Snappy Ubuntu Core

A snappy Platform for Embedded, IoT and 96boards

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CANONICAL

Overview

We are the company behind Ubuntu.

Canonical and Ubuntu | Best of both worlds

CANONICAL

Commercial Backing for the #1 general purpose Linux OS: Ubuntu

Global Services, Support, Certification!

Ubuntu

#1 Linux Desktop

#1 Cloud OS

Now also for phones, tablets & IoT devices

The Devices Revolution!

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The ecosystem is in a race to try new frontiers of connected compute scenarios around IoT!


CONNECTED DEVICES
IN 2020
26 BILLION
9 BILLION
MOBILE PHONES
10 BILLION
CONSUMER ELECTRONICS
7 BILLION
M2M DEVICES

WE ARE AT THE BEGINNING OF SOMETHING BIG

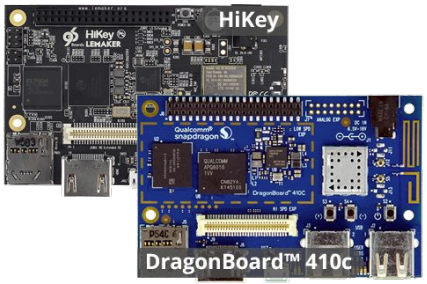
$1.9 TRILLION

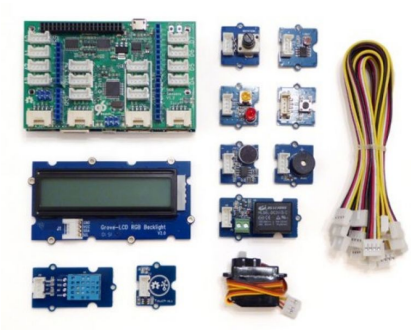
Predicted value-add of IoT across sectors in 2020

CONNECTIVITY

It has never been easier to make a custom hardware appliance...

Building an IoT Appliance





1. Take a 96board
2. Add IoT components
3. Design a cool chassis/box
4. Make the software
5. Call an ODM and ship it!

It has never been easier to solve the challenges for making smart devices using open source components!

Building a Smart IoT M2M Device

1. Take a 96board reference stack
2. integrate existing open-source software
3. Glue and write new!

Good News

The Open Source community has these days solutions for almost everything you can imagine!

But why...

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... do many device innovations run out of funding before they can get tested in the market?

... is it hard for device manufacturers to make enough money to provide the "luxury" of timely and automated security updates?

... is it challenging for SoC providers to offer product builders supported software that can be directly used in products at scale?

... do devices we have at home for a while not have the latest software features found in current gen devices?

IT SEEMS IT IS ...

... too complex to make a product!

... too hard to add features to products!

... too pricey to provide security updates!

... too limited collaboration and reuse

What if...

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A device builder can focus on investing in just the device experience instead of having to solve everything that it takes to make, ship and maintain a linux based product?

A device builder roll software updates to devices in the field with ease and confidence as often as needed?

... just like the Apples, Googles and Ubuntu's of this world?

A device builder add features to your devices already in the field at any time without having to convince the user to flash a firmware?

A device builder could rely on others taking care of enabling the hardware platform and keeping the kernel and OS secure?

There was a ready to use factory process for your software stack!

You could collaborate and reuse in an ecosystem of hardware manufacturers, software and service providers?

What if...

There would be an OS platform that is optimized for building, shipping and maintaining device products that would solve those problems and more for you?

Snappy Ubuntu Core

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Snappy Ubuntu Core

snappy

App Ready

Ubuntu Core with snappy **transactional updates**

Applications confined by Canonical's **AppArmor** kernel security system

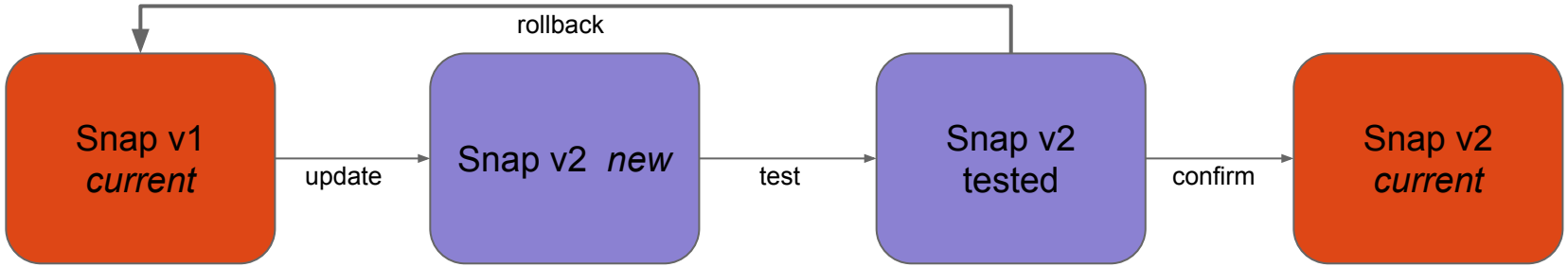
Safe, reliable, worry free **updates** with tests and rollback

