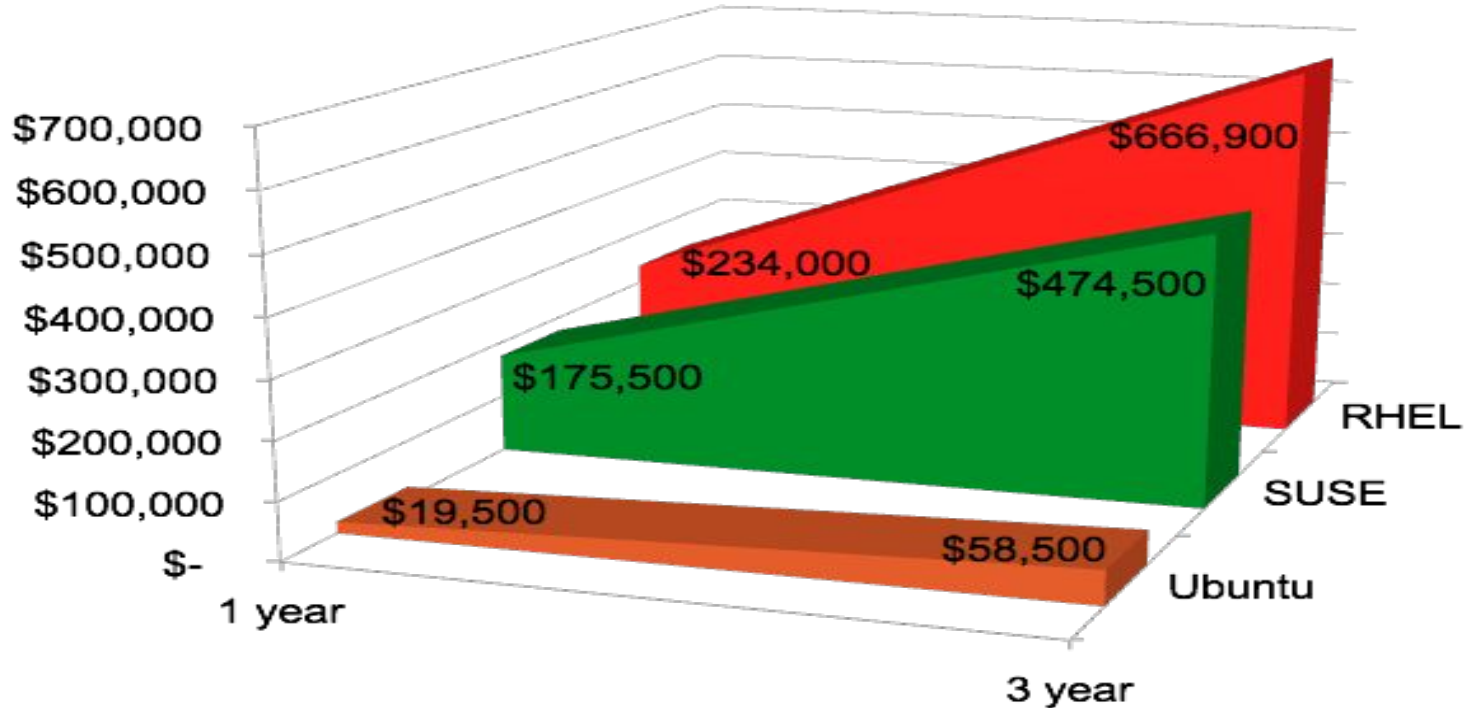
Pricing below shows 13 IFLs

* http://www.suse.com/products/systemz/how-to-buy/
* http://www.redhat.com/f/html/partners_us_skulist.html