Amazing developer experience with **snapcraft** to build from source

Easily extensible with **frameworks**

Perfect for the smartest **IoT**

Snappy System makes updates easy and safe

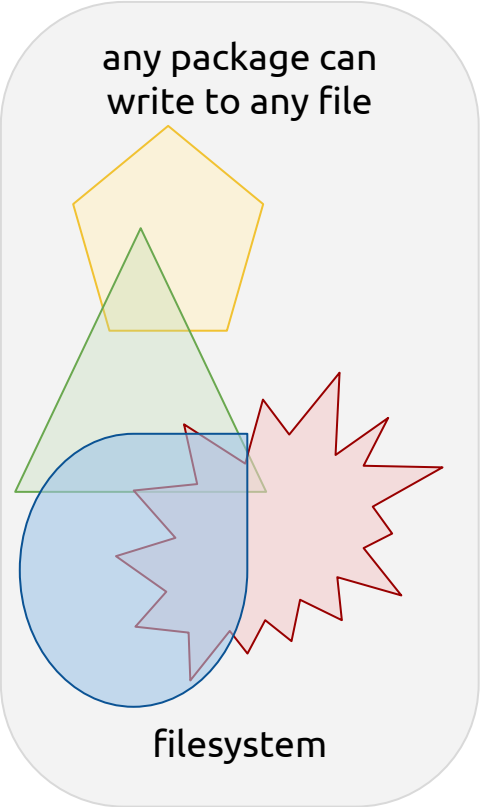


Current: Updates to a system is a high risk operation that you rather want to avoid

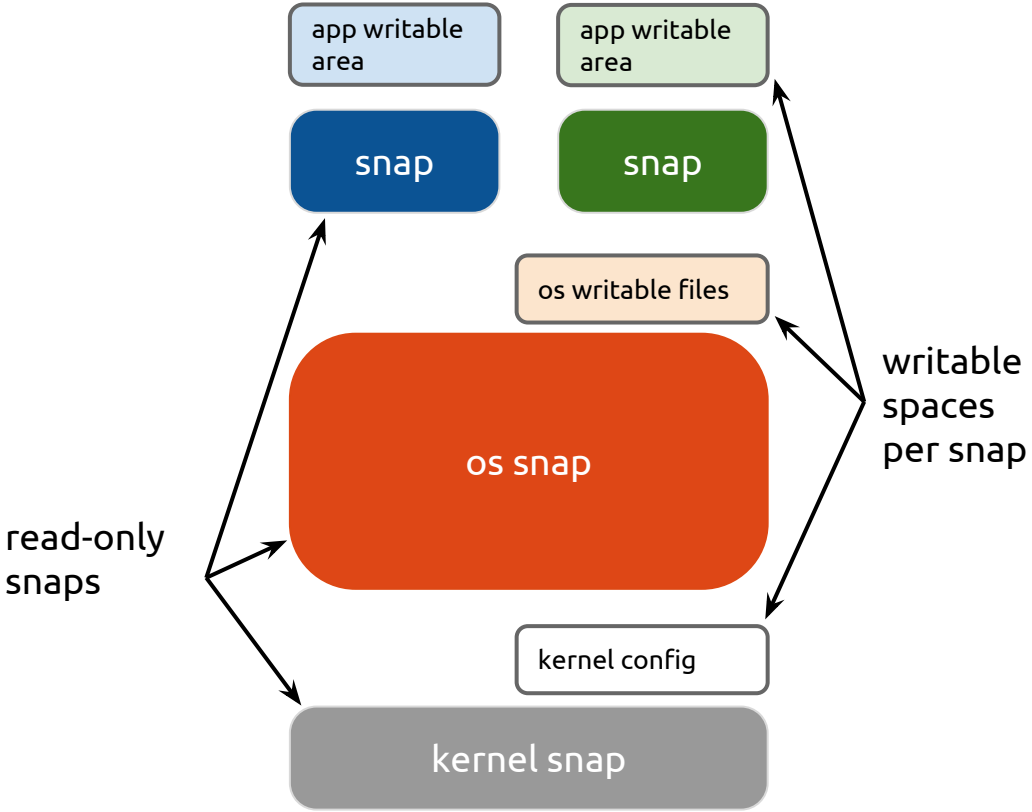
Snappy: Updates to your devices in the field is convenient and can be done with confidence just like done by the Apples, Googles and Ubuntu's

Snappy Platform: enables device builders to implement a modern update strategy:
update through store, canary testing in field; phased updates; auto rollback

classic device



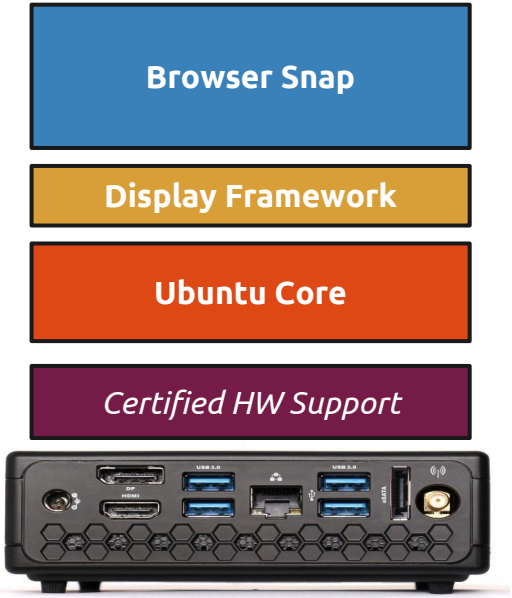
snappy devices



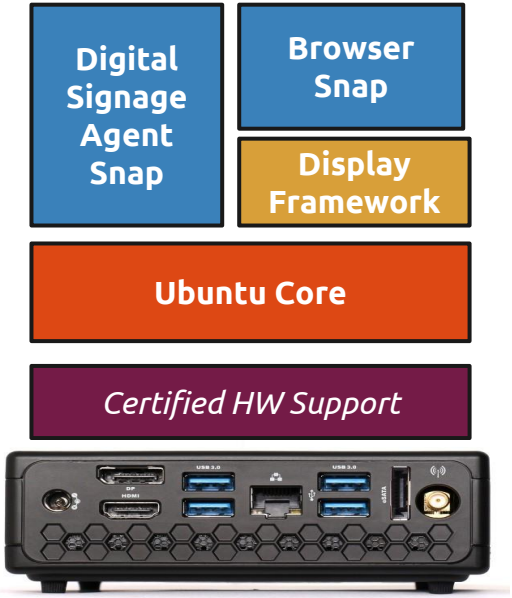
The end of 'one size fits all'

Leverage a single HW platform for multiple purposes

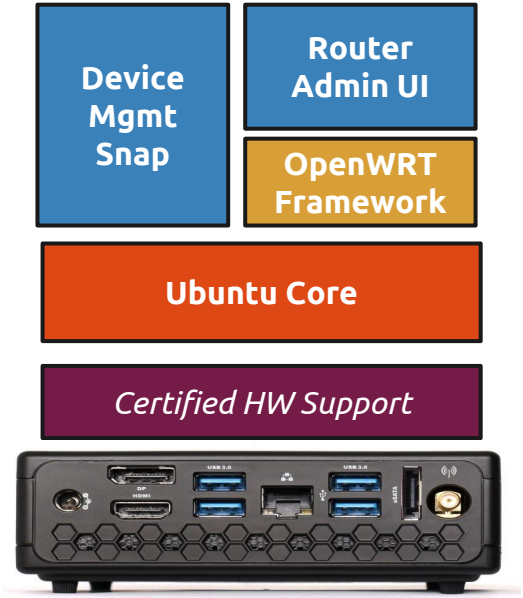
Snappy Ubuntu Browsing Appliance



Snappy Ubuntu Digital Signage Appliance



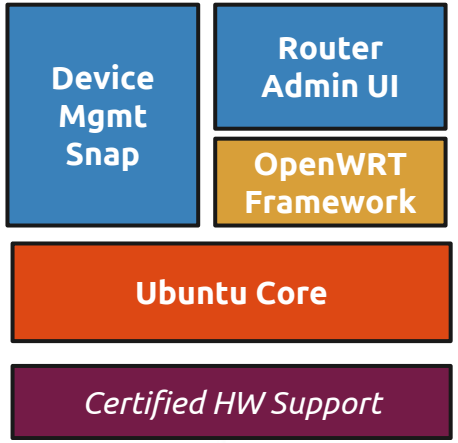
Snappy Ubuntu Home Router Appliance



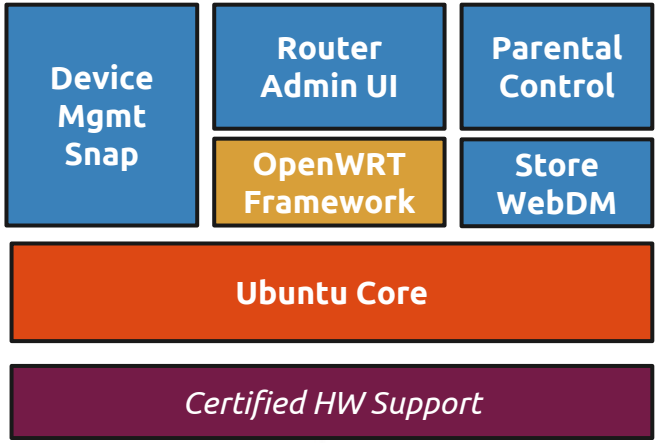
The end of the 'early device death'