Pricing below shows 141 IFLs
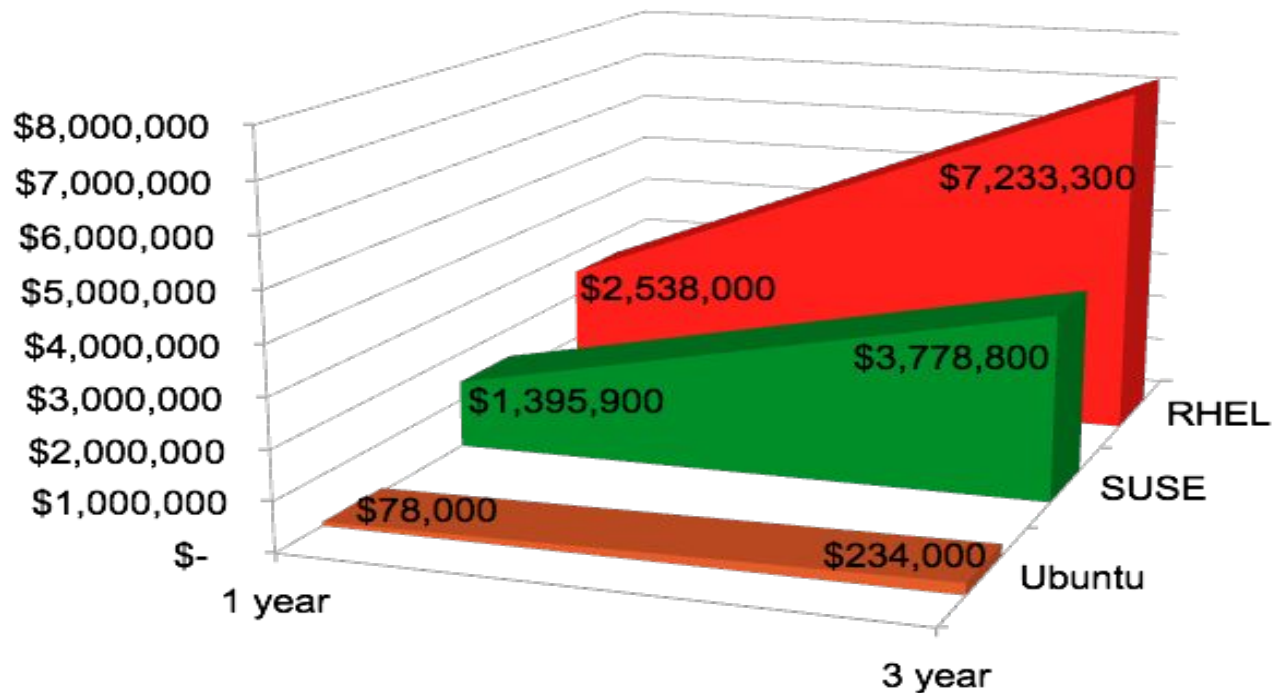
* http://www.suse.com/products/systemz/how-to-buy/
* http://www.redhat.com/f/html/partners_us_skulist.html

Key Resources

Education:
Mark Video Interview with Wired Magazine
Dustin Interview at LinuxCon (LinuxONE announce)
Dustin's Ubuntu on IBM Webinar
FAQs (Insights)
IDC Whitepaper - IBM and Canonical Ubuntu 16.04: Next-Generation Applications on LinuxONE
LinuxONE Insights Articles

Demos:
Ubuntu on LinuxONE (deploying retail workloads with Juju)

Remote Access Resources:
LinuxONE Developer Cloud - Coming Soon!
ISV Remote Access via IBM Dallas Systems Center - Coming Soon!

In Summary

➢ Ubuntu #1 Linux for Cloud, ScaleOut, Dev Ops

➢ >65% Production OpenStack clouds are Ubuntu

➢ Juju and related cloud tooling supports DevOps speed

➢ Ubuntu on IBM Systems: same great Ubuntu experience on Power and the Mainframe/LinuxONE

➢ Get started with a Ubuntu OpenStack POC on IBM Power!

  ○ Ubuntu OpenStack for LinuxONE coming…..

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Thank you

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