Add value to devices already in the field

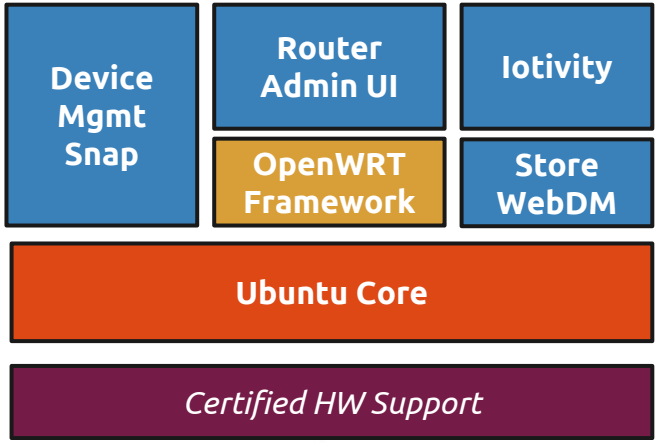
Snappy Ubuntu
Home Router Appliance



Snappy Ubuntu
Home Router Appliance w/ Store

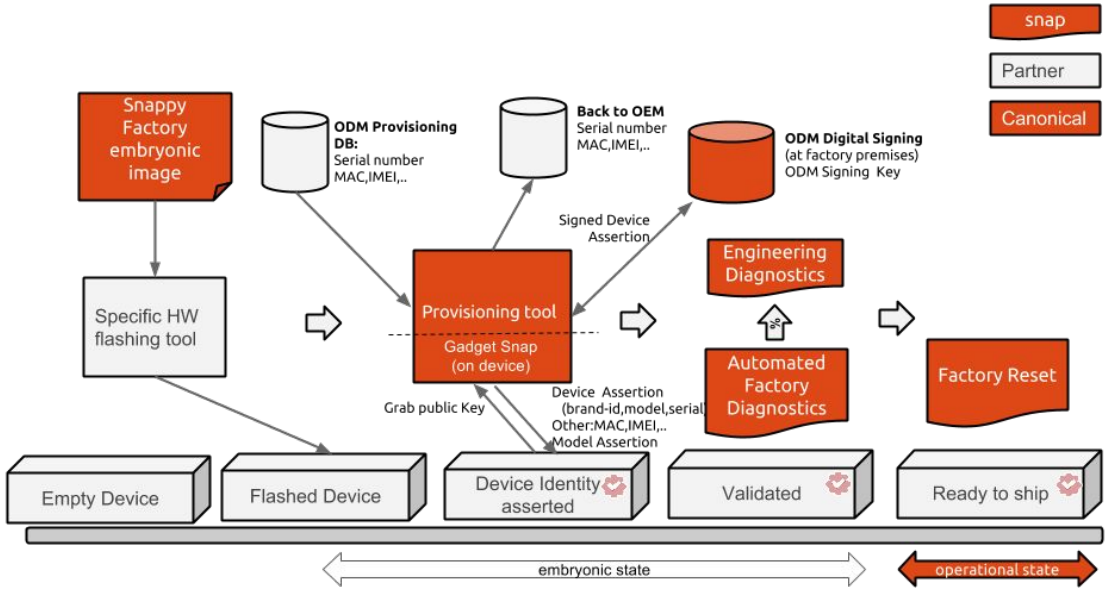


Snappy Ubuntu
Home Router Appliance w/ IoT



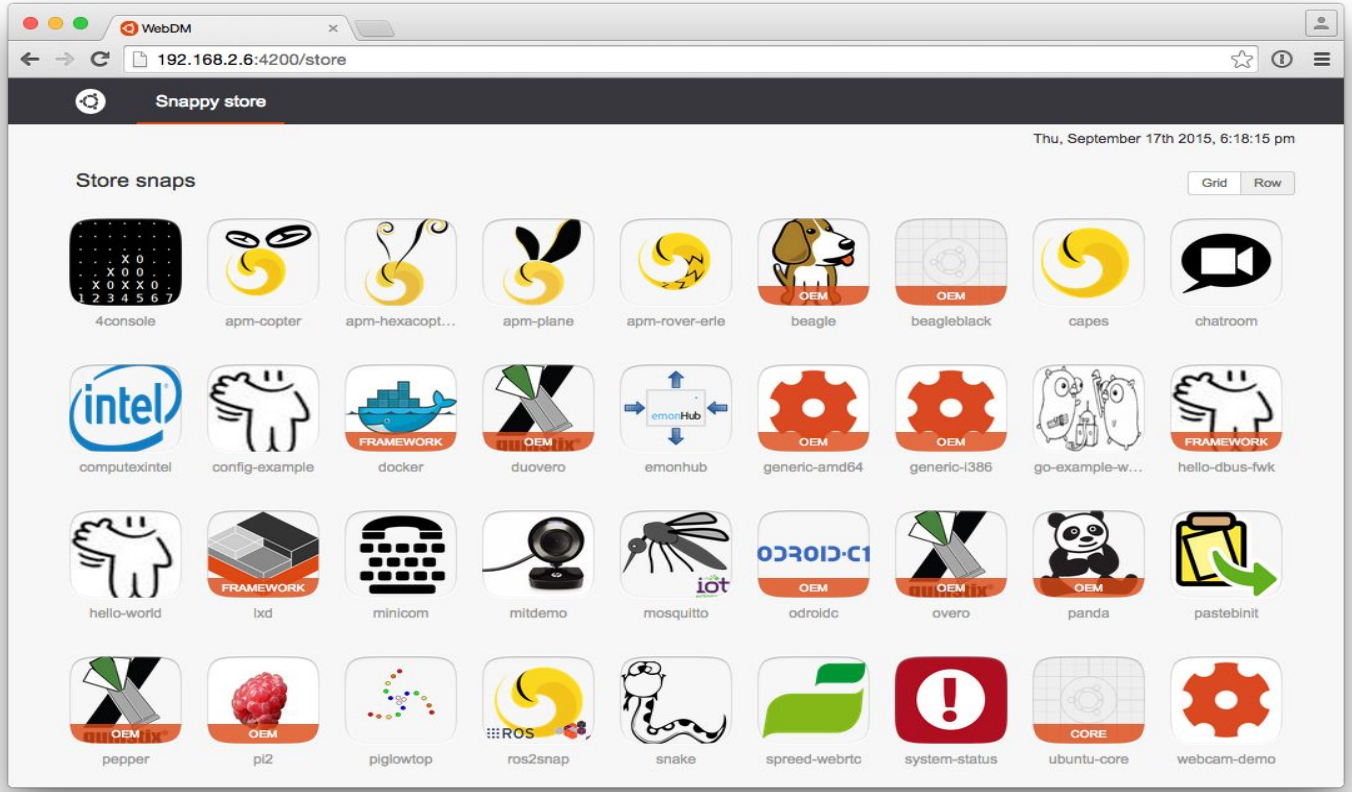
Snappy Factory Story

Another Problem you don't want to solve...

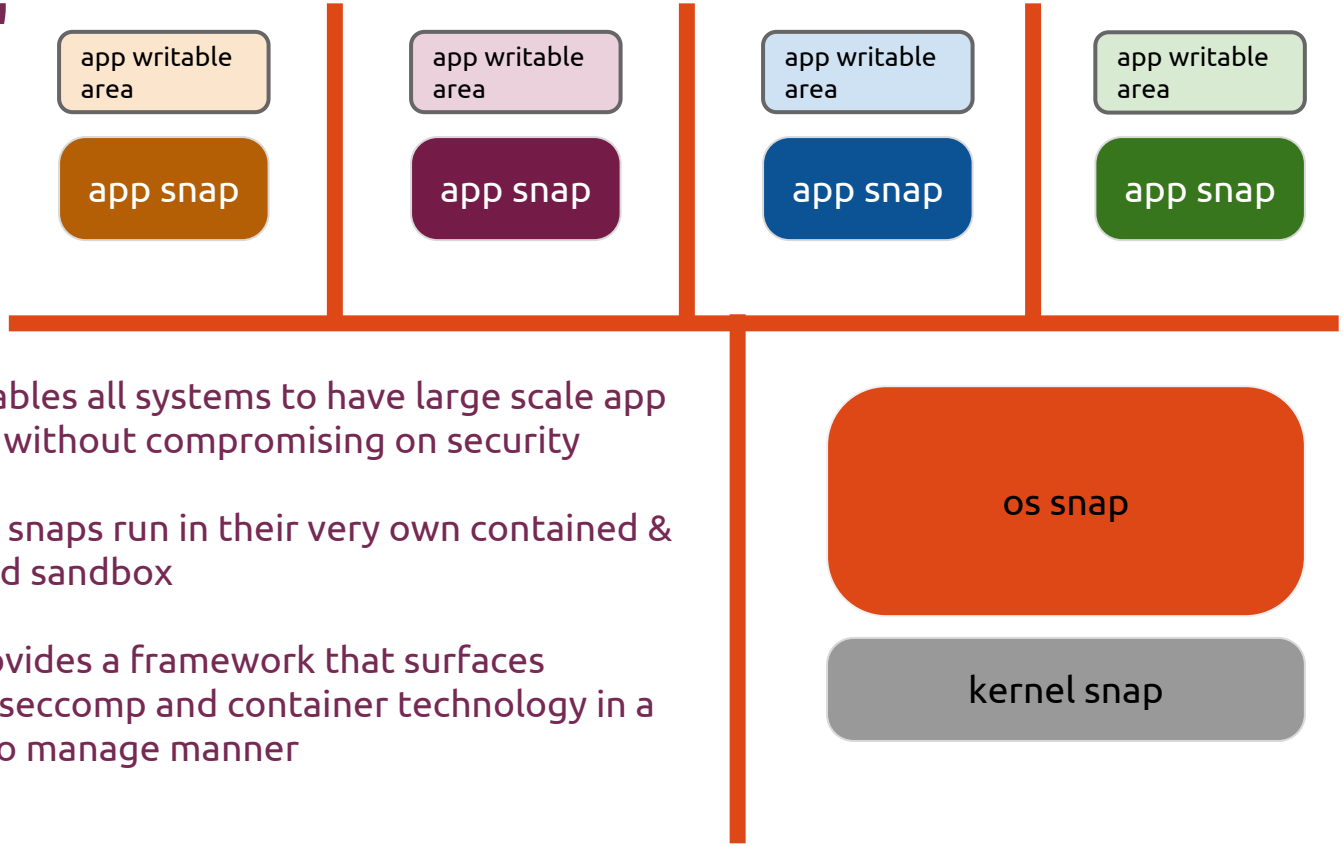


Snappy Store

Long Lasting Value and Revenue out of "Device Real Estate"



Snappy - Sandboxing for an "App Ready Device"

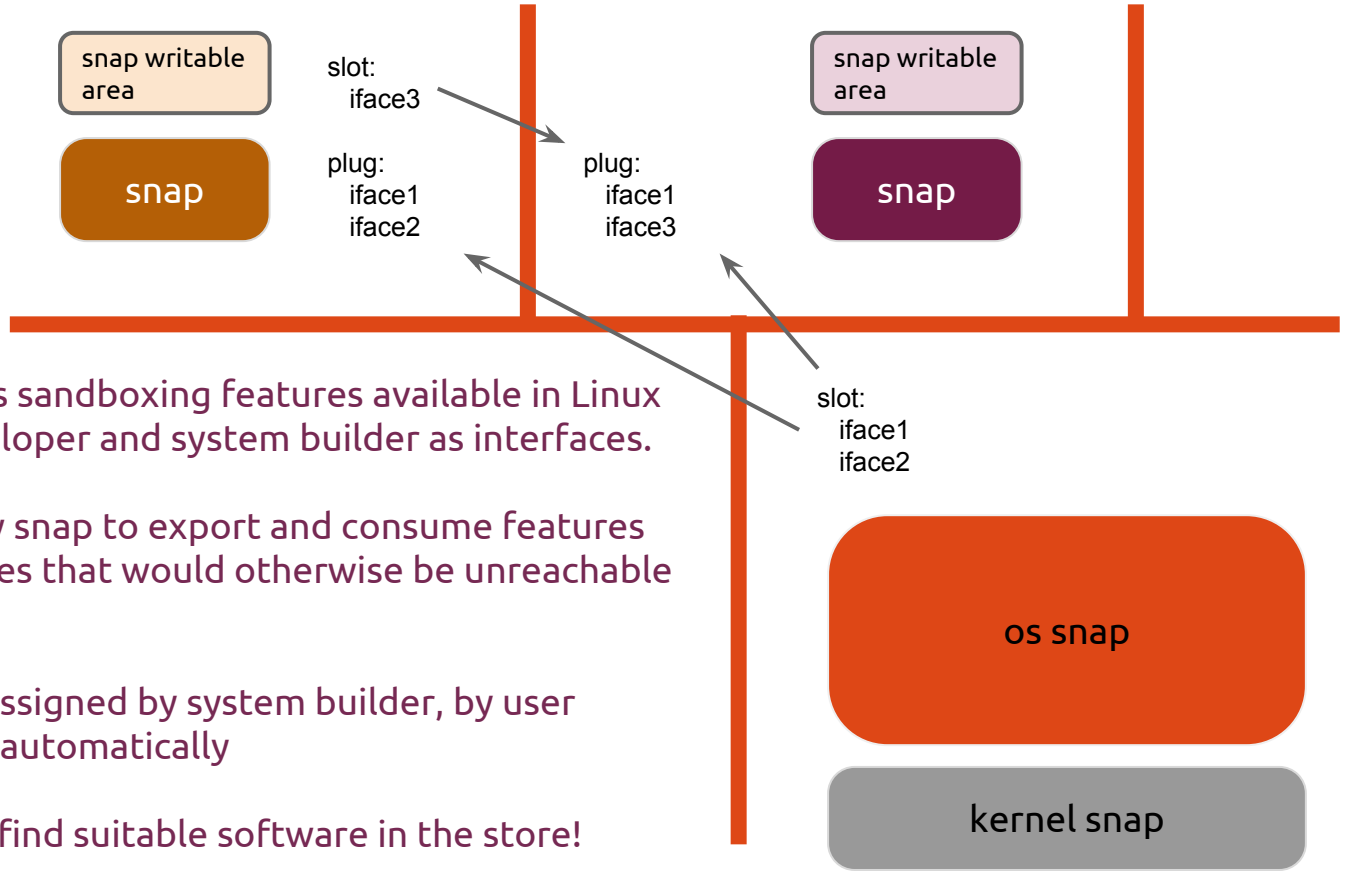


Snappy enables all systems to have large scale app ecosystem without compromising on security

For that all snaps run in their very own contained & isolated and sandbox

Snappy provides a framework that surfaces apparmor, seccomp and container technology in a very easy to manage manner

Snappy Sandboxes & Interfaces



Snappy surfaces sandboxing features available in Linux to the app developer and system builder as interfaces.

Interfaces allow snap to export and consume features and hw-resources that would otherwise be unreachable in other snaps

Interfaces get assigned by system builder, by user interactively or automatically

Interfaces help find suitable software in the store!

Snappy Ubuntu Core and 96boards

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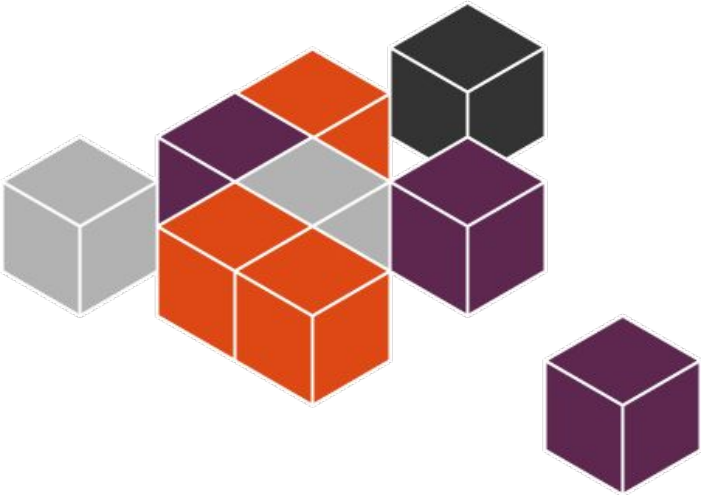



Reference
Software
Platform


Reference
Software
Platform

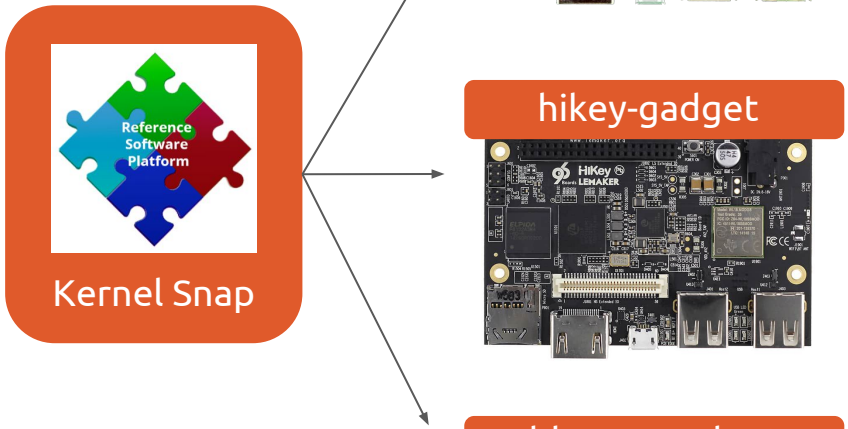
+


snappy

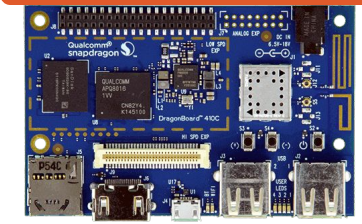
Kernel snap as the **core to build upon**

Gadget snap **differentiates** your product

One **unified** application ecosystem

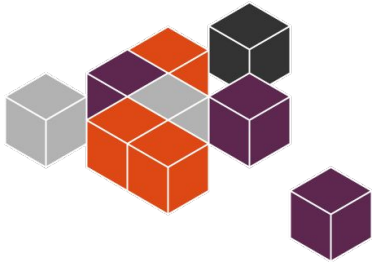


db410c-gadget



hikey-gadget

bbgum-gadget



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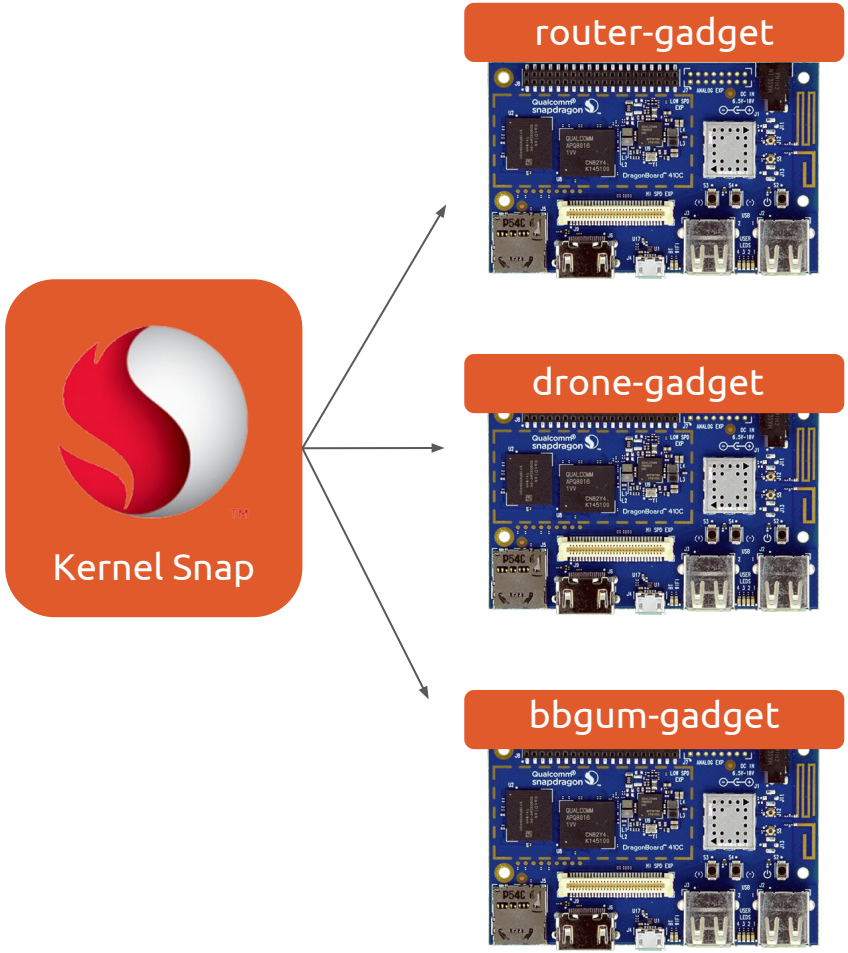
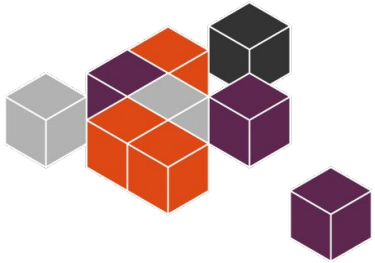

Kernel Snap
router-gadget
drone-gadget
bbgum-gadget

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Mix and match ecosystem: kernels, gadgets and applications

Single tool for image creation, generic instructions to deploy

Abstract away the platform details (ptable, bootloaders, blobs)

Concentrate on **your software solution**

Collaboration in the **developer community**

ubuntu

How does this look on the Dragonboard?

Demo and Q/A

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Getting Started

http://developer.ubuntu.com/en/snappy/start

Docs:

http://www.ubuntu.com/things
http://developer.ubuntu.com/snappy

Github:

http://www.github.com/ubuntu-core

Mailing Lists:

snappy-devel@lists.ubuntu.com
snappy-app-devel@lists.ubuntu.com

IRC:

#snappy on irc.freenode.net

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ubuntu.com/snappy